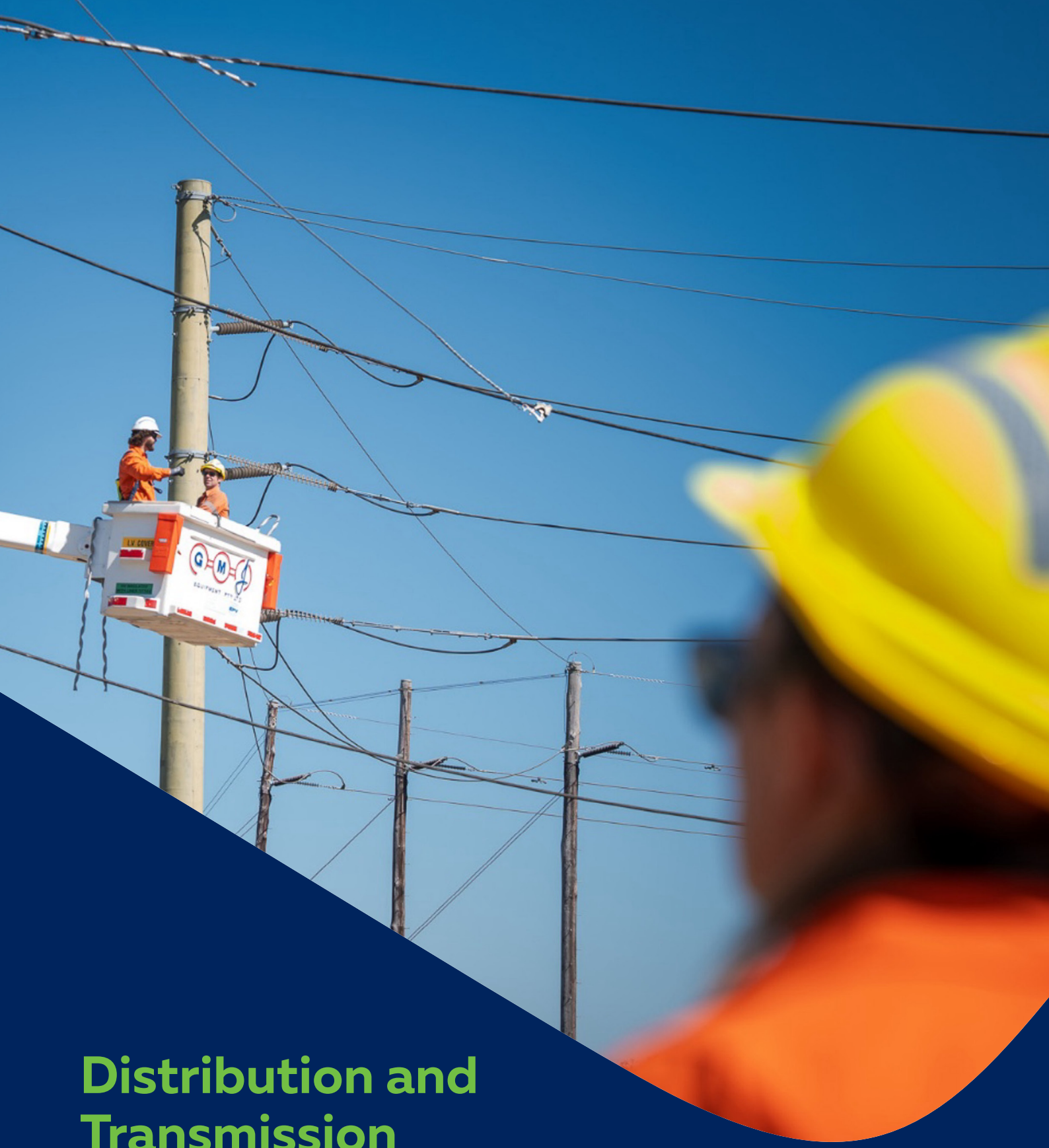


# Distribution and Transmission Annual Planning Report Summary

December 2025

Ausgrid

# Guide To This Document

We are the custodians of a network that connects communities and empowers the lives of our 1.8 million customers, and have done so for over a century. Ausgrid operates as both a transmission and a distribution network service provider. Our network is made up of approximately 30,000 substations connected through high and low voltage power lines, underground cables, tunnels and power poles. Our operations include infrastructure construction, maintenance and operation, customer connections, street lighting and telecommunications. We are increasingly involved in supporting the transition to a net zero economy through the connection of renewable energy to the grid, by the electrification of loads such as transport via electric vehicles and by supporting the NSW Government's Electricity Infrastructure Roadmap through the development of renewable energy zones.

The Distribution Annual Planning Report (**DAPR**) section of this document covers a five year forward planning period, while the Transmission Annual Planning Report (**TAPR**) section covers a ten year forward planning period, from December 2025. Our 2025 Distribution and Transmission Annual Planning Report (**DTAPR**) document is accessible via Ausgrid's website www.ausgrid.com.au/DTAPR, with the supporting data at our new online portal located at https://dtapr.ausgrid.com.au.

This data has been structured to enable you to easily target the key locations and come to us with solutions that more readily meet the needs of our customers and grid.


# Message from Junayd Hollis

Ausgrid continues to play a pivotal role in enabling the energy transition across its communities. We have an obligation to protect the long-term interests of our customers and the communities we serve. As adoption of consumer energy resources (**CER**) accelerates, through rooftop solar, battery storage, and electric vehicles, our network is evolving to become smarter, more dynamic, and more customer focused.

Our purpose is to make electricity accessible for all, and our vision is for our communities to have the power in a resilient, affordable and sustainable future. This aligns with our customer's priorities for:

- **Reliable electricity** – confidence that Ausgrid is there to power their needs;
- **Affordable electricity** – empowering customers to manage their energy use and bills; and
- **Renewable electricity** – supporting Australia's decarbonisation goals and protecting our planet.

## A Year of Growth, Innovation and Connection

In 2025, Ausgrid has continued to see strong growth in demand across the network, driven by electrification, large loads connecting and population growth. The adoption of CER continues to rise, giving customers greater control over how they generate, store, and use electricity.

This year brought significant progress on the Hunter-Central Coast Renewable Energy Zone (**HCC REZ**). In April 2025, the NSW Consumer Trustee formally confirmed Ausgrid as the preferred network operator for the HCC Project, authorising us to design, build, own, control and operate the network infrastructure required to deliver 1 GW of transfer capacity by 2028. Ausgrid and Transgrid have also jointly developed projects to expand the HCC REZ and are currently working with NSW EnergyCo and market proponents on detailed modelling work to progress these projects.

Investments in **battery energy storage systems** (**BESS**) and **community batteries** are improving reliability and allowing more renewable energy to be shared locally.

Electric vehicle (EV) uptake is accelerating, and we are exploring vehicle-to-grid (**V2G**) technology to support network stability and enable customers to use their energy more flexibly.

Complementary initiatives such as **Stand Alone Power Systems** (**SAPS**) and **microgrids** are delivering more resilient and efficient solutions for customers in remote and **bushfire-prone areas**. This year, the commissioning of the **Merriwa Microgrid** marked a significant milestone in our resilience journey. The system combines solar generation, battery storage, and backup generation to supply local customers during outages, enhancing energy security and demonstrating how innovative, community-based solutions can support regional resilience. There have been two recent significant storms that were in the areas we have identified for investment in network resilience projects, including the Central Coast. This highlights the importance of Climate Resilience Program's place-based approach, including prioritised investment in communities most frequently impacted by extreme weather events.



## Building a Smarter, More Dynamic Network

Through our wider **Network Digitisation Program**, we continue to modernise the way we plan, monitor and operate the grid. Advancements in data, analytics and automation are supporting more efficient decision making, with technologies such as **Fault Location, Isolation and Service Restoration** (**FLISR**) improving reliability by restoring supply more quickly to customers during outages.

This year we also launched the inaugural **NSW Distribution System Plan** with Endeavour Energy and Essential Energy, which sets out a single unified view across the three NSW electricity distribution networks on how to fully leverage and optimise the existing distribution network to meet future energy needs. This Plan has shown NSW could unlock up to $4.3 billion in value by using available network capacity and integrating CER like rooftop solar, batteries and EVs.

We are also enhancing the visibility of the network by expanding our mapping portal in early 2026 to incorporate 11kV and low voltage network assets, giving customers, councils and developers clearer insights into network hosting capacity and opportunities for connection.

We are also focussed on deepening our partnerships with local communities. We have proposed a pilot program, the Community Power Network (**CPN**), to enable more communities to benefit from the energy transition by co-ordinating how energy is generated, stored and shared in neighbourhoods. This will help to unlock smarter ways to reduce costs, support more solar energy, and help everyone in the community to benefit – whether they have rooftop panels or not.

Together, these digital and community-centred initiatives lay the foundation for a **smarter, more responsive and more resilient distribution system**, capable of adapting to the rapidly changing needs of our customers and the broader energy network.

## Our 2025 Distribution and Transmission Annual Planning Report (DTAPR)

This year's DTAPR highlights our progress, challenges and forward strategies. The report is presented in two parts: a summary of key initiatives and outcomes, and a detailed technical document outlining our assessments and obligations as a Distribution and Transmission Network Service Provider.

**Looking ahead, we remain focused on meeting our customer needs by:**

- Supporting additional renewables and storage connections,
- Enhancing network resilience and flexibility,
- Expanding digital innovation, and
- Balancing affordability with the investments needed for a clean energy future.

Electrification remains central to our vision — the pathway to a resilient, affordable, and sustainable future. Ausgrid is proud to be enabling that future, together with our customers and communities.

This report provides an overview of our plans and strategies for the forward planning period. If you have enquiries, please reach out to us at assetinvestment@ausgrid.com.au.

Junayd Hollis
Group Executive - Network and Digital

# About Ausgrid

Ausgrid is operated under a long-term lease via a partnership between the NSW Government and AustralianSuper, APG Asset Management and IFM Investors where 49.6% of interest and share are held by the NSW Government.

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. Ausgrid's network is a shared asset that empowers our customers and their communities and has done so for over a century.

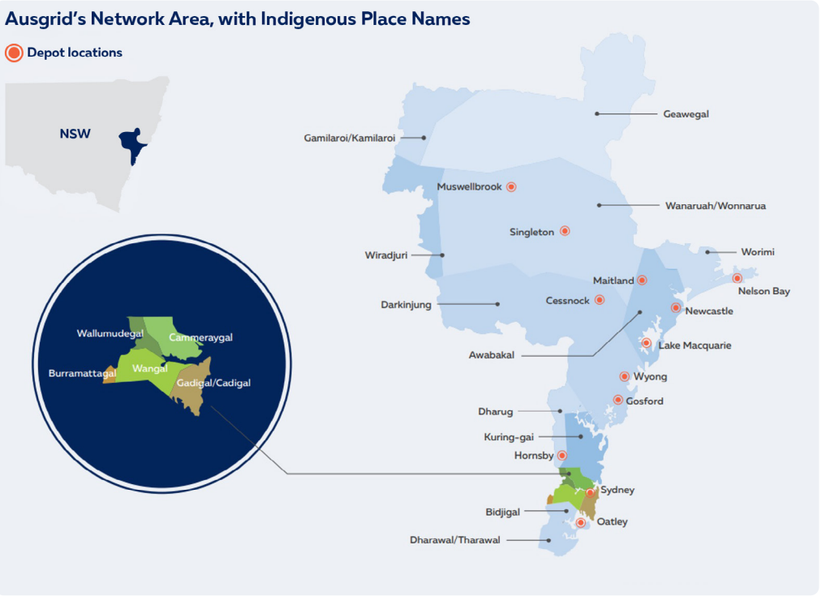
Our core business is to provide distribution network services to our customers. Each day we build, operate and maintain the distribution network with a focus on providing a safe, reliable, affordable and sustainable energy supply. The wide range of services we provide is illustrated on the next page.

We're investing now for a future where renewables play a dominant role in the power mix and households and businesses can generate their own energy and sell it back to the grid. The grid has a pivotal role in supporting customers during this energy transformation. We are committed to working with our customers and stakeholders to realise this lower carbon future sooner and at the lowest possible cost for all customers.

## Our Network and Customers

We provide an essential service to over four million customers including urban residents and businesses in Sydney, Australia's largest city, and those in rural areas across the Central Coast and Hunter Valley. Our customers also include local councils, telecommunication providers and developers. We service critical infrastructure within our network footprint, including schools and hospitals.

**Ausgrid's Network Area, with Indigenous Place Names**




**Our Network and Customers**

- **4m** Australians
- **20%** of Australia's GDP
- **1.5m** Homes
- **200k** Businesses
- **1,238** Schools
- **105** Hospitals
- **1.8m** Customers
- **22,275km²** Area

Ausgrid network covers 22,275 km² made up of large and small substations connected through high and low voltage powerlines, underground cables, tunnels and power poles, including

**Dual function subtransmission system**

132kV transmission assets operated in parallel to and in support of the main transmission system

**Subtransmission system**

33kV, 66kV and 132kV assets

**High voltage (HV) distribution system**

Predominantly 11kV, with some 5kV, 22kV and 33kV and 12.7kV Single Earth Wire Return assets

**Low voltage (LV) distribution system**

400V assets (230V single phase)

## Operating Environment

Ausgrid is regulated by a range of statutory and legislative requirements, including Work Health and Safety (**WH&S**), environmental, competition, industrial, consumer protection and information laws, National Electricity Law (**NEL**), National Electricity Rules (**NER**) and the NSW Electricity Supply Act 1995 (ESA). We must also comply with the conditions of our NSW DNSP licence (under the ESA), Security of Critical Infrastructure Act 2018 and Electricity Infrastructure Investment Act 2020 (**NSW**).

The NEL and NER regulate the National Electricity Market (**NEM**), and the National Energy Customer Framework. Ausgrid operates in the NEM as both a DNSP and TNSP. The National Electricity Objective (**NEO**), was amended in late 2023 to include an emissions reduction component, and as stated in the NEL is to:

> "promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:
>
> (a) price, quality, safety, reliability and security of supply of electricity; and
>
> (b) the reliability, safety and security of the national electricity system; and
>
> (c) the achievement of targets set by a participating jurisdiction –
>
> (i) for reducing Australia's greenhouse gas emissions; or
>
> (ii) that are likely to contribute to reducing Australia's greenhouse gas emissions."

We meet these obligations with investments that address our customers' requirements for safe, affordable, reliable and sustainable network services.

We manage compliance with these laws and regulations through our internal codes and policies and a common control framework. This control framework comprises plans, policies, procedures, delegations, instruction and training, audit and risk management.

**Our Purpose**

Making electricity accessible for all.

**Our Vision**

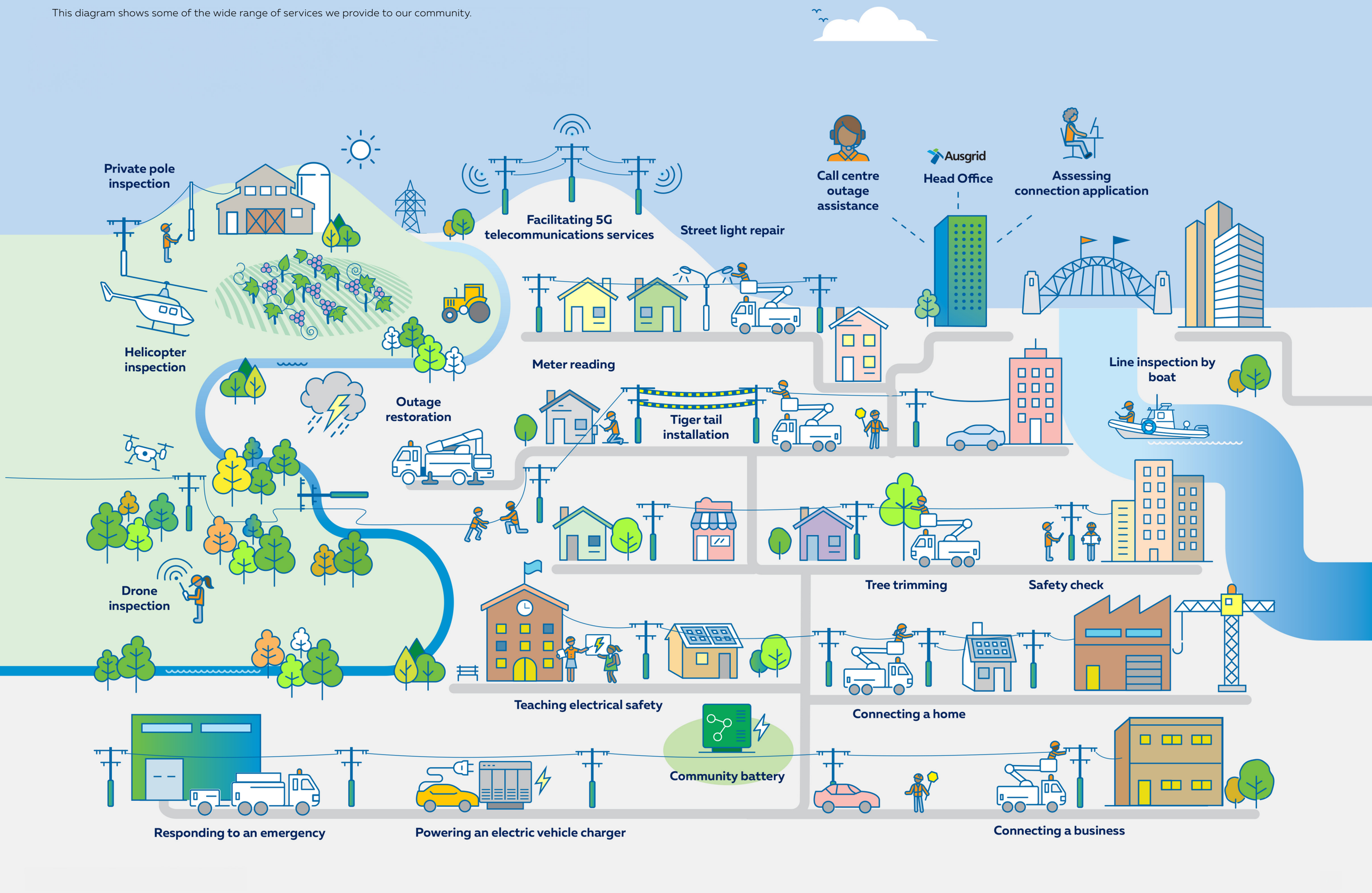
For our communities to have the power in a resilient, affordable and sustainable future.

**Our Values**

- Work safe, live safe
- Customer-focused
- Commercially minded
- Collaborative
- Honest and accountable
- Respect

# Our Role in the Community

This diagram shows some of the wide range of services we provide to our community.



# Purpose of the Distribution and Transmission Annual Planning Report

This DTAPR complies with National Electricity Rules (**NER**) clause 5.13.2 DAPR and clause 5.12.2 TAPR, utilising Version 232 of the NER. Ausgrid has prepared this DTAPR with a five-year forward planning horizon, reflecting the outcomes of the annual planning review of Ausgrid's electricity network since the December 2024 DTAPR publication.

The purpose of this document is to inform Registered Participants, stakeholder groups and interested parties of the identified future network needs, the committed and proposed solutions to these needs and the potential opportunities for non-network solutions, particularly for large investments where the Regulatory Investment Test for Distribution (**RIT-D**) applies.

Ausgrid's DTAPR aligns with the NER Schedule S5.8 DAPR to:

- Provide transparency to Ausgrid's decision making processes and assist non-network providers, other Network Service Providers and connection applicants to make efficient investment decisions;
- Promote efficient investment decisions in the electricity market;
- Include information on the planning process encompassing forecasting, identification of network limitations, and the development of potential credible options to address these limitations;
- Present the results of Ausgrid's annual planning review, including joint planning with other Network Service Providers, covering a minimum five year forward planning period for distribution assets;
- Offer third parties the opportunity to offer alternative proposals to the identified network needs, including non-network solutions such as demand management or embedded generation;
- Provide network capacity, load forecasts and hosting capacity for embedded generation for sub-transmission lines, zone substations and transmission-distribution connection points, and any 11kV primary distribution feeders which are constrained or are forecast to be constrained within the next two years; and
- Provide information on Ausgrid's demand management activities and actions taken to promote non-network initiatives each year, including plans for demand management and embedded generation over the forward planning period.

## Distribution and Transmission Annual Planning Review and Reporting

Ausgrid owns, develops, operates and maintains transmission dual function assets in NSW that are operated in parallel with Transgrid's network, and perform a transmission function by supporting the main NSW transmission network. Ausgrid is therefore also registered as a TNSP and is required to publish a TAPR covering our dual function assets. The NER permit Ausgrid to publish its TAPR as part of the DAPR to align the publication of both reports each year.

Reporting of both planning reviews have been merged into one document.

### Disclaimer

Ausgrid, registered as both a Distribution and Transmission Network Service Provider, provides this DTAPR 2025 under NER (clause 5.13.2 and 5.12.2) for the sole purpose of informing Registered Participants and Interested Parties about the annual planning review results for distribution and transmission networks.

This document may not contain all necessary information for prospective investors or participants. Ausgrid does not consider individual investment objectives, financial situations, or specific needs. Therefore, readers and users should independently verify the information for accuracy, completeness, reliability, and suitability.

Ausgrid makes no guarantees regarding the accuracy, reliability, completeness, or suitability of the information in this document. Readers and users acknowledge that Ausgrid, its employees, agents, and consultants assume no liability, except as required by applicable statutes.

# Network Growth and Opportunities

## Enabling Connections: Increasing Opportunities to Connect

### Load Growth

The demand for load is changing as customers look to electrify. A key contributor to this change is the adoption of electric vehicles, replacing traditional fossil fuels with increased demand for electricity. The adoption of EVs and the roll-out of EV charging infrastructure must be met with available network capacity.

Additionally, the data centre market is experiencing significant growth, driven by the rise of hyperscale cloud services and the rapid development of artificial intelligence technologies. Ausgrid, is uniquely positioned to support this growth and is working closely with data centre developers to understand their emerging needs.

Ausgrid currently supports 52 dedicated data centres across its network area. These facilities range in scale from 5MVA to nearly 200MVA, providing essential infrastructure to meet the rising demand for data storage and processing capabilities. As the digital economy grows, the need for reliable and scalable data centre facilities has become increasingly critical.

In 2025, Ausgrid has seen a surge in interest from new data centre operators. With over 70 enquiries and applications, the prospective capacity from these developments totals more than 10 GW. However, not all of these applications will be realised as multiple enquiries are bidding for the same end customer loads. Ausgrid forecasts to have over 2GW of data centre load on our network by 2040, reflecting the strong demand for data centre infrastructure, driven by the expansion of digital services and the growing importance of cloud computing. With this growth will come the need to augment and upgrade our network at a rapid pace, challenging existing timelines.

As these emerging loads increase, the reliance on Ausgrid's 132kV network continues to grow and is critical to ensuring customers are served in the locations and volumes required. The 132kV network provides the backbone for supplying major loads including ports, industrial precincts, high-density residential areas and the expanding data centre sector. To enable the forecast growth, particularly in areas where large loads are anticipated, strengthening and reinforcing the 132kV network will be essential. Strategic investment in this network tier will support timely connections, maintain reliability and ensure the system remains resilient.

Ausgrid is meeting this rapid market growth through a range of strategic initiatives aimed at ensuring an efficient integration of new customer capacity:

**The Connections Excellence Program:** This program is designed to deliver a faster, more efficient, and better value connections experience for data centre customers

**Proactive Customer Engagement:** Engaging directly with customers and industry stakeholders allows Ausgrid to understand market needs and tailor its services to build strong relationships and facilitate smoother project development

**Strategic Network Planning:** Ausgrid employs strategic, innovative, and holistic network planning practices to enhance the integration of new data centres into the current network, ensuring that the network remains robust and adaptable to future demands

**Promoting Areas with Available Capacity:** To support sustainable growth, Ausgrid promotes investment in areas where distribution network capacity is readily available, or where there is potential for grid scale renewable energy developments

**Investment in Infrastructure:** To accommodate the increased load and ensure reliability, Ausgrid is investing in new distribution network assets and major substation developments

**Efficient Pricing Framewroks:** Implementing pricing approaches that limit cross subsidies and encourage efficient network utilisation from connecting parties.

### Hosting Capacity

The electricity industry is undergoing a significant transformation as renewable energy resources become more prominent. Solar generation, energy storage, and other distribution energy resource technologies are integrating into Ausgrid's network at a rapid pace, while new customer loads such as electric vehicles and data centres are driving significant growth in electricity demand.

One critical aspect for the energy transition is whether the network can accommodate new loads and generation without requiring major infrastructure investment, collectively referred to here as 'hosting capacity'.

To understand this capability, Ausgrid conducts detailed hosting capacity analysis to determine the additional load and generation that can be connected without compromising reliability, efficiency, or safety. These studies identify where capacity is available, where constraints may arise, and where targeted investment or non-network solutions can unlock further capability.

Hosting capacity insights support new connections, inform planning decisions, and guide future network development. Ausgrid publishes this information to provide transparency and enable customers, developers, and stakeholders to make informed decisions aligned with the network's capabilities. Customers are encouraged to engage early to discuss potential future capacity and connection opportunities.

#### Network Transistion

- Rapid growth in renewables, EVs, storage and data centres driving demand
- Focus on connecting new loads and generation efficiently

#### Key Benefits

- Transparency
- Eefficiency
- Flexibility
- Planning insight


#### Our Approach

- Hosting capacity analysis identifies available network capability
- Feeder and sustation studies reveal where capacity exists and constraints may emerge

#### Dynamic and Evolving

- Updated annually to reflect network growth and new connections

The hosting capacity information is a snapshot in time reflecting the network status at present based on the maximum load on the network. Ausgrid has recently began offering dynamic connections for customers that are flexible with their network usage and therefore could take advantage low load periods.

If you believe your needs are suitable for a dynamic connection, we encourage you to reach out to us at ausgrid.com.au. 'Getting Connected', as a good place to start for further information on how to get connected to the network.

For Application Form FAQs and supporting resources visit Connection application support or contact the Contestable Connections Team

**Email:** connections.technical.enquiries@ausgrid.com.au

**Phone:** 02 4399 8099

### Hosting Capacity Data and Analysis

key levels to provide a detailed view of network performance and connection potential:

- **Feeder-level analysis:** Power flow and contingency simulations at the sub-transmission feeder level determine the additional capacity each feeder can support.
- **Substation-level analysis:** Assessments at primary and secondary voltage levels identify available capacity at substations where major load or generation connections are expected.
- **11kV-level analysis (new for 2026):** Hosting capacity at the 11kV distribution network level is being incorporated into Ausgrid's mapping portal. This provides customers and developers with improved visibility of available capacity at a more granular level, supporting efficient and better-informed connection planning.

Hosting capacity data is published on Ausgrid's website, improving transparency and supporting efficient connection processes by helping stakeholders identify suitable connection points and streamline applications.

### Optimising the Network for Growth and Sustainability

Hosting capacity analysis enables Ausgrid to plan for growth while enhancing network resilience and sustainability by:

- **Optimising existing infrastructure:** Maximising the use of current assets to defer costly upgrades.
- **Supporting dynamic and flexible connections:** Allowing connections where capacity may vary over time or under specific conditions.
- **Develop long-term planning:** Forecasting future hosting capacity to inform investment decisions.
- **Deliver strategic investment:** Identifying emerging constraints early to prioritise actions that unlock additional capacity.
- **Enhancing transparency:** Providing greater network visibility through the inclusion of 11kV hosting capacity data in Ausgrid's mapping portal (future).

### Dynamic Nature

Hosting capacity is dynamic and changes with new connection applications, load growth, and network developments. Assessments are based on the best available data and models as of October each year and should be viewed as indicative snapshots. Ongoing hosting capacity analysis ensures Ausgrid can continue to integrate new loads and generation efficiently, supporting a more flexible, sustainable, and future-ready electricity network.

**Through ongoing innovation in hosting capacity analysis, Ausgrid is building a more flexible, transparent, and future-ready network to meet the evolving needs of customers and communities.**

## Electric Vehicles Uptake

### Electric Vehicle Forecasts in Ausgrid's Network Area

EVs within Ausgrid network are projected to increase from 63,000 vehicles in 2025 to nearly 400,000 vehicles by 2030 (based on AEMO's Step Change scenario). All scenarios assume cost parity (i.e., the full cost of owning and operating a vehicle, without subsidies) between EVs and Internal Combustion Engine Vehicles should happen before 2030.

### Increasing EV Charging Infrastructure Uptake in Ausgrid's Network

Ausgrid is leading the industry by providing 'facilities access' agreements to enable charge point operators to lease out space on our assets to deploy their chargers on our kiosks and poles.

With support from the NSW Government, Ausgrid will be connecting 100s more EV chargers in our network. However, this will fall far short of the NSW Government's projected need for 26,000 to 30,000 public AC charging points in NSW.

This is why Ausgrid has been advocating to be able to build, own and maintain (but not sell energy through) 11,000 pole mounted AC chargers on our network. We want to support approximately 30% of NSW residents who do not have access to powered off-street parking.

Ausgrid proposes to maintain these chargers to the same high reliability standards as the rest of our network assets, while providing all charging providers open access to these chargers via a standard electricity tariff. This will expand existing charging providers' networks. This way customers will be able to access AC kerbside charging for similar costs to those able to charge at home.

### Enabling Vehicle-to-grid Charging

Ausgrid is exploring ways to accelerate vehicle-to-grid (**V2G**) charging with use of its Artarmon test facility, and options for public V2G.

V2G technology enables grid-interactive, bi-directional chargers to utilise EV batteries as distributed energy resources, supplying electricity to homes and supporting the grid during peak demand. The initiative will enable customers to use their EV batteries to power their homes and earn income, regardless of whether they have rooftop solar.

Looking ahead, in FY26 Ausgrid will continue to look for new ways to empower customers to participate in the energy transition.

## Dynamic Connections

The Dynamic Connection Agreement is a new way for large customers to connect to our high voltage network, faster and at lower cost.

Instead of locking in a traditional fixed capacity connection that may require costly network upgrades, a Dynamic Connection Agreement provides:

- A fixed capacity you can always rely on; and
- A variable capacity that is in addition to the fixed capacity and adjusts in real time based on network conditions

This flexibility enables more efficient use of the existing network and helps avoid expensive and time-consuming network augmentation.

A Dynamic Connection Agreement is ideal for large sites that can receive and respond to real-time signals from Ausgrid by adjusting their energy use in real time. These agreements are best suited for customers connected with real-time energy monitoring capability such as customers with batteries, EV chargers, or flexible loads or generation.


**If you are interested in a Dynamic Connection Agreement, please submit a preliminary enquiry on our website and we'll let you know if the site is suitable and a full application can be submitted via our website.**

# Leveraging Impact of Renewables and Storage

## Renewable Generation

In December 2024, EnergyCo announced that they will be working with Ausgrid to deliver the proposed network solution for the HCC REZ. This involves upgrading the existing electricity network to allow new renewable generation to connect to the grid. These enhancements are vital to meeting both our current and future energy needs.

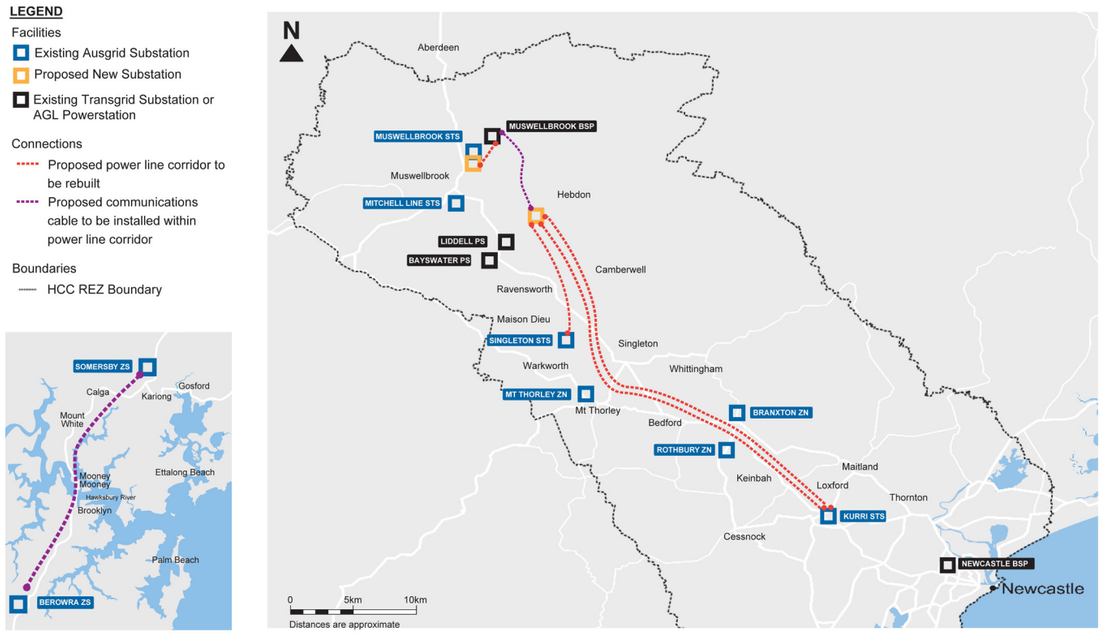
The proposed solution will primarily involve upgrades to existing network infrastructure, and re-use of existing corridors. This minimises impacts on surrounding communities and the environment, while delivering the capacity to transfer at least 1 gigawatt of renewable energy.

This will bring significant economic benefits to the region including more jobs, opportunities for local businesses and potential new industries.

The map below shows the areas where Ausgrid's proposed upgrades will occur, with a proposed completion date of mid-2028.

Ausgrid is committed to working alongside EnergyCo and engaging with local councils, landowners, communities, and businesses to ensure the project delivers benefits for all stakeholders.

Proposals for three additional expansion options have also been submitted to EnergyCo to participate in the 2025 IIOR (Infrastructure Investment Objectives Report) report. These expansion options have also been included in AEMO's 2025 electricity network options report (**ENOR**).




Ausgrid is continuing work with the NSW government, to identify further opportunities to support large renewable generation in our network. This ongoing work is vital to securing the long-term interest of our customers by providing sustainable and secure sources of generation.

### Key Dates

**Early 2025 -mid 2025**
Refine design. Ongoing site investigations.

**Mid 2025**
Review of Environmental Factors (REF) on public display.

**Mid-late 2025**
Detailed design and early works.

**Early 2026**
Start of sub-transmission line and substation construction works.

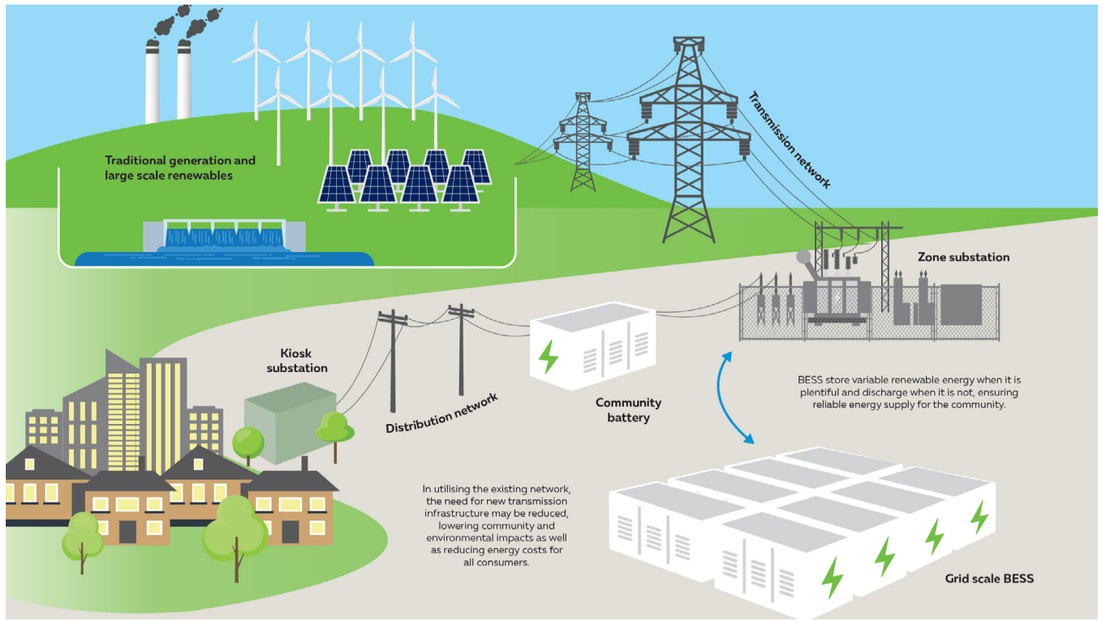
**Mid 2028**
Commission and move into operation and maintenance phase.

## Battery Energy Storage Systems

Ausgrid Group is building a resilient and sustainable energy system by expanding energy storage on the distribution network, increasing the integration of renewable energy and ultimately paving the way for a more sustainable future.

Ausgrid's ambition is to facilitate the connection of energy storage on the distribution network to improve network resilience. This approach ensures the best outcomes for our customers, the network and our shareholders, and helps deliver a faster, more affordable, and less disruptive transition.

As one of the first DNSPs to connect grid-scale storage to the distribution network, Ausgrid is leading the way in fostering a resilient and equitable energy transition. This initiative challenges the status quo and supports the ongoing integration and adoption of renewable energy, contributing to a sustainable energy future for all.




## Community Batteries

Ausgrid is continuing to deliver its community battery program, with 22 community batteries now operational in the network.

In August, Ausgrid launched its largest ever community battery at Cooranbong. The battery was co-funded by the Australian Renewable Energy Agency (**ARENA**) as part of a $12.6M grant awarded to Ausgrid in 2024. It is the first of several 5MW batteries being launched as part the Federal Government's Community Batteries for Household Solar program.

### Key Updates for 2025

- A total of 22 community batteries is now operational, totalling approximately 7MW / 14MWh. This includes our 5MW battery, 10 smaller ground mount batteries, and 11 pole mounted batteries.
- One 5MW community battery is now operational under Ausgrid's ARENA funded Community Battery Program
- Energy-Storage-as-a-Service offering is continuing to grow, with many Ausgrid customers now saving ~$200 in their yearly electricity bills.


Sized at 5MW, this battery will enable benefits for the thousands of residents in the Central Coast and Lake Macquarie regions, including:

- Providing residents with savings of ~$200 per year through Ausgrid's Energy Storage as a Service offering;
- Facilitating effective management of the local network;
- Allowing more rooftop solar and devices such as EV chargers to be connected; and
- Reducing reliance on traditional poles and wires investment and helping to lower network costs

Our community batteries enable Energy Storage as a Service, which is designed to provide ongoing bill savings to residents near a community battery. This includes customers with or without solar, renters, and those that live in apartments. ESaaS is currently offered to customers through leading retailers Origin Energy and Energy Australia.

Ausgrid will soon be launching more 5MW batteries at Peats Ridge and Bankstown, with additional batteries expected in 2026.

## SAPS and Microgrids

Ausgrid is investing in SAPS and microgrids to reduce outage impacts for certain customers in remote locations, as well as reducing risk of fires in bushfire prone areas. SAPS are off grid electricity systems, generally comprised of solar photovoltaic arrays, energy storage and backup diesel generators.

SAPS and microgrids reduce bushfire risk as electricity infrastructure, that could potentially spark igniting a bushfire, is either no longer energised or removed. It is expected that the average cost to supply customers will fall if DNSPs provide SAPS on a permanent basis, leading to a reduction in network charges for the entire customer base. They can also be used by electricity networks as practical solutions to make communities more resilient to extreme weather events and natural disasters as they enable a customer or community to isolate and remain energised in an emergency. This is particularly important for keeping telecommunication towers and fire-fighting equipment (water pumps) operational.

As distribution network's experience more natural disasters such as bushfires, storm events and floods, SAPS can also be utilised in an emergency to replace assets, allowing utilities to effectively provide the updated power solutions for our customers rather than replacing assets like for like.

- SAPS range in sizes but typically comprise a 13kW PV system, paired with a 7.5kW BESS & 9kVA backup generator connected to a single customer point of connection.
- 10 x SAPS have been commissioned to date in the suburbs of Ellerston and Mirannie located in the Upper Hunter region of Ausgrid.
- A microgrid may be completely disconnected from the electricity network or it can be connected to the main electricity network with the ability to deenergise the main line for network maintenance or an impending extreme weather event.
- Ausgrid announced the construction of a LV Microgrid in Merriwa in late 2022. Ausgrid's depot in Merriwa was the ideal spot to locate the microgrid given its location on the main street and connected to the same low voltage network as many key small businesses.
- The Merriwa microgrid will supply 28 customers incl. the petrol station, supermarket, chemist, bakery, CWA hall, IGA supermarket and RSL amongst other small businesses that will be able to continue to service the township during planned and unplanned outages on the local electricity grid.
- Ausgrid has recently completed major construction activities with the installation of a new 500kVA diesel generator, 500kW/1000kWhr BESS and 110kW solar installation along with microgrid control system.
- Final Testing & Commissioning of the Microgrid was completed in June 2025.
- The Microgrid Community Launch was hosted by Ausgrid CEO Marc England in November 2025.
- Further information on the project is available: https://www.ausgrid.com.au/About-Us/Future-Grid/Merriwa-Microgrid

## Community Power Network

### What is it?

An accelerated program of rooftop solar and strategically placed community storage, managed by Ausgrid (involving both Ausgrid and commercially owned assets) for community benefit.

### Objective

To provide the lowest cost of electricity for all customers by pooling surplus solar, storing it locally, and redistributing it in the evening peak—ensuring benefits extend beyond those with their own solar or storage assets.

### Pilot Locations

- Mascot-Botany (Sydney) - 65MWh of additional storage and 50MW of addition solar
- Charmhaven (Central Coast) ) - 65MWh of additional storage and 20MW of addition solar

### Benefits at a glance

- Reduce electricity prices and higher feed-in tariffs
- Support a faster transition to renewables
- Provide equitable acess to benefits for all

### Estimated Financial Benefit

~$22.9M in benefits over five years for 32,000 customers, equating to ~$150–200 annual savings per household, plus higher yields from solar systems for locals

### Value Streams

- Leveragege cheap solar - maximise use of rooftop generation (lowest-cost energy)
- Reduce network charges - by lessening upstram asset needs
- Lower asst costs - through collective procurement and scale efficiencies
- Shift orchestration value - share benefits between wholesale makets and customers


## CER Uptake

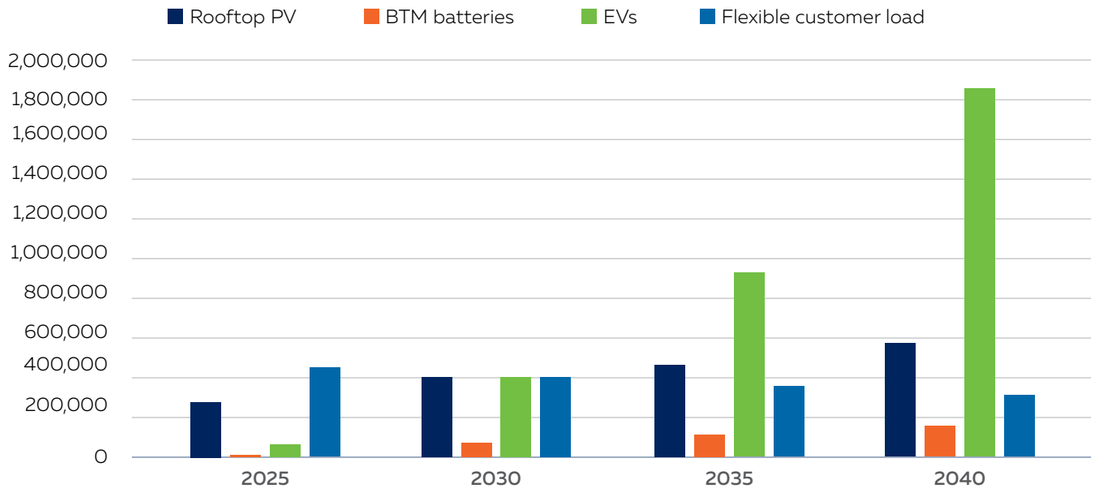
Ausgrid is adapting to a rapidly changing energy landscape including an acceleration of CER, which include behind-the-meter (BTM) renewable energy generation, storage, and EVs. The uptake of rooftop solar on our network has consistently exceeded forecasts, with this trend expected to continue.

BTM storage is typically paired with rooftop solar, where rooftop solar is forecast to grow from 278,000 systems in 2025 to 377,000 in 2029 and BTM storage is forecast to grow from 23,000 systems to 78,000 in over the same timeframe. EV adoption on our network is also accelerating, with numbers expected to rise from 63,000 in 2025 to 298,000 by 2029.

### Updated Forecasts

Ausgrid has updated its forecasts since the 2024 DTAPR for rooftop solar and BTM storage based on the latest inputs and assumptions from the AEMO[1]. Additionally, for BTM storage, the forecasts include an adjustment for the significant increase in battery uptake following the inception of the federal government's Cheaper Home Batteries Program.

The forecast for EVs has been revised downwards since the 2024 DTAPR, reflecting EV forecast changes from AEMO that include latest data on adoption trends especially in hybrids outpacing EV sales, new vehicle emissions policies and correction of previously over-estimated fleet EV forecasts.




### What this means for Ausgrid and our Customers

Under certain conditions, high levels of CER can push the network beyond its design limits, leading to supply interruptions and curtailment. Successful integration of CER into the network is essential for maximising the value of customers' investments in CER and distributing these benefits across all connected customers.

Due to increasing two-way power flows, Ausgrid must support the integration of CER through efficient investment. Rooftop solar exports can cause network voltages to rise, leading to curtailment where inverters limit their output or trip off. This affects both in-home consumption and exports, with 11% of rooftop solar customers expected to experience some level of curtailment by 2029[2].

EVs can increase maximum demand, particularly during times of peak household energy usage, which can drive the need for network upgrades to manage capacity constraints and avoid equipment failures. Smart charging and other initiatives such as price signals to promote EV charging outside of network peak demand times will become increasingly important to mitigate peak demand growth due to EVs.

### Managing Network Challenges and Maximising CER Integration

Ausgrid's approach to CER integration includes a range of initiatives to effectively integrate CER, manage the risks and opportunities of the accelerated adoption of CER. Our business strategy prioritises incentives to reduce the need for network augmentation and offers a wide range of network solutions to manage voltage non-compliance and capacity constraints due to increasing CER.

1. AEMO, 2023 - 24 inputs, assumptions and scenarios report, 2023, https://aemo.com.au/en/energy-systems/major-publications/integrated-system-plan-isp/2024-integrated-system-plan-isp/current-inputs-assumptions-and-scenarios
2. Ausgrid, 2023, Att. 5.7: CER Integration Program, https://www.aer.gov.au/system/files/Ausgrid%20-%20Att%205.7%20-%20CER%20integration%20program%20-%2031%20Jan%202023%20-%20Public.pdf

Key initiatives include:

**Innovative Pricing Options**
Simplify tariffs and offer cost-reflective pricing to manage peak demand and reduce costs

**Coordination and Collaboration**
Enhance planning data transparency and improve network visibility through increased measurement and data sources

**Improved Network Visibility and Voltage Management**
Invest in dynamic voltage management tools and processes to maintain network stability.

**Transition from Load Control to Flexibility**
Develop incentives for flexible load and generation, adapting to smart meter adoption

**Investment in Grid Enhancement**
Address voltage and thermal constraints to support increasing rooftop solar and EV adoption.

The AER assessed Ausgrid's 2024-29 period regulatory proposal and determined that the requested funding for dealing with EV constraints was not required. Despite this, Ausgrid will continue to assess the needs of our customers and seek efficient methods to maintain reliable power supply, including monitoring and adjustment of our plans as CER uptake and usage patterns evolve.

To address grid destabilisation on the grid, caused by voltage issues, reverse flows, minimum system load, the NSW Government has implemented a broader NSW Consumer Energy Strategy. One of the tools adopted under this strategy is the Emergency Backstop Mechanism (**EBM**). In rare emergency conditions, the EBM gives the market operator (Australian Energy Market Operator, AEMO) the ability to direct distribution networks to temporarily curtail (reduce), or even pause, rooftop solar exports (or generation) from connected systems. It is a last resort measure and used only when other mechanisms have failed to keep the grid stable.

Ausgrid will be able to act under EBM when directed by AEMO. When in effect, EBM allows Ausgrid to curtail or pause export/generation from impacted rooftop solar installations while the grid event persists, with supply from the grid to customers remaining unaffected.

EBM will apply to new or upgraded rooftop-solar / CER systems (up to 200 kW) installed from the implementation date (Spring 2025). Existing solar systems (that are neither upgraded nor replaced) are not subject to EBM requirements.

In regard to the new electricity plan by the Australian Government to give household a block of daily "free power", known as the Solar Sharer Offer (**SSO**), Ausgrid shares the Government's objectives to drive the uptake of CER and enable all consumers having access to the benefits of the energy transition. There are however some unintended risks this policy may have on the network and some customer cohorts. These impacts may include:

- Unrecovered costs of transporting electricity during the solar soak period; and
- Managing network peak demand under a static time window without taking into account dynamic grid conditions or unique characteristics of specific geographic or demographic areas of the network.

Further steps to increase electrification have been implemented. The City of Sydney has decided to apply restrictions on the installation of gas appliances. From 01 January 2026, new homes will need to use electric cooktops and heaters. This has also been implemented in other council areas but not across the entire Ausgrid network.

# Reducing Cost of Living Pressures

## Addressing Affordability Challenges in the Energy Transition

**Affordability continues to be a challenge during the energy transition, largely due to factors beyond our control, such as:**

- Global supply chain pressures and rising unit rate costs for network infrastructure inputs.
- The potential impact of additional investments in transmission and generation costs on energy bills.
- The need to balance achieving net-zero targets with maintaining affordable electricity for all customers.
- The impact on customers that do not have access to rooftop solar, home batteries and EV charging at home.

**To maintain downward pressure on electricity prices, Ausgrid will focus on:**

- Expanding access to EV adoption for more customers, through the availability of EV public charging. Our kerbside charging solution could save residential customers $18 per year by 2030 even with higher demand and greater consumptions on our network.
- Continuing to make the benefits of CER available to other customers, through expanding community batteries and offering energy storage as a service.
- Offering dynamic connections, tariffs and coordinated management of CER, to improve the utilisation of existing infrastructure and reduce the need for network investments.
- Providing greater transparency of available capacity to encourage customers that have the option of where to connect, to locations where capacity is available, reducing the need for greater network investment.

The total revenue approved by the AER in its final decision is expected to result in an average increase of $14 per annum ($ nominal) to the average electricity bill for Ausgrid residential customers over the 2024–29 period. For small business customers, the impact would be an increase on average of $38 per annum ($ nominal).

Ausgrid placing downward pressure on electricity prices while ensuring the transition benefits all customers.

**Amplify Value**

- Investing in new grid capacity where it provides the highest net benefit for customers.
- Dynamically managing our grid to unlock the most value out of what has already been build.

**Powering Progress**

- Improve asset management and resilience strategies.
- Drive technology advancements and operational efficiency.

**Stakeholder Synergy**

- Foster stakeholder engagement so we understand their priorities and focus on high-value, aligned opportunities.

## Dynamic Networks

As part of preparations for the next regulatory reset and the ongoing development of customer pricing options, we are proposing three sub-threshold trial tariffs for FY27:

**Residential Dynamic Network Tariff (Project Edith):**
Provides day ahead, location-aware dynamic import and export prices with guardrails, layered over a low anytime energy charge and a daily network access charge (**NAC**), to mobilise CER in support of local network needs while remaining compatible with wholesale participation.

**Large-LV Flexible-Load Trial (160–750 MWh):**
Extends the existing <160MWh LV flexible-load trial tariff (EA964) structure to larger LV sites, include but not limited to large EV charging facilities capable of load shifting and responding to sharper price signals, to test demand response in the larger-business cohort and improve utilisation of existing capacity.

**HV Dynamic Connection Trial (Firm + Flex Capacity):**
Aligns price signals with SCADA-enabled dynamic connections at HV, with clear differentiation between firm (guaranteed) and flexible (conditional) access: firm kVA priced at full cost and flex kVA discounted to encourage HV dynamic connection uptake and access to spare capacity in the network.

## Participation of Customers in Energy Markets

### Project Edith Overview

Project Edith is an Ausgrid-led trial designed to test Dynamic Network Prices (DNP)—real-time network tariffs that change based on local network conditions. Unlike traditional tariffs, DNP aims to reflect the actual cost of network usage at different times and locations, encouraging Consumer Energy Resources (CER) such as solar and batteries to support local network stability and wholesale market participation. The trial has expanded from an initial 200-customer pilot to a large-scale program involving 1,200 residential customers and four key partners: Reposit Power, Origin Energy, Energy Australia, and Shinehub.

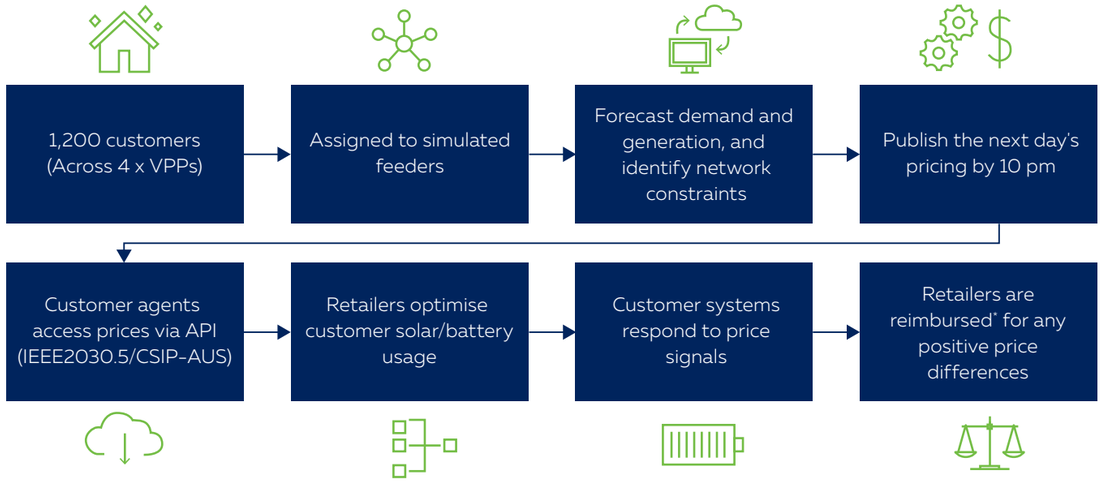
### How it Works

The process, as illustrated in the diagram, starts with customers grouped into Virtual Power Plants (VPP**s**) and allocated to simulated feeders. Ausgrid forecasts demand and generation, identifies network constraints, and releases the next day's dynamic prices by 10 pm. These prices are accessible to customer agents via API standards (IEEE2030.5/CSIP-AUS), allowing retailers to optimise solar and battery usage. Customer systems then respond to these price signals, and retailers are reimbursed for positive price differences. This approach aims to shift demand away from peak periods, flatten the "duck curve" and enhance network efficiency.

### Learnings so Far and Future Focus

Early findings suggest that dynamic pricing can influence CER behaviour, although responses vary due to household habits, optimisation algorithms, and retail options. Challenges include ensuring fairness across different areas, managing high-cost events, and improving data accuracy for pricing systems. Ausgrid aims to refine tariff structures, establish guardrails for extreme price scenarios, and develop new metrics to evaluate network benefits. Ausgrid plans to launch an on-market residential dynamic tariff in FY27, with ongoing efforts to integrate dynamic pricing into national reforms and ensure it can be scaled.

### A Day in the Life of Project Edith




* Current off-market arrangement, on-market bill settlement will use the standard approach.

## Enhancing Network Resilience and Reliability

### Network Resilience

Ausgrid's Climate Resilience Program seeks to build resilience that maintains service levels in the face of the increasing impacts of extreme weather events caused by a changing climate.

Ausgrid's climate change modelling indicates that our risk from climate related events will grow on average by 1 percent each year. Over the last 10 years, 61 percent of all outage minutes were caused by weather related events.

Ausgrid's approach to building resilience includes a spectrum of resilience solutions that range from investments in the network, place-based solutions to educate and prepare vulnerable communities, and improved data sharing between distributors, telcos and councils, to better understand roles and interdependencies, including how we can respond better during outages.

There have been significant storms in identified network resilience areas, which aligns with the current investment strategy. This highlights the importance of the Climate Resilience Program's place-based approach, including prioritised investment in communities most impacted by extreme weather events.

To date, Ausgrid has delivered a range of the FY25-29 planned network and non-network resilience solutions including:

- Establishing the Climate Adaptation and Resilience Expert panel - a forum for Ausgrid, external subject matter experts, and customer advocates, to provide expertise and advice on the delivery of Ausgrid's Resilience Program to support the long-term interests of customers.
- Installing more than 720 fire resistant wraps (pictured) to improve timber pole bushfire resilience in the Hunter region and Central Coast, with the balance of the planned total of 3000 to continue in FY26.
- Appointing a Community Resilience Liaison, deepening engagement with communities that are at a higher risk of outages from extreme weather, to increase awareness and support them to prepare for the impacts of a changing climate with confidence.
- In partnership with the Energy Charter, co-developed and launched the Power Outage Plan, providing online resources to help customers prepare in advance for when an outage occurs.
- Commenced the upgrade of over 120km of bare High Voltage (**HV**) conductors with Covered Conductors to mitigate faults caused by vegetation, and installation of an additional 40 reclosers to prevent outages for customers upstream of a fault.



During FY26-FY29, we will continue this work by:

- Operationalising 3 community resilience hubs, in partnership with local organisations and councils, in readiness to provide reliable back-up power in areas worst impacted by extreme weather.
- Undertaking an updated Ausgrid climate risk assessment using the latest climate science data, and consideration of local geography to model wind impacts at an asset level.
- Working towards lowering the proportion of customers experiencing long interval disruptions in vulnerable LGAs to bring them into line with the rest of the network by 2034.
- Participate in the NSW Reconstruction Authority's Disaster Adaptation Planning, including place based approaches.
- Completing a mid-term program review to assess delivery of our commitments, including an evaluation of our community resilience initiatives against a customer informed baseline.
- Installing small sections of HV undergrounding to mitigate windstorm impacts on poor performing HV power lines.
- Installing 700 Line Fault Indicators across Ausgrid's network, to provide real-time remote data to the teams responsible for restoring power following an outage, helping to speed up restoration times.
- Establishing empirical evidence through a university partnered research project to understand the relationship between urban canopy proximity and customer's energy use during heatwaves.
- Continuing to collaborate with councils, state and federal governments, and other essential service providers to better understand our interdependencies and enable improved data sharing.
- Advocating for continued engagement with the Australian Energy Regulator (**AER**) on development of a longer term Value of Network Resilience (**VNR**) methodology, following Ausgrid's submissions in response to the AER's interim VNR.

The recent final decision by the Australian Energy Market Commission (**AEMC**) to recognise distribution network resilience in the National Electricity Rules provides a formal framework for the proposal and assessment of capital and operating expenditure for resilience. Implementation of the rule change will include the development of resilience expenditure guidelines to be published by the AER by 1 December 2026. Ausgrid will continue to advocate to be engaged in the consultation process for development of the guidelines, leveraging the AEMC's emphasis on vulnerable customer outcomes in its decision, which strongly aligns with Ausgrid's resilience program.

### FLISR

In July 2025, Ausgrid enabled the Fault Location, Isolation, and Service Restoration (FLISR) module within the Advanced Distribution Monitoring System (ADMS). FLISR identifies interruptions on the HV network and then attempts to restore supply through automatic operation of motorised HV switches. Over thirty automatic restorations have been successfully performed in the first few months.

Automatic restoration reduces the number of customers experiencing sustained interruptions and improve our reliability and resilience performance. By minimising the impact, risks, and costs of unplanned outages, FLISR supports Ausgrid's mission to provide accessible, reliable, and sustainable electricity to our communities.

Previously, the restoration of supply was heavily dependent on field operators performing patrols – a process that took time, leaving customers without power and Ausgrid facing financial penalties from the regulator.

***We're working to expand our network of remotely operable devices to extend the reach of FLISR. This will continue to improve public safety and reduce regulatory penalties from prolonged outages, while also giving our Control Room and field teams a head start by enabling faster diagnostics, targeted patrols, and quicker full restorations.***

# Advancement Through Innovation

## Network Digitisation

Ausgrid's Network Digitisation Program is advancing as part of its broader digital transformation strategy to enhance **network reliability, operational efficiency, and customer outcomes**. By enhancing **Digital Twin capabilities, integrating drone technology, broadening LiDAR capture program, and developing AI-driven big data platforms**, the program delivers smarter asset management and a safer, more resilient network—particularly against extreme weather and bushfire risks.

### Key Components of the Program:

#### Digital Twin Development

Provides a detailed mechanical model of the overhead network for design, compliance, and scenario testing (e.g., undergrounding or conductor covering). It supports vegetation and clearance analysis with the ability to simulate environmental factors like temperature and wind, whilst using the Digital Twin data to proactively manage risks.

#### Drone Fleet Operations

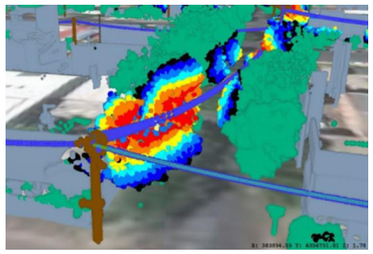
Ausgrid operates a growing fleet of drones that play a critical role in asset inspections, data capture, and operational support. These drones are deployed to prepare for the bushfire season, during storms and other emergency events to assess damage, support rapid restoration, and improve safety outcomes. Their use is particularly valuable in remote and hard-to-access areas, where traditional inspection methods are slower and riskier.

#### Targeted LiDAR Capture

To further enhance coverage and agility of Ausgrid's comprehensive LiDAR capture program, our drone fleet is being expanded to include LiDAR-equipped units, enabling efficient 3D mapping of overhead assets in hard-to-reach locations.

#### AI and Big Data Analytics

Developing advanced AI capabilities to process the vast volumes of imagery data collected from drones and other sources. These AI models are being trained to automatically identify and classify network assets and detect defects. This automation will reduce manual processing time, improve defect detection accuracy, and contribute to a more reliable and resilient network.



## Innovation

Ausgrid's Network Innovation Program is a suite of research, trials and pilots covering leading edge technologies aimed at better meeting the needs and expectations of our customers in the context of the rapidly evolving electricity sector. The purpose of the program is to test advanced and emerging technologies to efficiently demonstrate the potential of these technologies to deliver significant benefits to our customers and the wider energy market if deployed at scale.

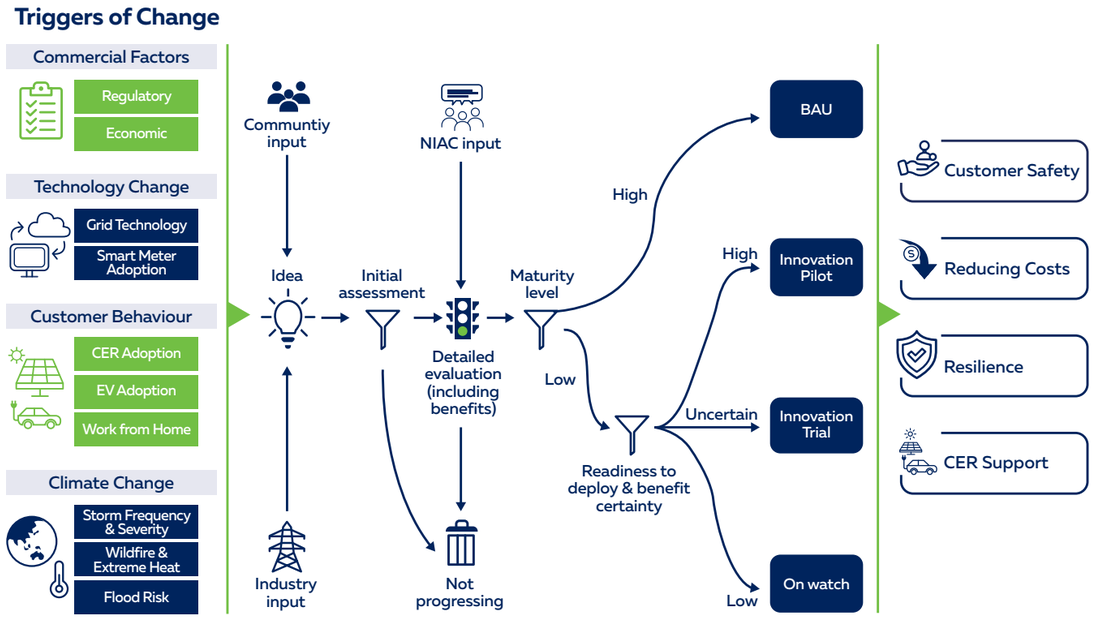
- Projects are grouped into thematic workstreams largely grouped in the following areas e.g. Advanced Voltage Regulation, Network Insights, Fringe of Grid Optimisation, Microgrid Trial, Asset Condition Monitoring, Line Fault Indicators, Dynamic Load Control.

### Key Highlights:

- Advanced Voltage Regulation: Completed, with smart meter data analysis underway to verify setpoints.
- Pole Mounted Batteries (**PMB**): Eight projects practically completed; resolving maintenance and hardware issues.
- LV Regulator (Statcom): Twenty projects practically completed; focus on power quality analysis and procurement strategy.
- Fringe of Grid Optimisation (**SAPS**): Ten standalone power system projects completed, with some maintenance and operational challenges.
- Portable SAPS: Construction commenced, with factory testing scheduled for December 2025.
- LV Microgrid Trial: Operational since November 2025; support and maintenance being finalised.
- Early Fault Detection: Ongoing deployment, with delays due to access restrictions.
- Advanced Analytics from Smart Meter Data: Completed; includes loss of neutral detection.
- Line Fault Indicators (**LFI**): Completed; technical evaluation and handover for scaled deployment.
- Advanced Network Visibility: Broken conductor detection cutover to go-live commenced.
- LV Pole Top Monitoring: Practically completed, with some sites experiencing data outages.

**Ausgrid is launching five new innovation projects in FY26, each designed to address critical challenges and opportunities in the energy network:**

1. Smart Meter Real-Time Verification
2. Broken Wire Detection – Phase 2
3. Distributed Energy Resources (**DER**) – Detection and Updates
4. Smart Meter Network State Estimator
5. Dynamic Voltage Control



# Network Demand and Limitations

## Identified System Limitations

This section is now part of our web-based portal located at https://dtapr.ausgrid.com.au, and should be viewed in conjunction with the rating and demand forecast data files which are available for download from Ausgrid's website at www.ausgrid.com.au/DTAPR, and as outlined in Appendix B of the main DTAPR.

## Dual Function Assets

The list of Ausgrid's dual function assets is reviewed periodically and is used as input for preparing Ausgrid's regulatory reporting, regulatory submission and pricing methodology. For the purpose of the regulatory submission, the list of dual function assets is determined based on the forecast load and system configuration as at the beginning of the regulatory period.

**Changes in dual function asset status** There have been no changes in dual function asset status since the publication of the December 2024 DTAPR.

**Dual function connection points** The NER requires a TNSP to set out planning proposals for dual function connection points.

Ausgrid's joint planning with customers, Transgrid and other NSPs may involve the establishment of new connection points. These augmentations are driven by constraints on the distribution network. However, when the augmentation options are considered in the future, the preferred solution may comprise a mix of dual function and distribution network augmentations.

**Completed new dual function connection points** There have been no new dual function connection points completed in the last year.

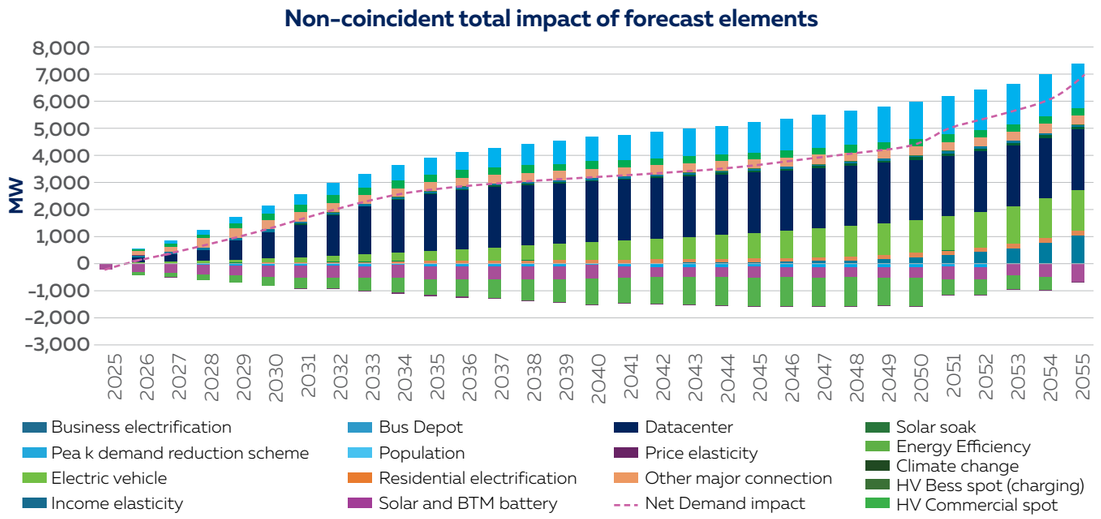
**Proposed augmentation of existing dual function connection points** Ausgrid has identified the need to establish a new 132/33kV subtransmission substation in the Macquarie area due to load growth.

The project to install a third 132/33kV transformer at Macquarie 132/33kV STS due to load growth became committed in 2024.

**Committed new dual function connection point** There are no committed projects for new dual function connection points since the publication of the December 2024 DTAPR.

## Ausgrid System Total Maximum Demand Forecasts

The forecast system total summer maximum demand components are shown below. This chart displays the contribution of each forecast element in each year out of 2055 based on the 50% Probability of Exceedance (PoE) forecast maximum demand Step Change scenario from 2024/25 in megawatts (MW).

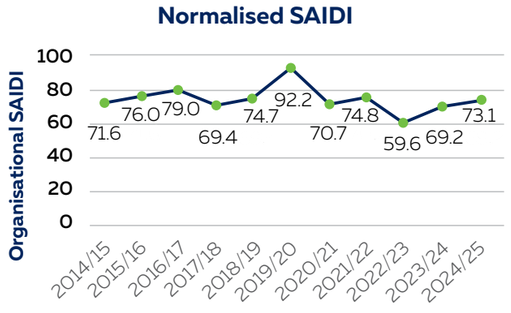


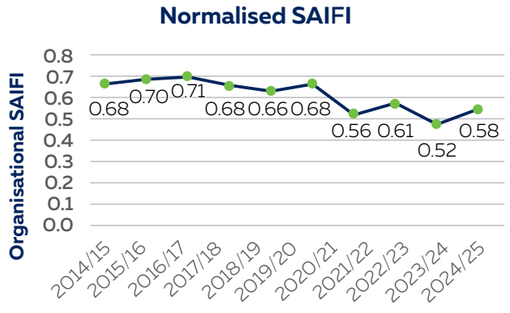

# Network Performance

## Network Supply Reliability Performance in the Preceding Year

Ausgrid's objective is to comply with regulatory requirements at minimum cost, given the condition and utilisation of existing network assets and the funding available to maintain and augment the electricity network.

**System Average Interruption Duration Index (SAIDI) & System Average Interruption Frequency Index (SAIFI) Performance** The following graphs depict the normalised (i.e. Major Event Days data excluded) SAIDI and SAIFI trends over the 10-year period 2014/15 to 2024/25.




### Major Event Days

Ausgrid uses the methodology described in IEEE 1366 standard for defining Major Event Days, as outlined in the Reliability and Performance Licence Conditions and AER Service Target Performance Incentive Scheme (STPIS) Definitions.

There were five Major Event Days for 2024/25 financial year.

**Major Event Days During 2024/25**

| Date | Excluded SAIDI | Cause of Major Event Day |
|---|---|---|
| 15/01/25 | 87.7024 | Storm |
| 16/01/25 | 6.0616 | Storm |
| 17/01/25 | 26.6701 | Storm |
| 18/01/25 | 4.1112 | Storm |
| 28/01/25 | 4.0616 | Storm |

### Quality of Supply

Ausgrid is committed to delivering high-quality electricity supply across all voltage levels while adapting to the rapid growth of CER such as rooftop solar, batteries, and EV charging. The key supply quality objectives are proactive voltage management, power quality monitoring, and strategic network upgrades to maintain compliance with AS/NZS 61000 series, NER obligations, and international best practice.

#### Current Performance

- A statistically designed survey of LV supply points found that ~8% of monitored sites recorded V99 above 253V during the reporting period while a larger share of customers may have experienced occasional periods of higher-than- preferred voltage.
- Harmonics & Flicker: Low non-compliance; most flicker complaints relate to ripple-control signals.
- Voltage Unbalance: Emerging concern.

### Voltage Management

Ausgrid is moving from reactive to proactive voltage management, supported by advanced monitoring and control across supply points:

- Enhanced Monitoring:
- Permanent HV/MV monitoring and expanded LV visibility via smart meters and advanced analytics.
- Integration of upstream voltage behaviour into downstream network models.
- Voltage Regulation Optimisation:
- Joint planning with Transgrid for BSP voltage settings.
- Review and adjustment of STS, zone substation, and distribution substations voltage settings.
- Deployment of STATCOMs, community batteries, and grid-supporting inverters for local voltage smoothing.
- Power Quality Compliance:
- Continuous monitoring of harmonics, flicker, and unbalance.
- Corrective actions based on customer complaints and PQCA audits.

### Outlook and Improvement Initiatives

Ausgrid is actively delivering projects that support its power quality and CER integration strategy:

- Hunter–Central Coast Renewable Energy Zone (**HCC REZ**)
- Community Battery Program supports voltage regulation, reduces solar export curtailment.
- Large-Scale Battery Projects to enhance grid resilience and support renewable integration.
- Project Edith (CER Integration Trial) -Dynamic Operating Envelopes and pricing signals to optimise CER hosting capacity.
- LV Monitoring & Dynamic System Operation - rollout of LV monitoring for 50% of overhead transformers by 2030 to enable real-time visibility and dynamic control.
- Universal Smart Meter Deployment for granular PQ data.
- Regulatory Sandboxing Trials (Ausgrid's Community Power Network) to test innovative CER coordination models.

These initiatives position Ausgrid to:

- Improve steady-state voltage compliance and power quality stability.
- Minimize customer export limitations caused by voltage rise.
- Enable broad CER integration at least cost.
- Maintain compliance with Australian Standards and NER obligations.

# Asset Management

## Asset Management

Ausgrid has in place an effective Asset Management System and practices applied across all levels of the organisation to align and deliver Ausgrid's vision. Ausgrid's Asset Management Objectives consist of:

| | | | | |
|---|---|---|---|---|
| **Enhancing Safety** | **Improving Network Performance** | **Delivering Affordability** | **Increasing Sustainability** | **Making Acommercial Return** |

This approach also ensures we comply with the National Electricity Objective and our regulatory and legal requirements, such as WHS Act 2011 and associated regulations, the Electricity Supply (Safety and Network Management) Regulation 2014 (NSW), the NEL and the ESA 1995 (NSW).

Our asset management system, aligned with AS ISO 55001:2014 adheres to Distribution Licence Conditions.

This structured approach to asset management ensures that we continue to deliver on our vision and meet the goals of our customers, shareholders and employees.

## Risk Management

Ausgrid employs structured risk assessments in accordance with the Risk Management Board Policy, Risk Management Framework and Risk Appetite Statement. Ausgrid's asset management approach utilises risk management techniques to support decision making, within the organisation's risk appetite.

Risk management techniques applied to inform asset decision making consistent with the organisation's legislative responsibilities and AS/NZS ISO 31000-2018 Risk Management – Principles and Guidelines for managing risk. Ausgrid applies numerous techniques for managing risk at various scales, leading to various decision pathways across the life cycle of an asset. The asset management system draws on AS/NZS IEC 31010:2020 Risk management — Risk assessment techniques (IEC 31010) to guide a structured approach to decision making. Risk management techniques such as reliability centred maintenance and cost benefit analysis are used to evaluate risks and determine maintenance and investment requirements respectively.

A brief overview of significant asset class investment strategies is outlined below:

| Subtranmission Cable Strategy | 11kV Switchgear Strategy | Additional Replacement Programs |
|---|---|---|
| • Ausgrid has a large amount of sub-transmission cables with the majority operating at either 33kV or 132kV and a small number at 66kV<br>• There are four cable technology types used including self-contained fluid filled (SCFF), gas pressure, paper lead insulated and cross-linked polyethylene (XLPE)<br>• XLPE cables are the current technology being installed for 33kV, 66kV and 132kV circuits.<br>• SCFF, Gas pressure and paper lead cables undergo an extensive cost-benefit analysis to determine retirement/replacement date, based on age, technology, unavailability, condition, restoration/ repair time, environmental risks and unserved energy. | • Ausgrid installed a large number of compound insulated and air 11kV switchboards with bulk oil circuit breakers (OCB) in place.<br>• To enhance safety, reliability, and prevent secondary asset damage, 11kV oil-filled circuit breakers in zone substations have been replaced with vacuum equivalents where feasible.<br>• Application of cost benefit analysis to the age and condition issues associated with 11kV compound switchboards, confirm that these are approaching end of life.<br>• Currently internal arc classified switchgear is being installed in substations as the industry standard. | • Condition based replacement of poles,<br>• Replacement of higher risk overhead conductor types,<br>• Reconfiguration of low voltage streetlight mains (conversion to regular mains supply), and<br>• Replacement of low voltage underground cable types with conditions/reliability issues. |

## Distribution Network Losses

Distribution network losses refer to the difference in energy obtained from the transmission network to that supplied to customers. Ausgrid's distribution network losses as a percentage of total energy for the 2024/25 financial year was 3.14%[3].

3. The distribution network losses are reported at the end of each calendar year, using the previous financial year's accumulated loss data.



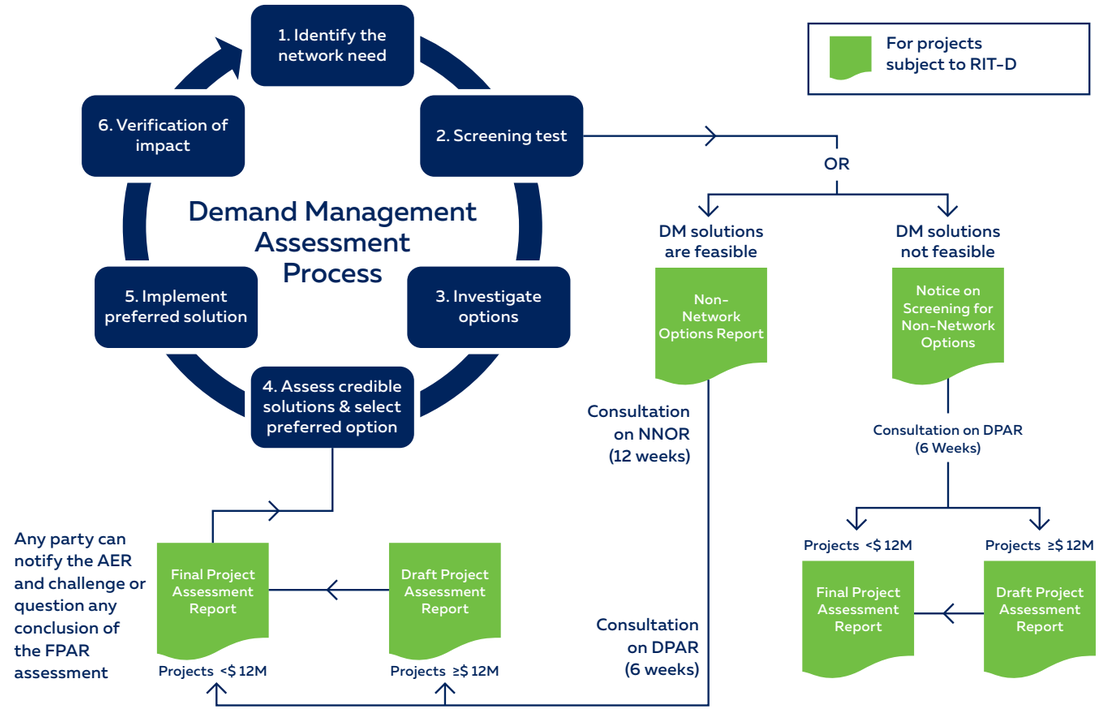
# Non-Network Opportunities

When Ausgrid identifies a network limitation, SAPS and non-network options are considered as an alternative to address the limitation with a network option. The implementation of a non-network option is commonly referred to as demand management.

There are a range of demand management solutions available for use by electricity networks:

- Energy efficiency
- Demand response
- Operating embedded generators
- Energy storage
- Power factor correction
- Load shifting
- Converting the appliance energy source from electricity to an alternative
- Voltage management

Network options, SAPS, non-network options or their combinations are considered to address network limitations. The goal is to identify the solution which offers the highest net benefit and meets required reliability standards. Ausgrid consults with the community on larger projects about network requirements and potential non-network options. For projects where the cost of any credible options is greater than $7 million, the RIT-D process is followed. The demand management process is illustrated in the figure below.



## Demand Management Considerations

There are 16 projects in the forward planning period which met Ausgrid's criteria for demand management consideration. A high-level assessment for non-network solutions has determined that no major projects were identified where it was considered likely that demand management would form part of the least cost solution.

It should be noted that the level of analysis is of a high-level nature. A full assessment will be conducted as part of the RIT-D process, including a request for submissions via the Non-Network Options Report or equivalent, for each of the projects listed in the Network Investments section at the relevant time.

## Demand Management Activities in 2024-25

There were no demand management projects initiated or implemented in this period that were linked to a network investment need.

## Innovation Projects

- Project Edith
- Hot Water Load Control
- Commercial & Industrial Integrated Flex
- Heat Pump Hot Water Systems
- Scenarios for Future Living

## Demand Side Engagement

During 2025 Ausgrid continued to inform and engage interested parties over a range of activities to improve demand management outcomes in meeting network needs.

Our main channel of engagement continued to be through

- Demand management engagement register: https://www.ausgrid.com.au/Industry/Demand-Management/Demand-management-news
- Demand Management team's email: demandmanagement@ausgrid.com.au

Based on the assessments in 2025, there were no major projects confirmed to include a non-network solution as part of the solution mix.

Past RIT-D projects and notifications can be viewed at:

https://www.ausgrid.com.au/Industry/Regulation/Network-planning/Regulatory-investment-test-projects

For more information on how Ausgrid investigates and implements non-network solutions, please refer to our Demand Side Engagement Document at https://www.ausgrid.com.au/Industry/Demand-Management/Our-demand-management-strategy

## Embedded Generation Enquiries and Connection Applications in 2024-25

6 Applications to connect received under NER clause 5.3A.9

36 Connection enquiries received under NER clause 5A.D.2 (micro or non-registered embedded generators)

18 Connection enquiries received under NER clause 5.3A.5

39,559 Applications for a connection service under NER clause 5A.D.3 (micro or non-registered embedded generators)

17 months was the average time taken to complete applications to connect

# Network Investments

This section outlines activities related to the application of the RIT-D to network investments. Cost estimates presented in this section are in real 2026 dollars, unless otherwise stated.

There were no RIT-D assessments completed in the preceding year. There are currently no RIT-D assessments in progress.

**RIT-D assessments to be completed in the forward planning period**

| Region | Constraint | Project Name | Expected Project Completion | Indicative Cost ($m) | Indicative RIT-D initiation |
|---|---|---|---|---|---|
| **Distribution Assets** | | | | | |
| Sydney | Asset Condition | Darlinghurst ZS 33kV Feeders 386 & 389 Replacement | Mar-28 | 8.3 | 2026 |
| Sydney | Asset Condition | Botany ZS 11kV switchgear replacement | Feb-29 | 10.0 | 2026 |
| Sydney | Asset Condition | Willoughby STS 33kV switchgear replacement & new 132kV/33kV transformer | Apr-32 | 70.0 | 2026 |
| Hunter | Asset Condition | Merewether STS 33kV switchgear replacement | Sep-30 | 47.1 | 2026 |
| Sydney | Asset Condition | Blakehurst ZS Decommissioning | Sep-29 | 22.7 | 2026 |
| Sydney | Asset Condition | Pymble ZS 11kV switchgear replacement | Sep-31 | 25.5 | 2026 |
| Sydney | Asset Condition | 132kV feeder 202 Rozelle STS-Drummoyne ZS replacement | Dec-31 | 21.4 | 2027 |
| Sydney | Asset Condition | 132kV feeders 203 & 204 Mason Pk STSS-Drummoyne ZS replacement | Dec-31 | 55.6 | 2027 |
| Sydney | Asset Condition | Drummoyne ZS 132kV switchgear replacement | Dec-31 | 26.2 | 2027 |
| Sydney | Asset Condition | Lidcombe ZS 11kV switchgear replacement (Group 1) | Dec-31 | 18.9 | 2028 |
| Sydney | Asset Condition | Leightonfield ZS 11kV switchgear replacement | Dec-31 | 11.8 | 2028 |
| Sydney | Asset Condition | Paddington ZS 33kV feeders replacement | Mar-31 | 11.1 | 2029 |
| Sydney | Asset Condition | 132kV Feeder 283/2 Milperra ZS – Revesby ZS | Sep-32 | 15.9 | 2030 |
| **Dual Function Assets** | | | | | |
| Sydney | Asset Condition | 132kV Feeders 91A & 91B Beaconsfield BSP to St Peters ZS | Sep-32 | 22.3 | 2029 |
| Sydney | Asset Condition | 132kV Feeder 9FF Beaconsfield BSP-Bunnerong STSS oil section replacement | Dec-32 | 23.6 | 2029 |
| Sydney | Load Growth | New 132kV Mascot STSS | Dec-32 | 55.9 | 2029 |

**Indicative RIT-D assessments to be completed beyond the planning period**

| Region | Constraint | Project Name | Expected Project Completion | Indicative Cost ($m) | Indicative RIT-D initiation |
|---|---|---|---|---|---|
| Distribution Assets | | | | | |
| Hunter | Asset Condition | Cardiff ZS 11kV switchgear replacement | Dec-33 | 13.2 | 2031 |
| Sydney | Asset Condition | St Ives 11kV switchgear replacement | Sep-33 | 30.7 | 2031 |
| Sydney | Asset Condition | North Head ZS 33kV & 11kV switchgear replacement | Sep-33 | 28.4 | 2031 |
| Sydney | Asset Condition | Surry Hills ZS 33kV Feeders 383, 384 & 385 Replacement | Jun-34 | 13.1 | 2031 |
| Sydney | Asset Condition | Matraville ZS 33kV Feeders 313, 318, 324 & 340 Replacement | Mar-34 | 13.4 | 2031 |
| Sydney | Asset Condition | 132kV Feeder 9S6/1 & 9S9/1 Pyrmont STS - Haymarket BSP Replacement | Jun-34 | 26.9 | 2031 |
| Sydney | Asset Condition | Riverwood ZS 11kV switchgear replacement | Sep-36 | 14.9 | 2032 |
| Sydney | Asset Condition | Miranda ZS 11kV switchgear replacement | Sep-35 | 15.5 | 2032 |
| Sydney | Asset Condition | 132kV Feeder 262 Double Bay - Clovelly Replacement | Jun-34 | 17.9 | 2032 |
| Sydney | Asset Condition | 132kV Feeders 90R & 9SB/2 Campbell St ZS-Surry Hills STS Replacement | Jun-34 | 35.4 | 2032 |
| Sydney | Asset Condition | 132 kV Feeders 9E3(1) & 9E4(1) Replacement | Jun-34 | 29.5 | 2032 |
| Sydney | Asset Condition | 132kV Feeders 9M1 & 9M2 Syd East STSS - Warringah ZS Replacement | Jun-34 | 19.1 | 2032 |
| Sydney | Load Growth | New 132kV busbar Willoughby STS | Dec-34 | 37.4 | 2032 |
| Sydney | Asset Condition | Campsie ZS 11kV switchgear replacement | Sep-36 | 27.8 | 2034 |
| Central Coast | Asset Condition | New Noraville 33/11kV ZS | Dec-36 | 33.4 | 2034 |
| Dual Function Assets | | | | | |
| Sydney | Asset Condition | 132kV Feeder 9SE Beaconsfield BSP - Green Square ZS Replacement | Jun-34 | 7.5 | 2033 |
| Sydney | Asset Condition | 132kV Feeder 270 Kingsford ZS - Maroubra ZS Replacement | Jun-34 | 10.1 | 2033 |

**Completed or cancelled investments during the preceding year**

| Load Area | Completed Network Investments | Investment Status |
|---|---|---|
| Distribution Assets | | |
| Upper Hunter | Muswellbrook STS refurbishment | Completed |
| Newcastle Ports | Waratah 132/33kV STS refurbishment | Completed |
| Camperdown & Blackwattle Bay | Pyrmont STS cable egress enabling works | Completed |
| Eastern Suburbs | New 33kV supply to Garden Island and decommission Graving Dock 33/11kV ZS | Completed |
| Inner West | Lidcombe ZS 11 kV Switchgear Replacement & 33kV feeders—Homebush to Lidcombe ZS and Auburn ZS Replacement | Completed |
| Eastern Suburbs | Surry Hills ZS 11kV switchgear replacement | Completed |



**New Network investments committed in 2025**

| Load Area | Committed Refurbishment, Replacement or Augmentation Investments | Expected Completion | Indicative Cost ($m, nominal) |
|---|---|---|---|
| Distribution Assets | | | |
| Singleton | New 66kV Capacitor Banks Singleton STS | Jun-26 | 3.6 |
| Upper North Shore | 132kV Feeders 9E1 & 9E2 Sydney East-Kuringai STS oil sections replacement | Dec-27 | 12.2 |

### 2.7 Urgent and unforeseen investments

No distributon or dual function network projects required to address an urgent or unforeseen network issue.

# Information and Communications Technology Systems Investments

## Information, Communication and Technology

Ausgrid relies on Information, Communication, and Technology (**ICT**) for crucial network operations, enabling effective asset management planning, regulatory compliance, and statutory reporting obligations.

ICT systems play an integral role in functions such as asset lifecycle management, asset operations, customer and market management and financial reporting, with Supervisory Control and Data Acquisition and Network control systems crucial for monitoring and managing the electrical network.

ICT also allows Ausgrid to prudently adopt and effectively implement technology, leading to improved services to network customers and reduce costs over time.

Key ICT systems support the following Ausgrid core business functions:

- **Asset Lifecycle Management**
- **Works Management**
- **Market Management and Customer Management**
- **Enterprise Management**
- **IT Management**
- **Asset Operations**

## Advanced Distribution Management System

Ausgrid relies on the ADMS to manage its distribution network. The ADMS platform allows for remote monitoring, control, outage management, improve planned and emergency event management, and fault location optimisation. Core monitoring and control functions were integrated in November 2022, with further enhancements planned to replace older technologies.

The overall program is delivered via a phased approach which has been adopted to mitigate the risks of a large technology rollout and to allow the business time to adapt to the ADMS functionality across three phases, each building upon new capability acquired in the prior phase.

### Key Updates for 2025:

**Phase 2** Go Live

- Transition to ADMS Outage Management System
- Unplanned Work Solution (integrated Go Live of ADMS, Customer Relationship Management, and Work Management Systems).
- Adoption of the ADMS Field Client tool for Unplanned works
- Planned Work Solution (Implementation of Network Access Request and adoption of ADMS Field Client for planned works)

**Phase 3** Advanced Applications and Version Migration

FLISR Go Live in Automated Mode – go live in Automated mode of FLISR - the largest implementation of the Schneider FLISR worldwide.

- Remaining advanced applications and version 3.10

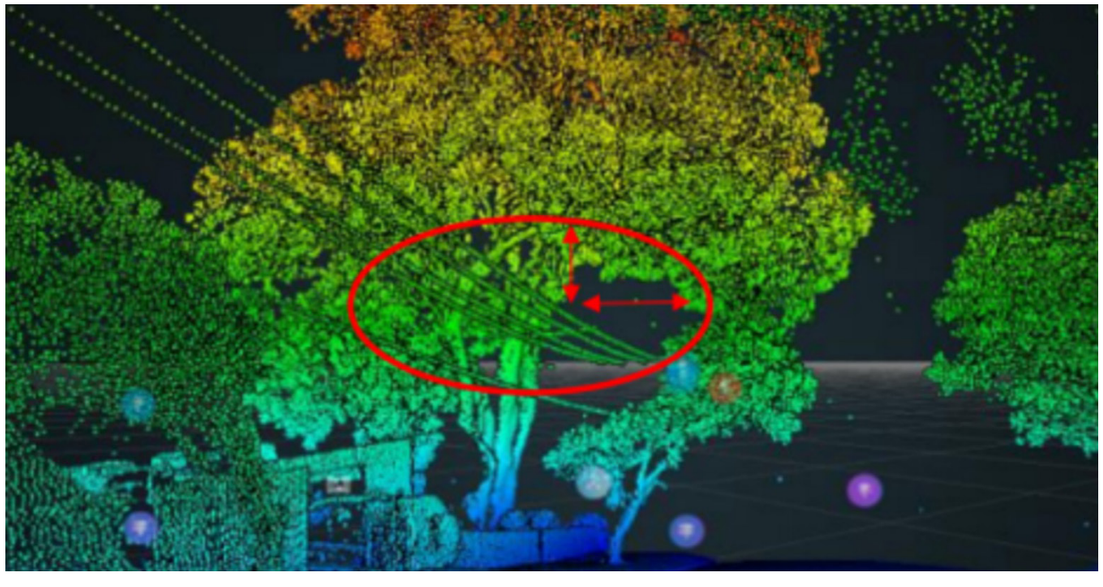
### Network Asset Digitisation

Ausgrid's Network Digitisation Program is progressing steadily as Ausgrid continues to enhance the Digital Twin capabilities, integrate drone technology, broaden LiDAR capture program, and develop AI-powered big data platforms. This program is a key enabler of our broader digital transformation strategy, aimed at improving network reliability, operational efficiency, and customer outcomes.

Key focus areas include:

Digital Twin: Enabling intelligent design and asset insight

- Lidar strategy and capture program
- Drone operations: enhancing network visibility and emergency response
- Artificial intelligence and enterprise image repository



**By leveraging next generation network insights, we're enabling safer operations, reducing costs, and delivering a stronger, more resilient grid.**

# Planning Coordination

Joint Planning is carried out with other Network Service providers, in particular Transgrid, Endeavour Energy and Essential Energy.

| Joint Planning Completed in 2025 | |
|---|---|
| Transgrid | **Sydney Inner Metropolitan Transmission Load Area**<br>The Sydney Inner Metropolitan transmission network faces constraints in two key transmission corridors:<br>1. Transmission Corridor 1 ('TC1') - Transmission supply into Beaconsfield BSP from Bulk Supply Points at the edge of the city, Sydney South, Sydney North, and Rookwood Rd BSP.<br>2. Transmission Corridor 2 ('TC2') - Transmission supply into Haymarket BSP and surrounding Ausgrid 132kV zone substations from Sydney South BSP (Cable 42) and Ausgrid 132kV connections from Beaconsfield BSP and the meshed 132kV network.<br>Both corridors affected by ageing 330kV and 132kV assets and reduced cable capacity. Transgrid's Powering Sydney's Future strategy is addressing these issues through a staged solution: non-network measures, two new 330kV cables, reconfiguring Cable 41 to operate at 132kV, and progressive decommissioning of Ausgrid's ageing cables. Stage 1 was completed in June 2022, and early work on Stage 2 is now underway.<br>Sydney's Macquarie Park AreaARapid growth from driven by rezoning, housing development, and rising data centre demand is driving significant load increases in Macquarie Park, Lane Cove, and North Ryde. Broader trends such as EV uptake and electrification are further intensifying demand across Sydney.AExisting 132kV capacity is becoming constrained, and Transgrid and Ausgrid are jointly progressing plans for a new 330kV bulk supply point to support future growth and enhance network reliability. |
| | **Other Transmission Load Areas**<br>**Sydney East BSP Protection Upgrades:**<br>Transgrid is replacing aged secondary systems at the Sydney East 330/132kV BSP, a key supply point for Ausgrid's North Shore and Northern Beaches. In response, Ausgrid is delivering the necessary protection upgrades on its affected feeders, aligned with Transgrid's program scheduled for completion in 2027/28.<br>**Increasing Capacity Needs in Macquarie Park:**<br>Strong demand growth centred in Macquarie Park, and spreading across metropolitan Sydney, is expected to drive the need for additional transformer capacity at several BSPs supplying the region. |
| | **Voltage Planning**<br>Voltage specific joint planning stream has continued this year. This concept provides for a BSP to LV customer planning approach for our whole network whilst aligning with the upstream Transgrid voltage requirements, resulting in improved voltage issues and DER hosting capacity. |
| | **Embedded Generation Planning**<br>A number of large embedded generator and Battery Energy Storage System connections to the Ausgrid network has and may require joint planning and assessment with Transgrid. |
| Endeavour Energy | Discussion at joint planning meeting focused on:<br>• AEMC consultation paper on improving the NEM Access Standard for the large loads such as data centres and hydrogen electrolysers.<br>• Update on analysis of feeder 926/927 supply to Endeavour Energy owned Carlingford transmission substation.<br>• Update Connection Agreement Databook to include existing and proposed Inter distributor supply and cross border arrangements.<br>• Medium to long term plan to address large influx of data centre enquiries by Ausgrid and Endeavour Energy<br>• Ausgrid Forecast methodology approach with respect to minimum demand, treatment of data centres and BESS and Distributed Energy Resources (DER) |
| Essential Energy | Discussion at joint planning meeting focused on:<br>• Concerns regarding load growth at Clarence Town the likely future load requirements for new housing and additional town facilities such as a new school and supermarket. Ausgrid raised concerns about growth at Karuah, requiring additional connectivity in the area to maintain customer reliability and adequate voltage levels on the network. |
| **Planned Joint Network Investments** | |
| Transgrid | • Replacement of the shunt reactor at Sydney East BSP due to condition issues. Voltage and power factors need to be managed at Sydney East BSP.<br>• Potential installation of a new shunt reactor at Beaconsfield BSP due to Ausgrid experiencing high voltages and leading power factor. Investigations will continue in 2025. |
| Endeavour Energy | • Supply to Ausgrid's Auburn and Lidcombe Zone Substations from Endeavour Energy's Camellia Transmission Substation. |
| Essential Energy | • No jointly planned network investments with Essential Energy in the preceding year |

# Correspondence


www.ausgrid.com.au

For all enquiries regarding the Distribution and Transmission Annual Planning Report 2025 and for making written submissions contact:

Ausgrid Head of Asset Management & Planning

Email: assetinvestment@ausgrid.com.au

ABN: 78 508 211 731


Ausgrid