

Reliability Drop in Session Consultative Group Members

25 August 2026





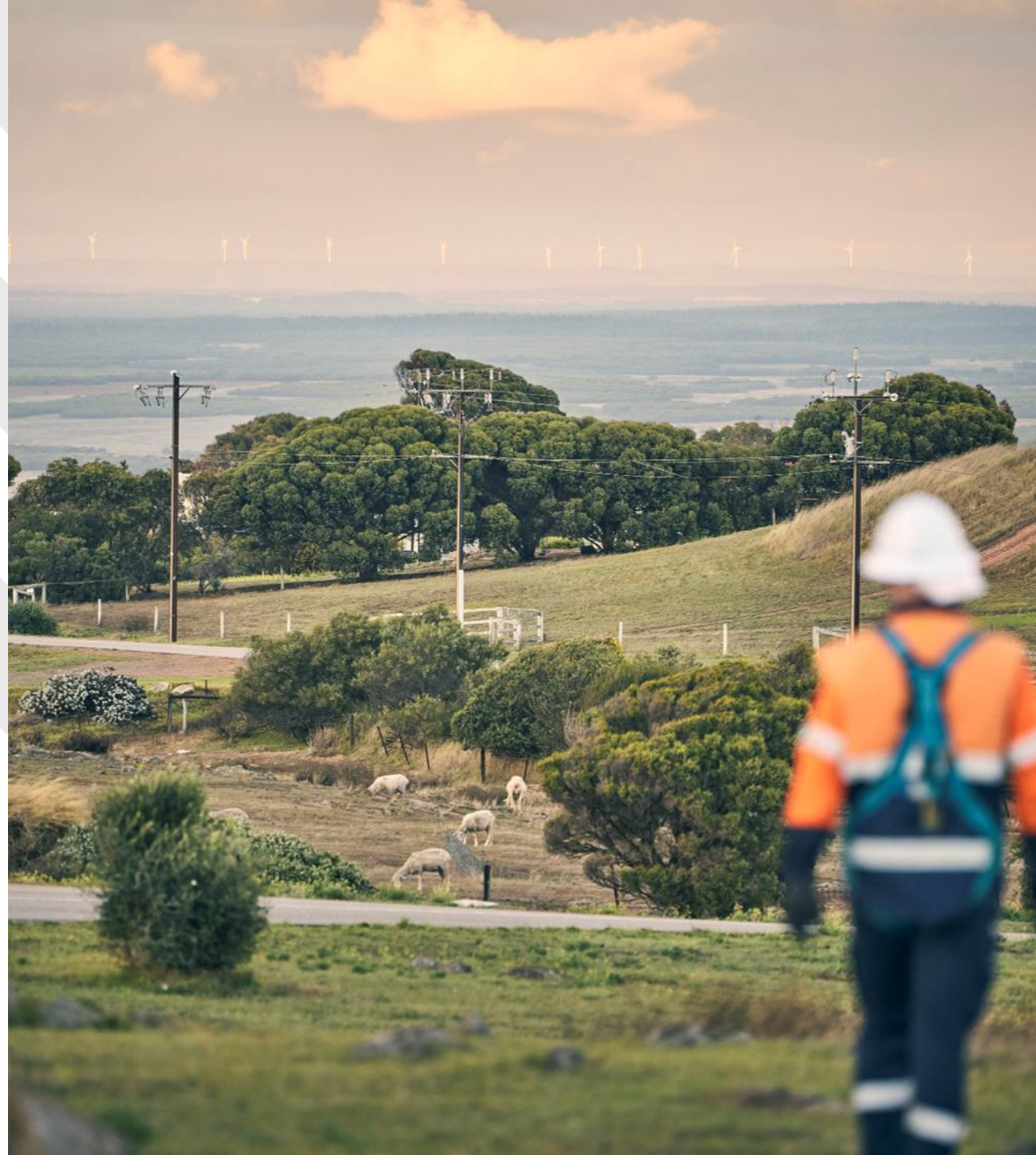
Acknowledgement of Country

SA Power Networks acknowledges the multiple Traditional Owners of the lands that host the South Australian electricity network and their connections to land, sea, and community. We would also like to pay our respects to all First Nations peoples past and present, acknowledging their deep connection to Country, Culture and Community.

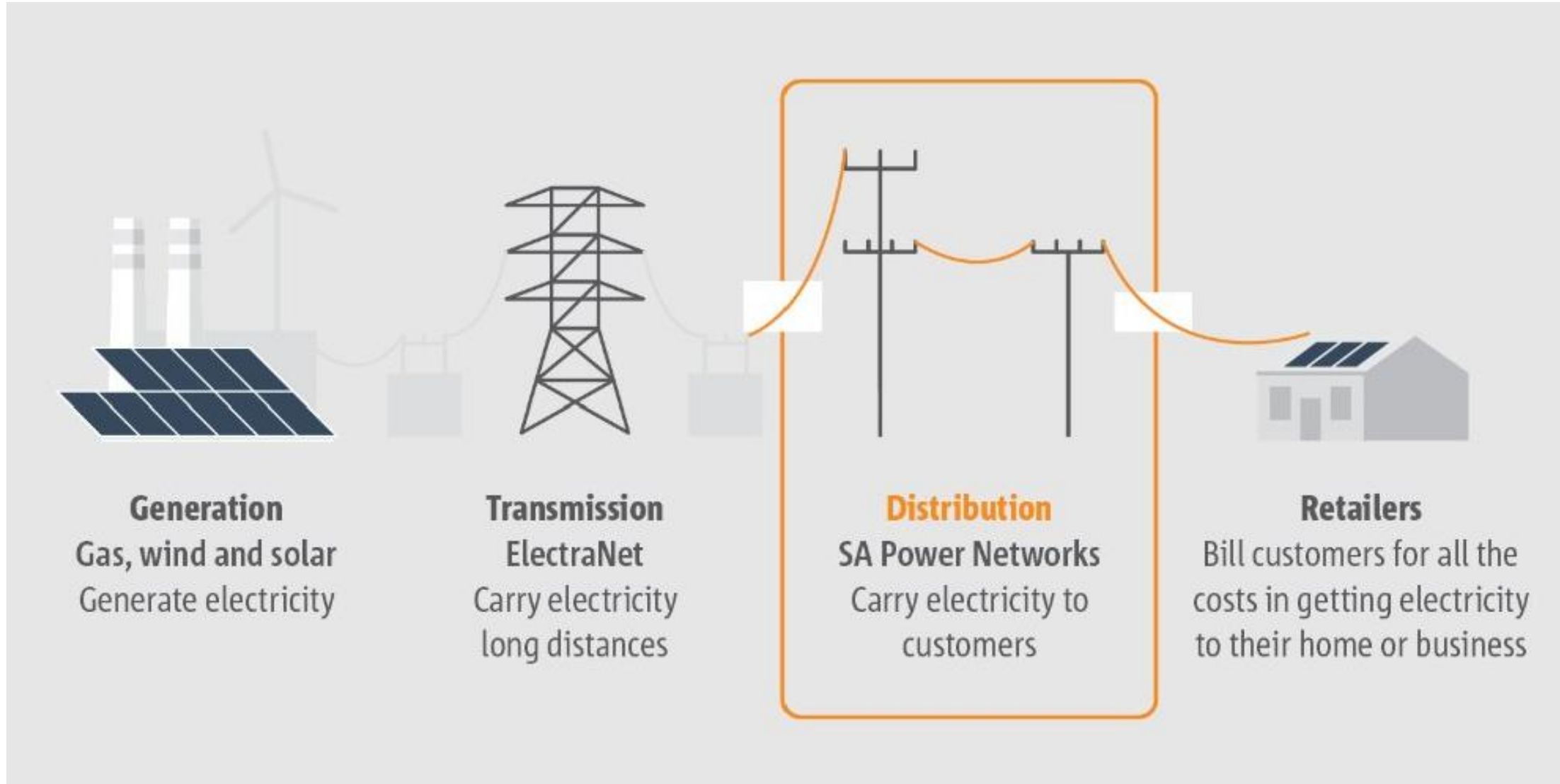
Connection With Country, 2025 by Kelly Taylor & T'Keyah Ware

Overview of Reliability

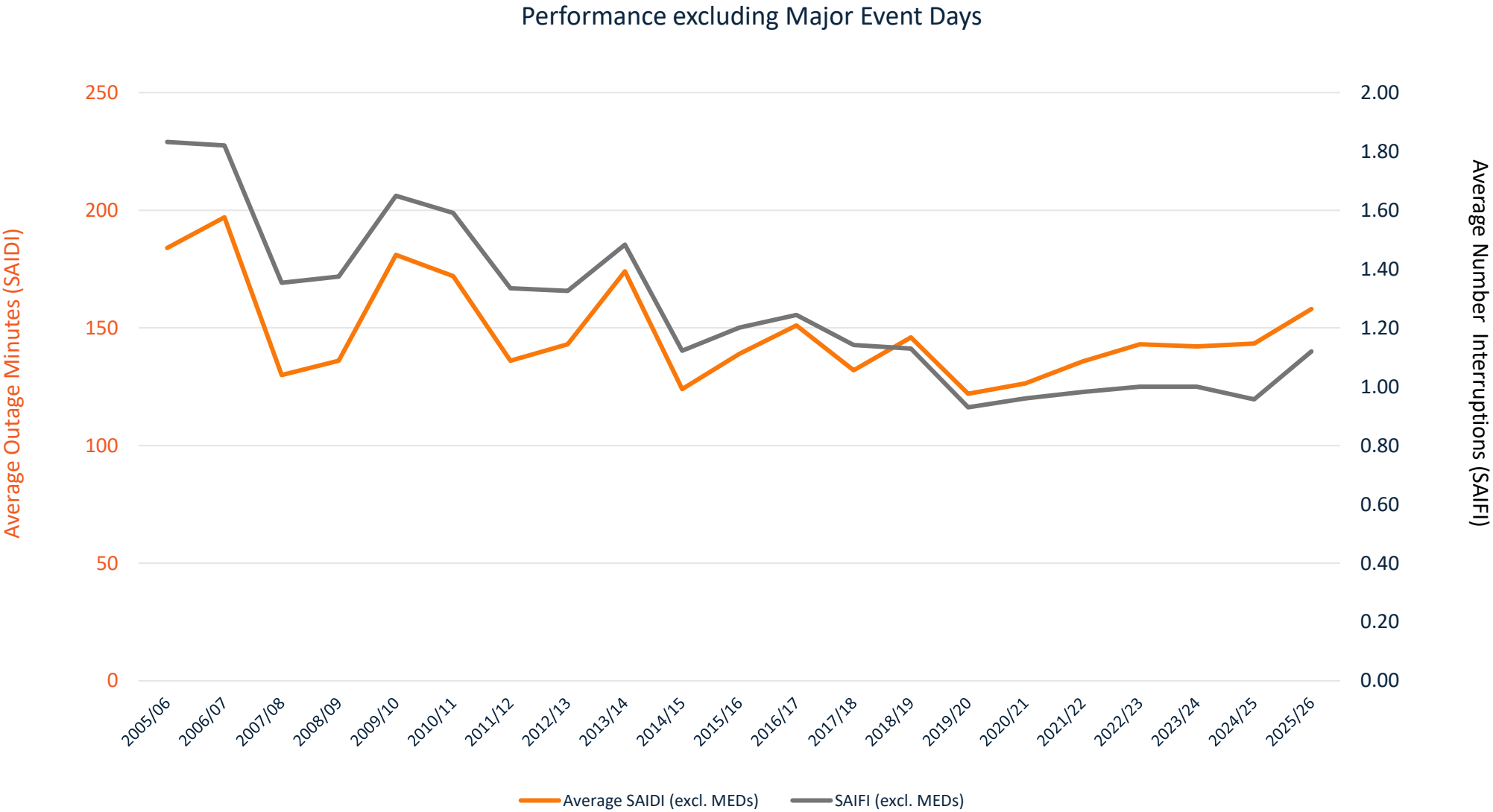
Kym Williams, Reliability Manager



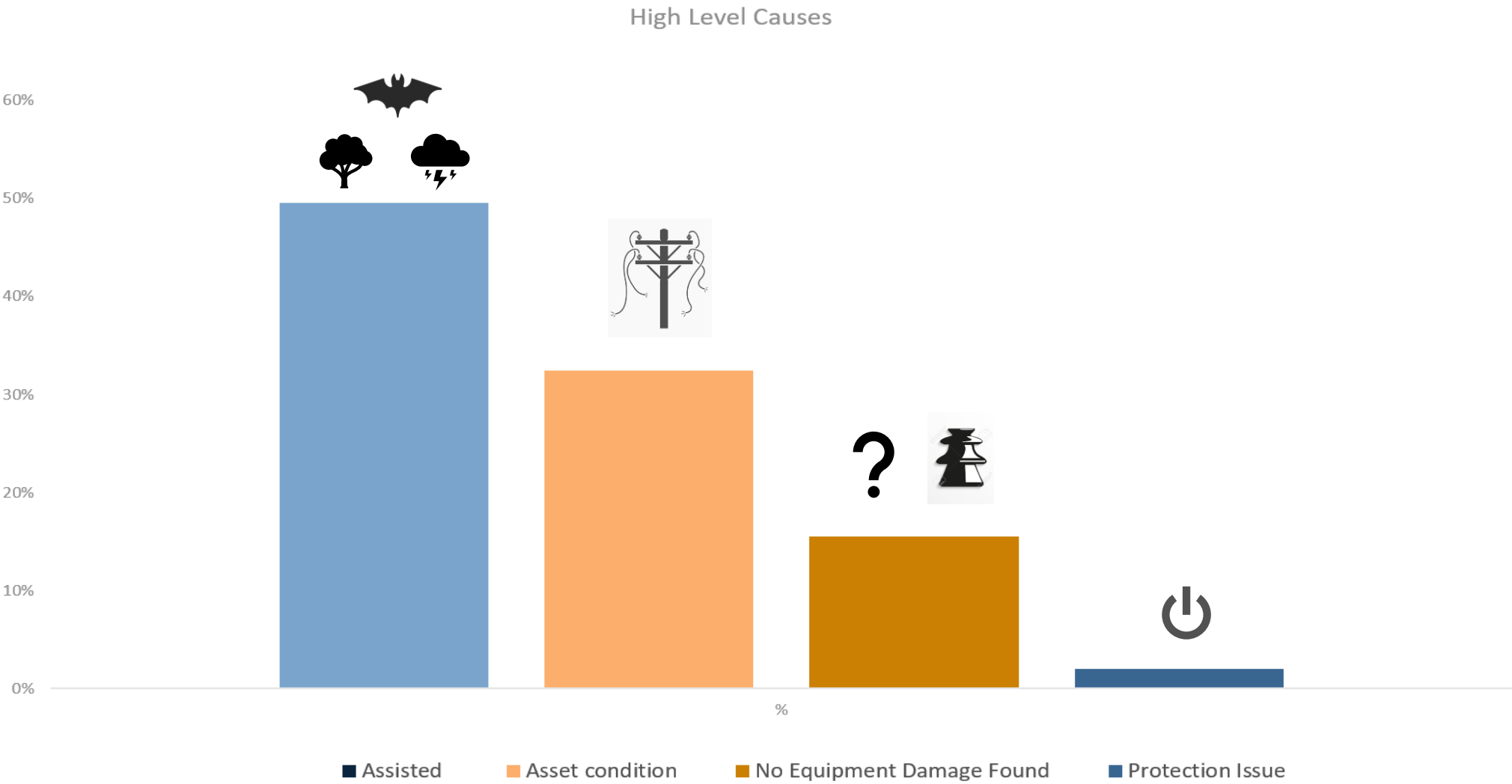
Our Network



Unplanned - Outage & Duration Trends

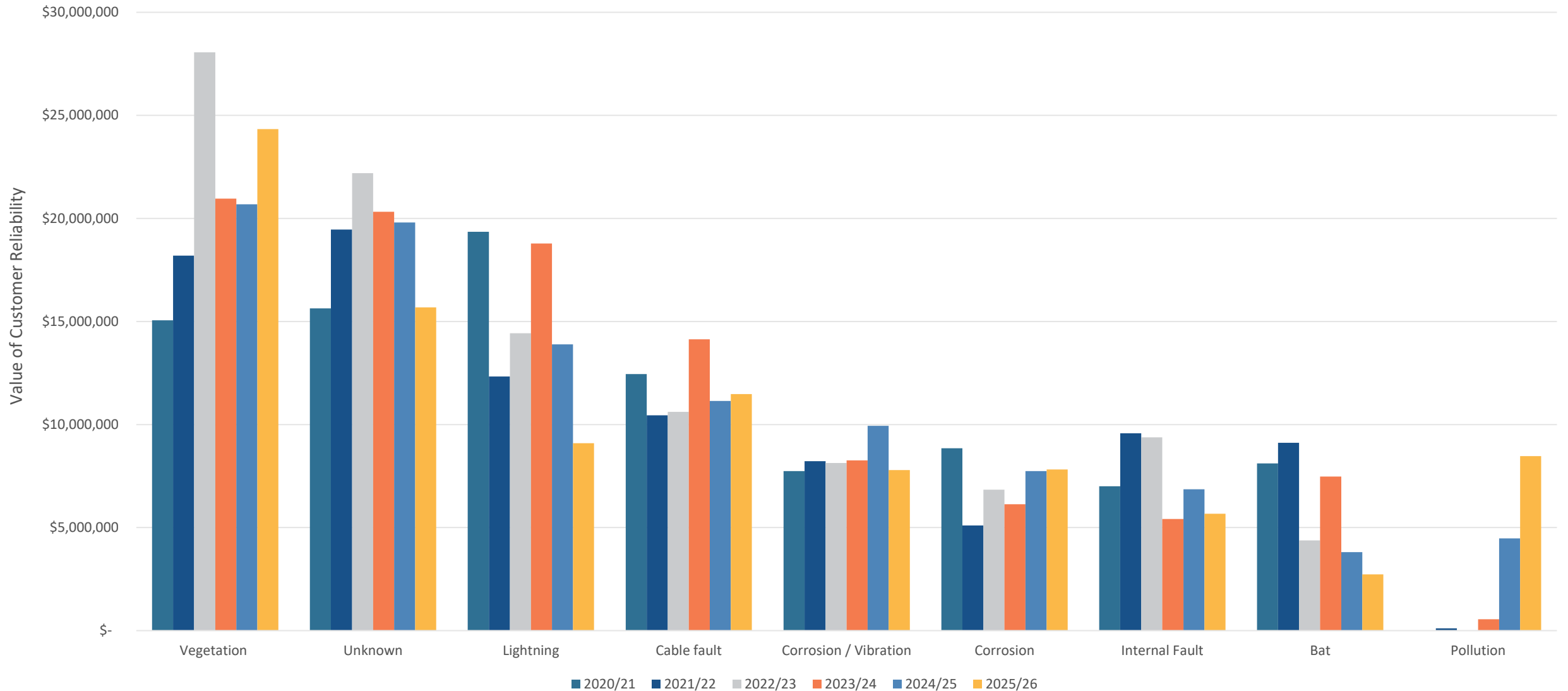


Reliability - High Level Cause Contribution

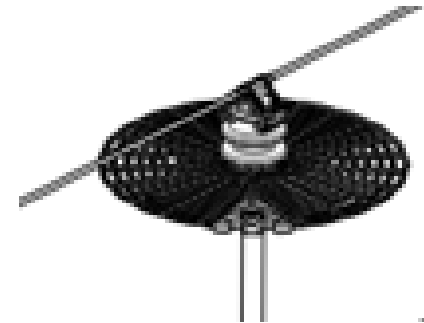
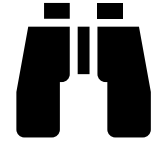
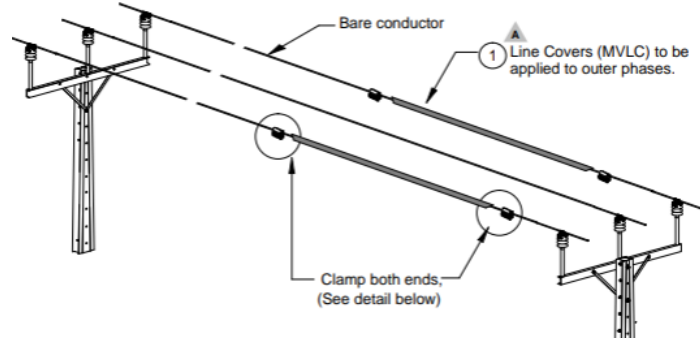
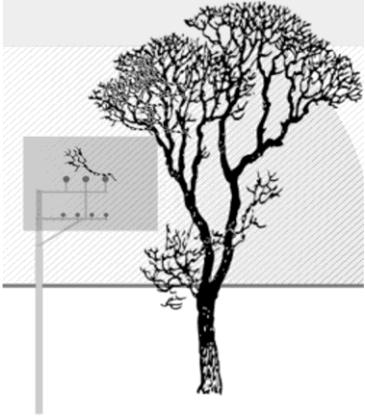


Reliability – Highest Causes

Highest Cause Contribution

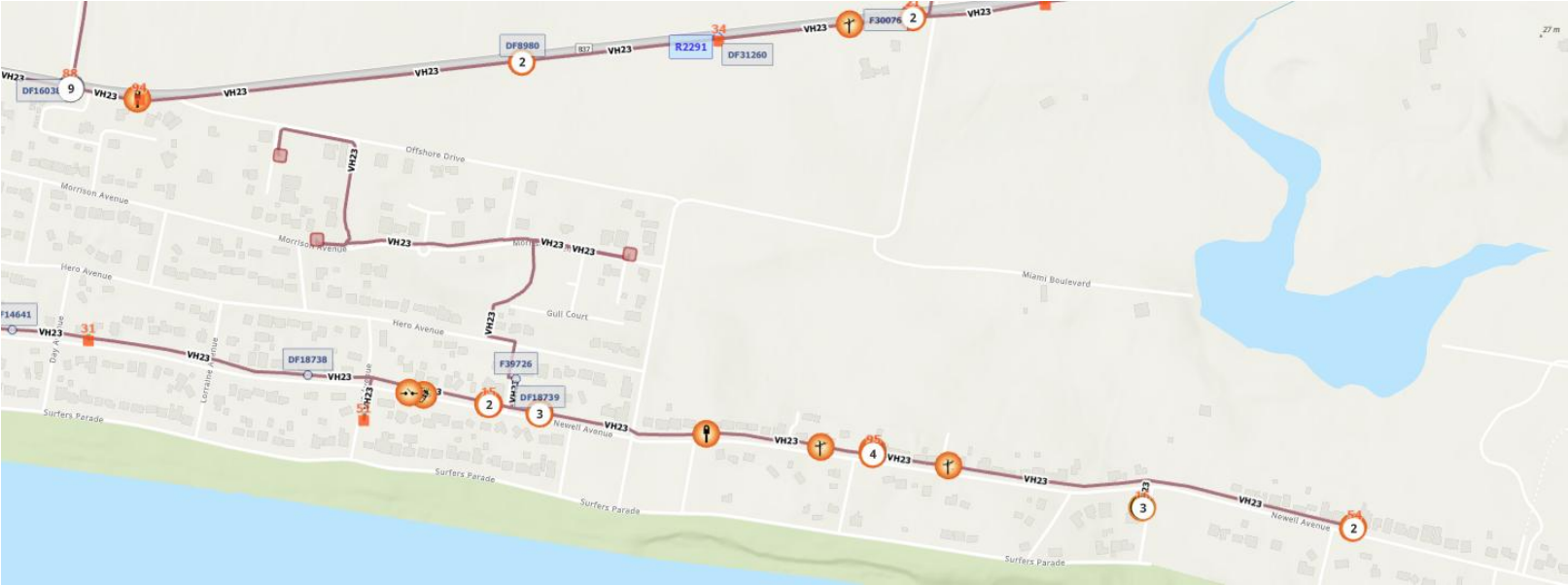


Interruption Prevention



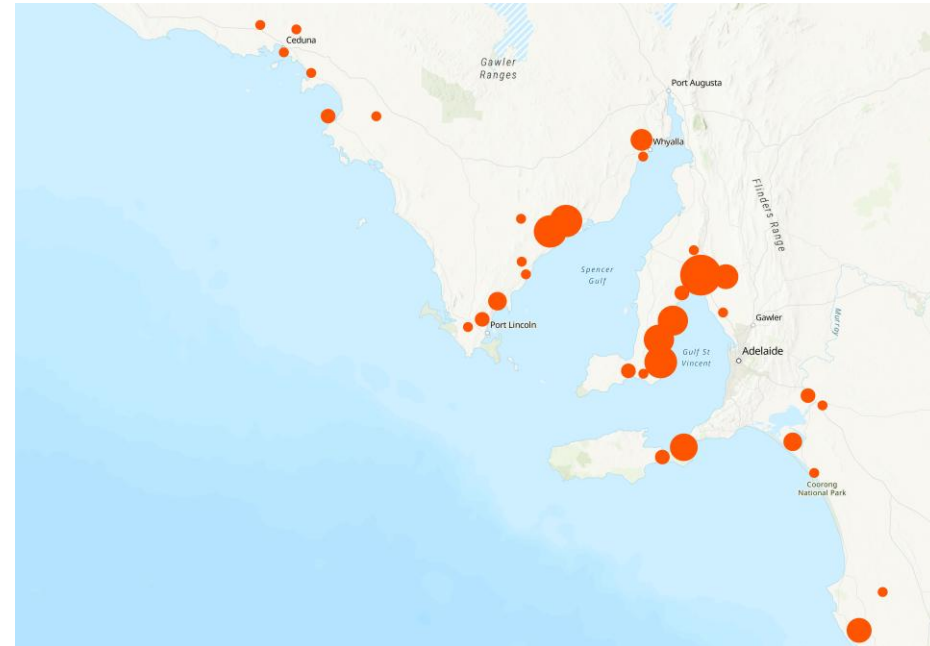
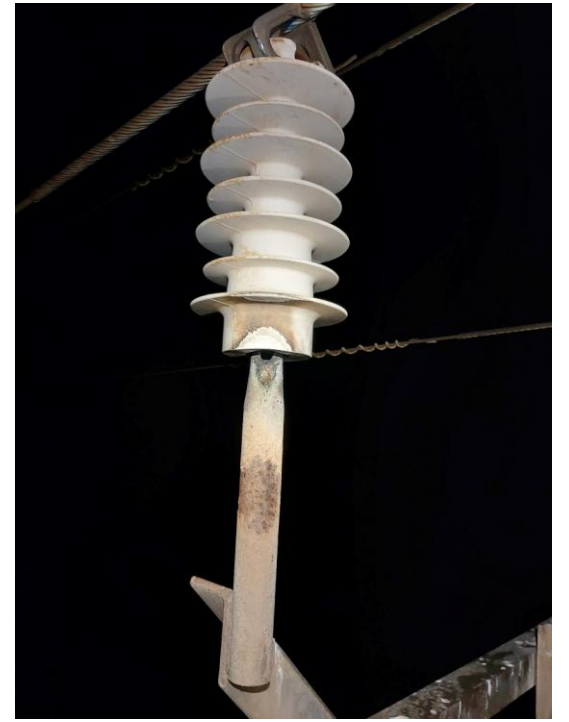
Targeted Failing Assets for Replacement

No. of Customers: 11,022	No. of Outages: 19
Sum of SPS: \$899,842.71	No. of Poles: 59
Customer Minutes: 258,159.698	VCR: 0



Insulator Pollution – what it is

- Insulators secure powerlines while preventing electric current from flowing into the pole and to the ground.
- Built up dust, dirt and salt – combined with dew – can create a conductive path (a “flashover”).
- This issue emerged at scale in summer 2024/25 as a weather-driven, system-wide reliability issue.
- Predominantly impacting coastal powerlines.
- **State-wide:** Approx 6,000 km of line, potentially 52,000 insulators impacted.
- Limited to 33kv and 19kV SWER lines



Response

- Lines washed based on Interruption activity.
- Insulator washing and targeted replacement of worst condition insulators, requiring planned interruptions.
- Alternative washing methods to speed up the process, including the use of helicopters.
- Back up emergency Generation.

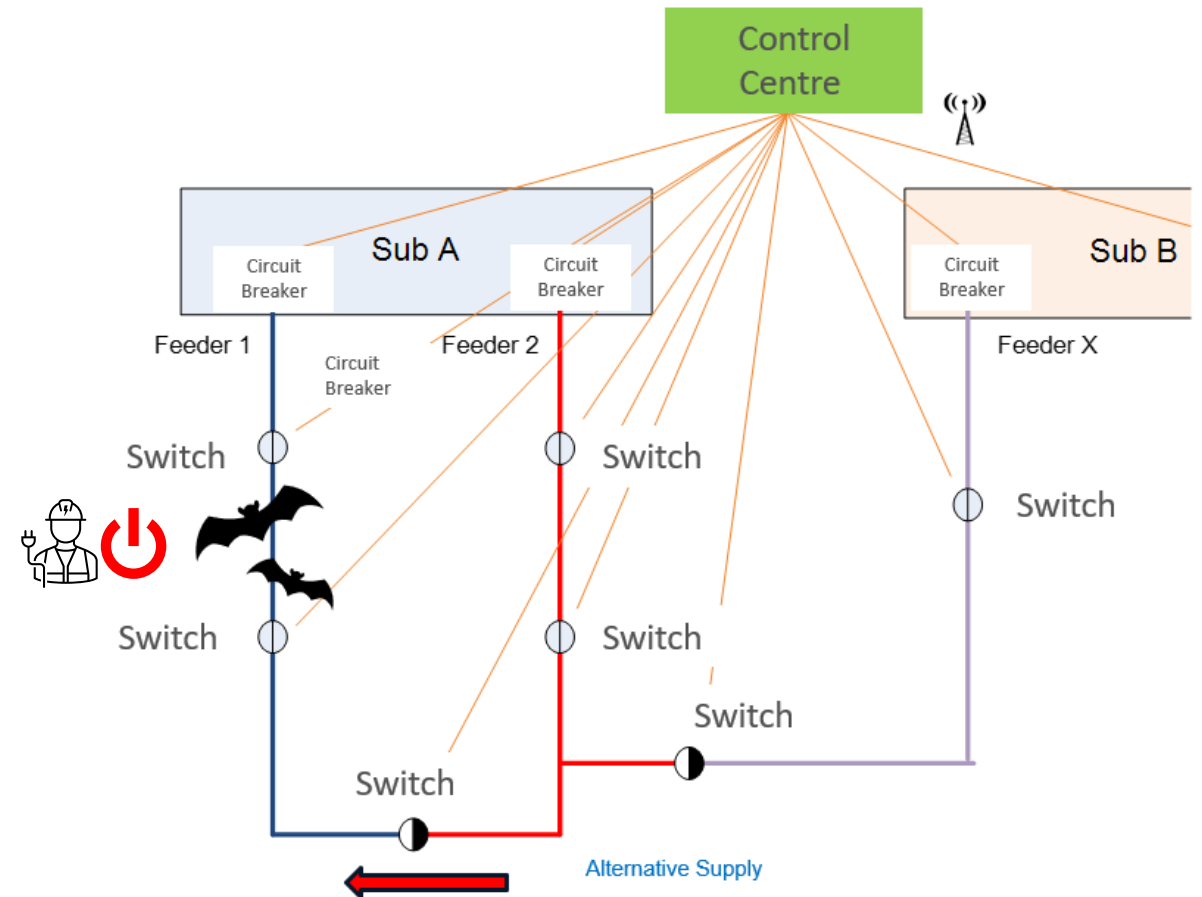
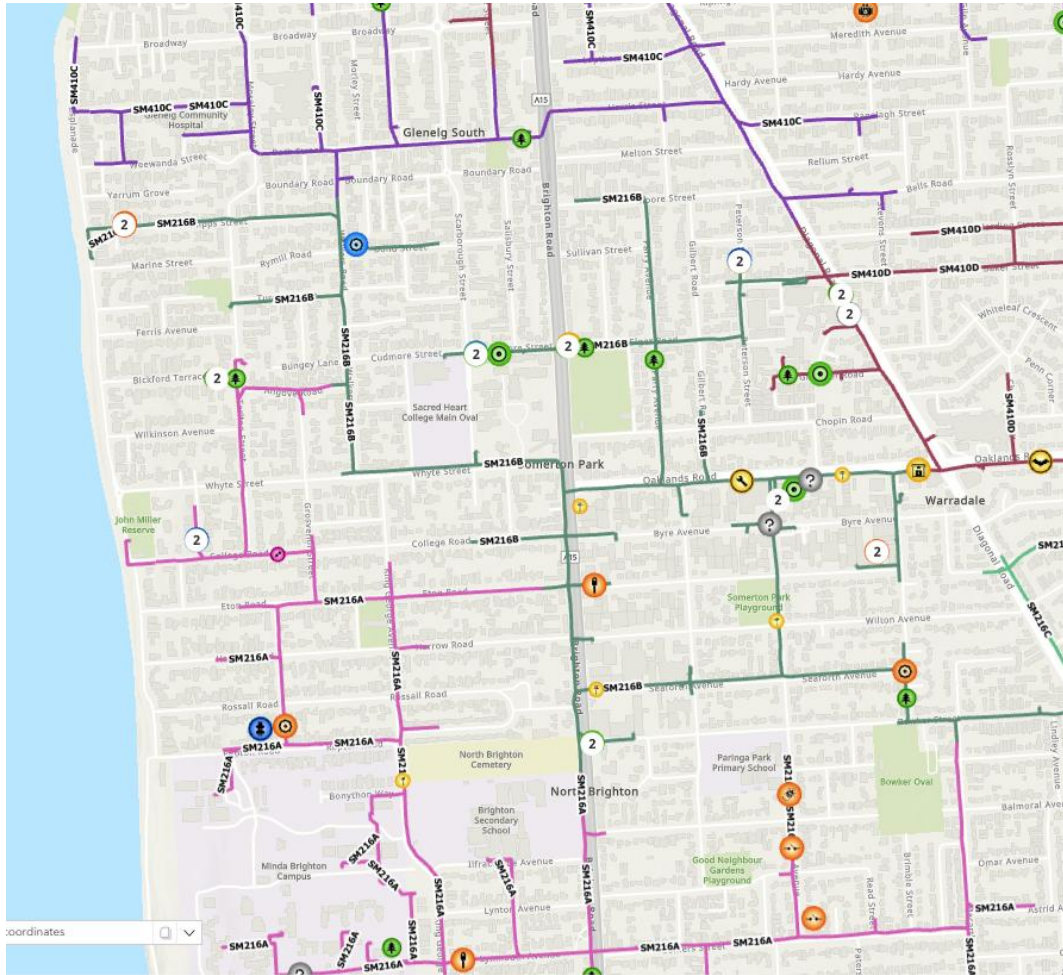


Mitigation and Remediation

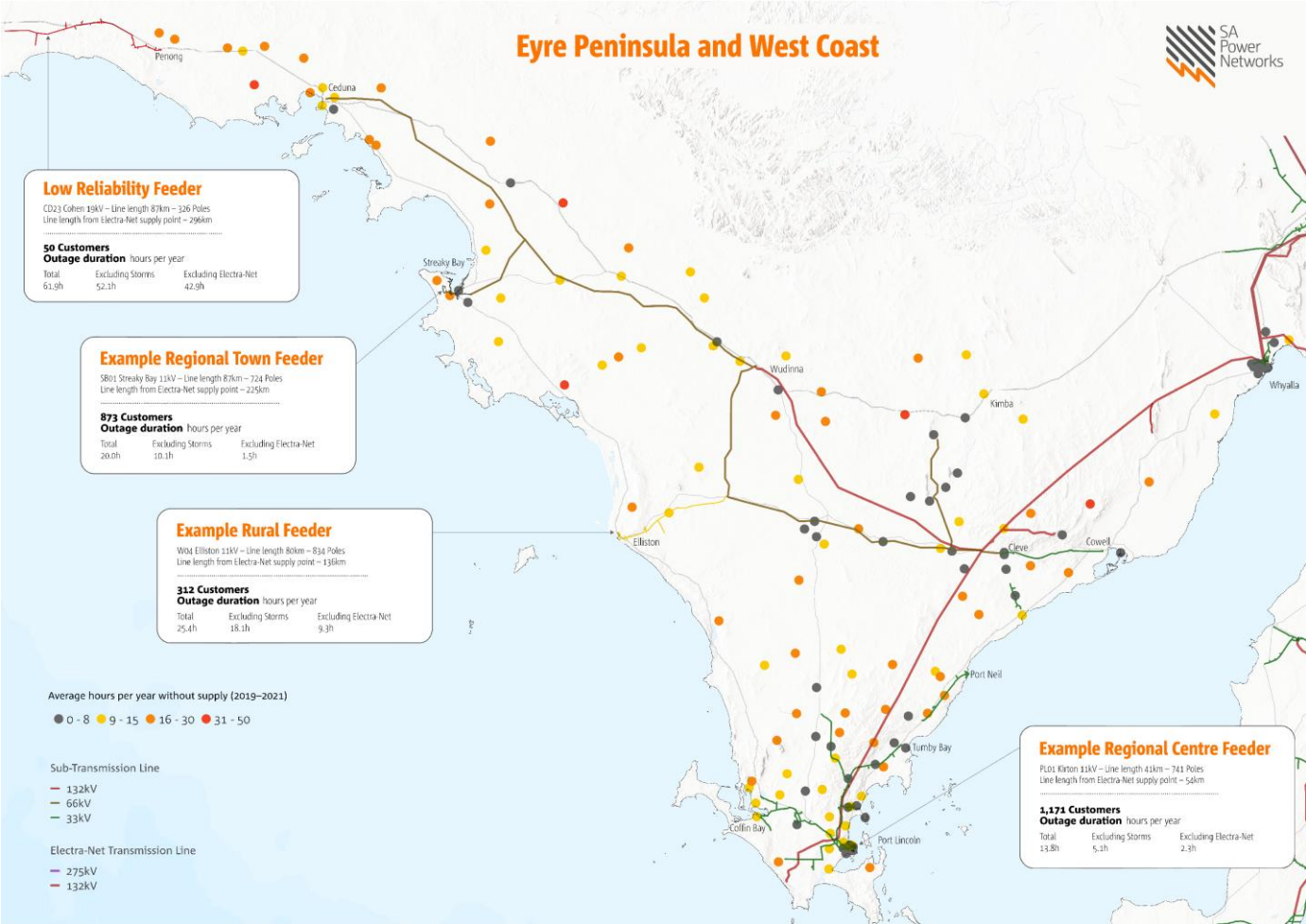
- Insulator upgrade program, combined with broader network rebuild
 - upgrade network with more pollution resilient insulators
 - Higher kV Rating
- Silicone coating of insulators reduces likelihood of flashover occurring
- High Voltage switches with automation
 - reduces impact when flashovers do occur



Metro Network – Back up supply (feeder automation)

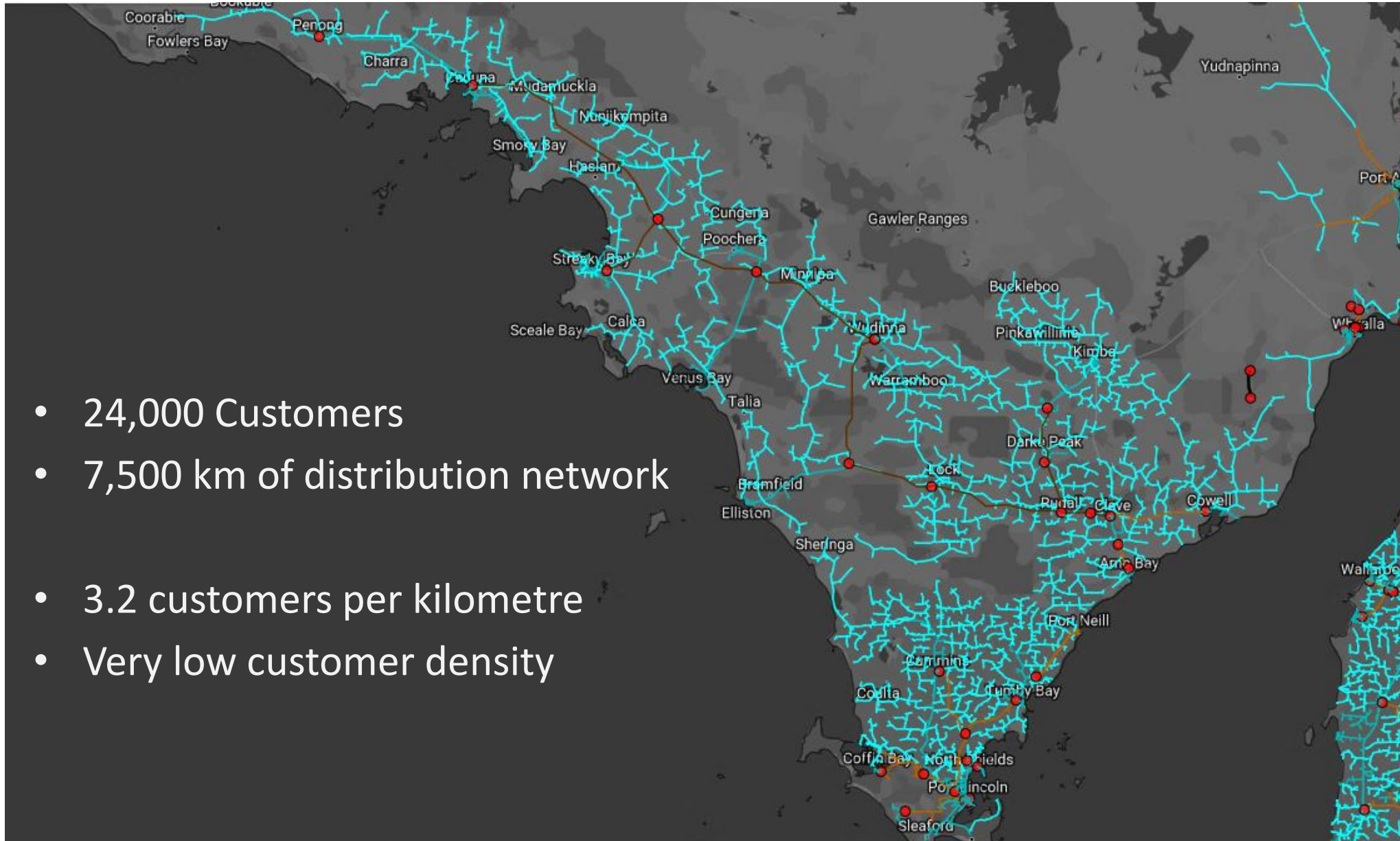


Rural Network – Radial Lines

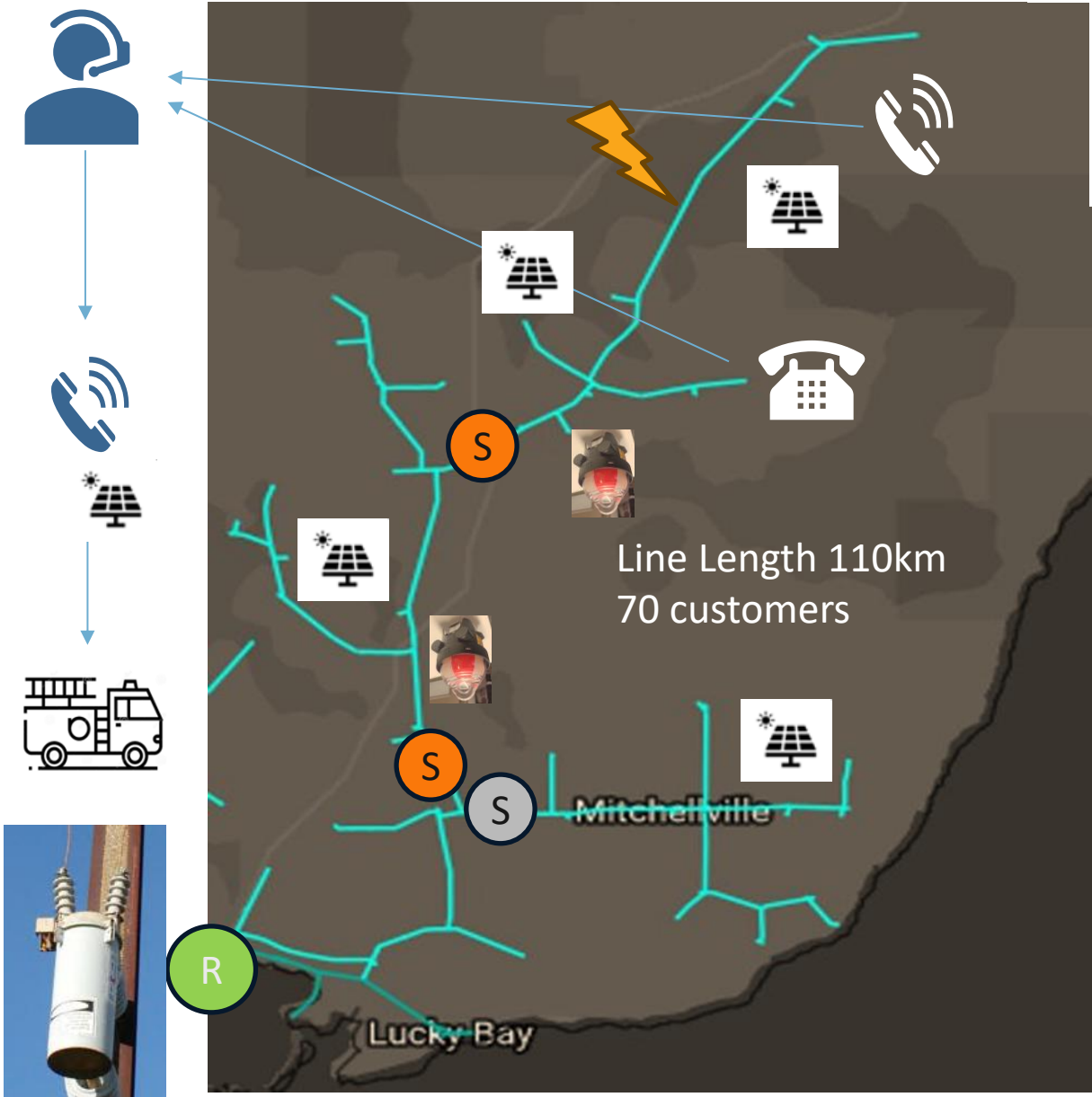


SWER Network

- 24,000 Customers
- 7,500 km of distribution network
- 3.2 customers per kilometre
- Very low customer density



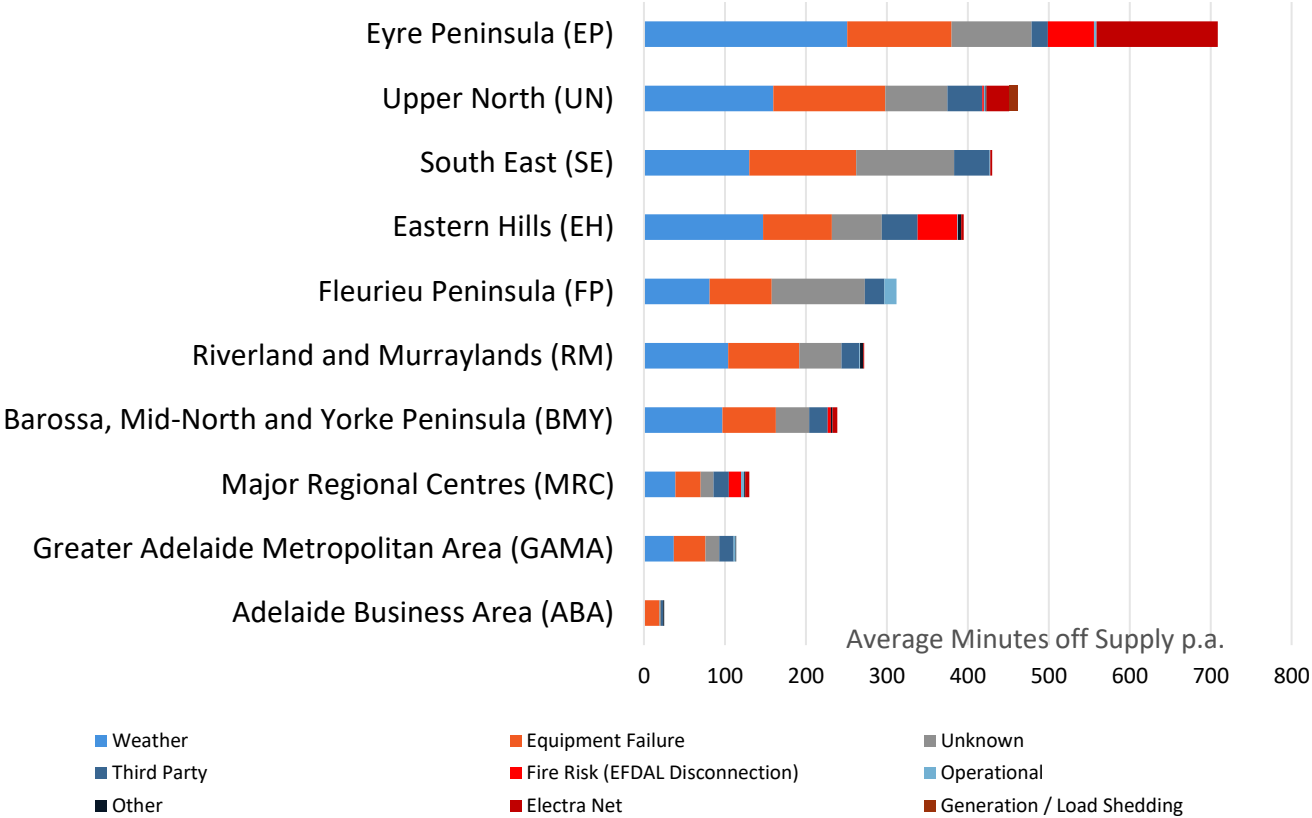
Rural Supply Restoration challenges



Network reliability – Performance by Region



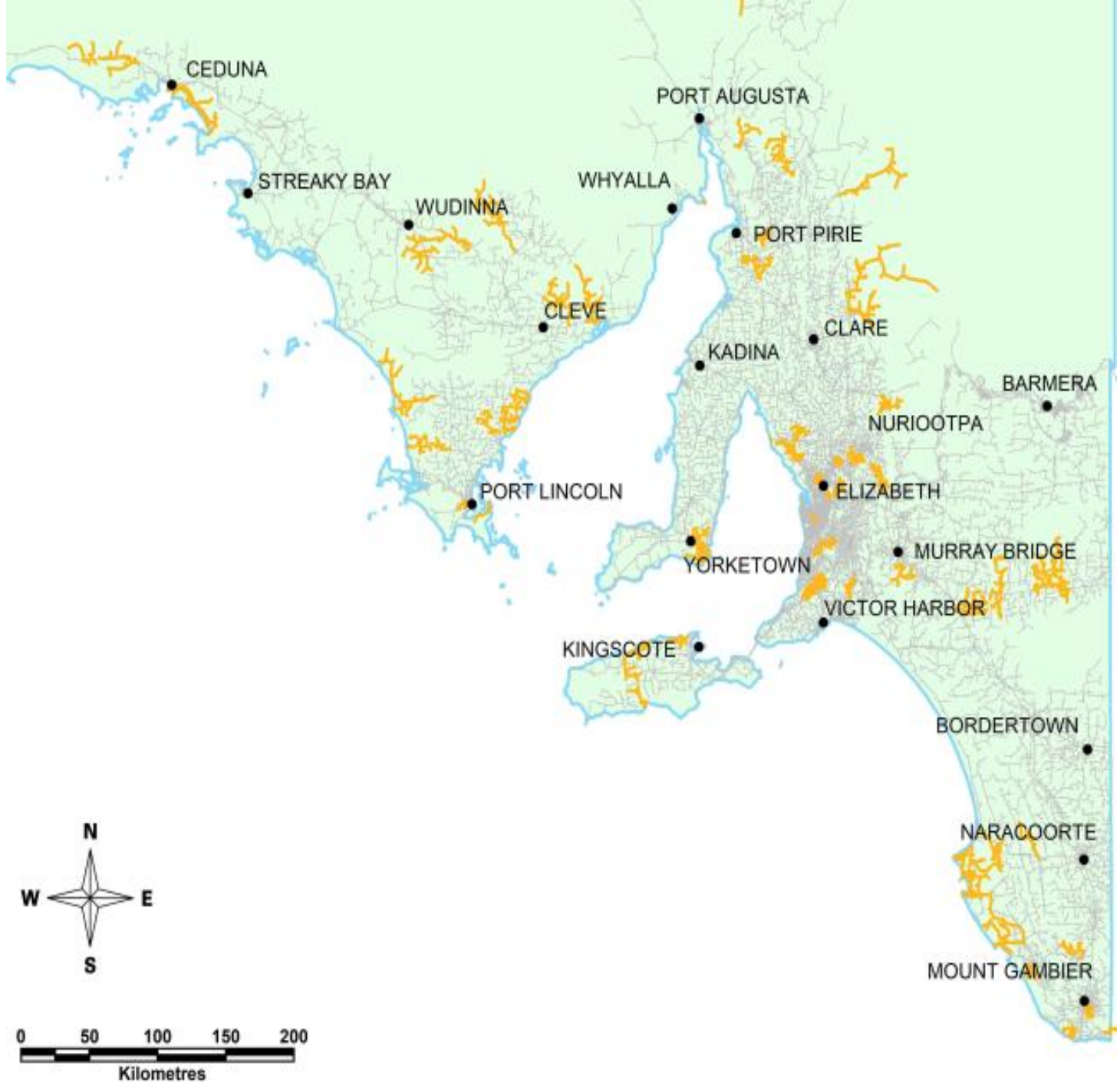
Average Minutes off Supply per Region
(Customer experience includes Storms Electra- net & Fire Danger disconnections)



Feeder Category Performance Report – 5-year average

Electricity Distribution Code Feeder Category targets Excluding Major Event Days	CBD 15 mins	Metro 110 mins	Rural Short 200 mins	Rural Long 300 mins
Interruption Duration (SAIDI)				
Interruption Frequency (SAIFI)				
Supply Restoration Time Performance				

Long Term Low Reliability Feeders



The Value of Customer Reliability

How Australia puts a dollar figure on reliable electricity supply



What is the VCR?

The Value of Customer Reliability (VCR) is a dollar figure — expressed in \$/kWh — that estimates how much different types of electricity customers are willing to pay to avoid a power outage. Since there is no real market for "reliability", the AER estimates it through customer surveys.

Not one number

VCR is a collection of values, split by customer type, location and outage conditions — not a single national figure.

Measured in \$/kWh

Expressed as dollars per kilowatt-hour of electricity not supplied during an outage.

Set by the AER

The Australian Energy Regulator calculates VCR under a rule made by the AEMC in 2018.

Why it matters: a reliability–cost trade-off

More reliable electricity supply requires more network investment — and customers pay for that investment through their bills. VCR gives regulators a way to weigh the cost of extra reliability against what customers value.

Too little investment

- More frequent or longer outages
- Lost productivity and business revenue
- Reduced safety, comfort and convenience for households

Too much investment

- Higher network charges baked into bills
- Customers pay for reliability they never wanted
- Assets built where value isn't there to justify them

How VCR is calculated

The AER surveys real customers rather than guessing at a number.

01

Residential & smaller business

Contingent valuation and choice-modelling surveys ask customers what they'd pay to avoid outages of varying length, timing and season.

02

Very large business (>10 MVA)

Large energy users are asked to directly value the real cost outages impose on their operations.

03

Segmentation

Results are grouped by customer type, climate zone/remoteness, and state — not one flat number.

04

Review & adjustment

Methodology is reviewed periodically (2019, 2024); values are adjusted annually for inflation (CPI).

Example values (AER, \$2019/kWh)

Business customers consistently value reliability more highly than households.

Customer segment	Example category	VCR (\$/kWh)
Residential	National Electricity Market average	\$24.08
Residential	South Australia (highest state)	\$30.31
Business (<10 MVA)	Agriculture	\$37.87
Business (<10 MVA)	Commercial	\$44.52
Business (<10 MVA)	Industrial	\$63.79
Very large business (>10 MVA)	Services	\$10.54
Very large business (>10 MVA)	Industrial	\$117.99

2024 update: residential VCR rose in most segments; business and very-large-business VCR fell, most sharply for industrial customers.

How VCR is used

VCR feeds directly into how much Australia spends on network reliability.

Reliability standard & settings

The Reliability Panel uses VCR to check whether the National Electricity Market's reliability standard (max. 0.002% unserved energy) is set appropriately.

Network investment tests

VCR is a key input to cost-benefit tests (e.g. RIT-T / RIT-D) that decide whether a proposed network upgrade is worth building.

Performance incentive schemes

Used in schemes like STPIS to link network reliability outcomes to financial rewards or penalties for network businesses.

Emergency reserves (RERT)

Informs decisions on procuring emergency reserve capacity to keep supply reliable during system stress.

Key takeaways

- VCR turns an intangible — how much customers value reliable power — into a dollar figure regulators can act on.
- It varies widely by customer type: business and industrial users value reliability far more than households, per kWh.
- The AER recalculates VCR periodically (2014, 2019, 2024) via customer surveys, with annual inflation adjustments in between.
- It underpins billions of dollars in decisions: network investment tests, reliability standards, incentive schemes and emergency reserves.

Customer's needs

- Engaged with electricity consumers
 - Address customers identified concerns
 - Develop and propose new programs that customers address customers concerned
 - Which customers are willing to pay for (Value of Customer Reliability)

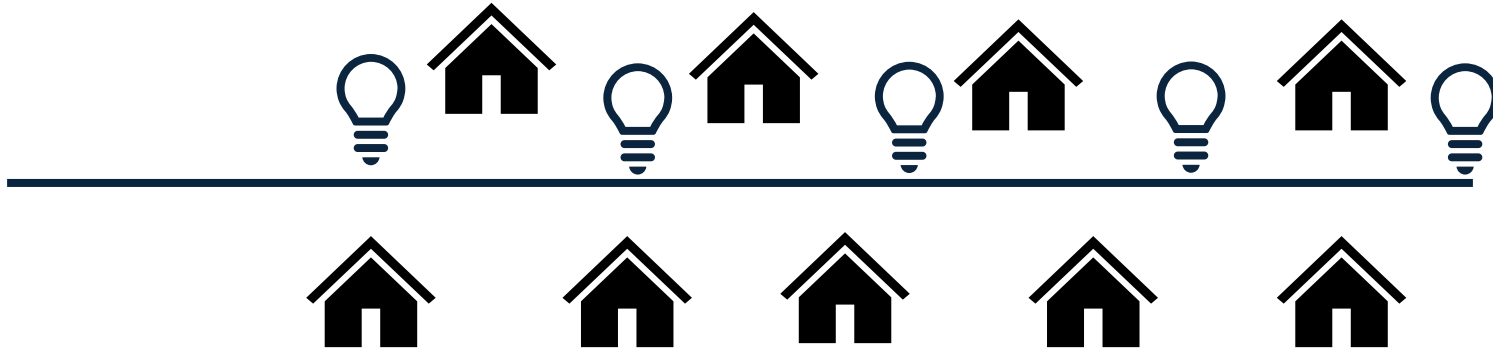
Jurisdictional Regulator

Customer Advisory Board

People Panel Vote



Reliability Improvement VCR Calculation



Customer Kilowatts lost through faults = $10,000\text{kwhrs} \times \text{VCR Rate @\$30pkwh} = \$300,000$

Calculate Faults & Kilowatts saved

Reliability Improvement Cost = \$150,000

= VCR Positive project



2025-2030 Reliability Funding AER Approved

Note : SAPN has Asset Replacement Programs to mitigate asset failure contribution to reliability performance



CBD
Cable replacement \$55M



Underlying \$50M



Rural Long
Supply Restoration \$4.3M



Low Reliability Feeders
\$9.1M



Worst Served Regions
\$13.5M



Resilience (Emergency Generators)
& Bushfire Safety
\$6M