

# Enabling a smart electricity grid



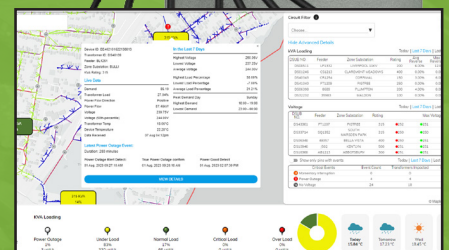
- *Ensure grid reliability and safety*
- *Improve grid efficiency and capacity*
- *Control DER assets*
- *Track CO2 savings*

The electricity grid is struggling to maintain reliability as customers adopt new DER technologies and electric vehicles. Edge Zero's cloud-based monitoring platform utilizes live data from low cost, simple to install transformer monitoring instrumentation to provide a smart digital twin of network power flows and asset performance.

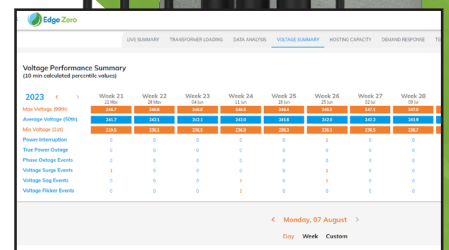
Our Data analytics software enables networks to utilize legacy infrastructure more efficiently to meet the demands of a smarter grid.

Edge Zero's grid monitoring and control platform enables:

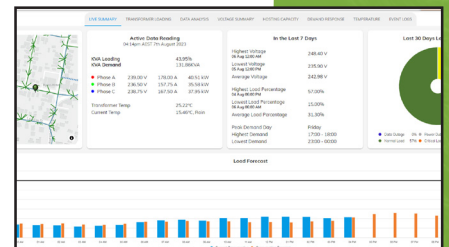
- improved power quality management, operating efficiency and cost savings;
- targeted kWh and CO2 savings through asset load monitoring;
- circuit level DER hosting capacity analysis and long term network planning capability;
- real time control of DER assets based on dynamic network hosting capacity analysis;
- Peak demand tariff setting and nodal pricing based on asset level usage data.



**Live grid model & transformer monitoring**



**Voltage profiling & quality of service**

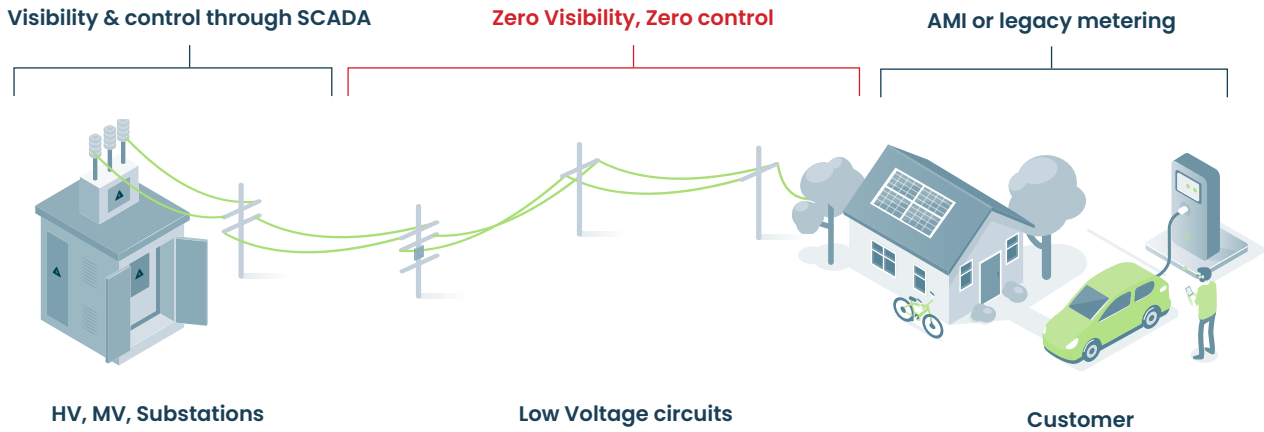


**Load profiling, forecasting & system reliability**



**Power quality, energy flows, energy losses**

# Challenge: Lack of last mile grid visibility



## LV networks have the most challenges

- No live monitoring or operating data
- Increasing fault and power quality issues

## Aging network

- Peak customer usage increasing with EV and electrification
- Overloading causes safety issues

## Inadequate grid capacity

- Network capacity THE key constraint on DER/VPPs
- Inadequate transformer sizing and thermal capacity to cope with rapid increase of PV and EV

## AMI meters do not solve the issue

- High barrier to entry
- High customer ratio required for full visibility
- High real-time data processing costs

## Future Edge of Grid Customer Challenges

- PV Systems
- BESS (Batteries)
- EV Chargers
- Controllable Loads
- Demand Response
- Virtual Power Plants
- Flexible Tariffs
- Commercial EV fleets
- Community batteries
- Commercial charging stations

*“Ratios of 1 LV distribution transformer monitor to every 50 customer connections, provides improved grid efficiency and DER readiness”*

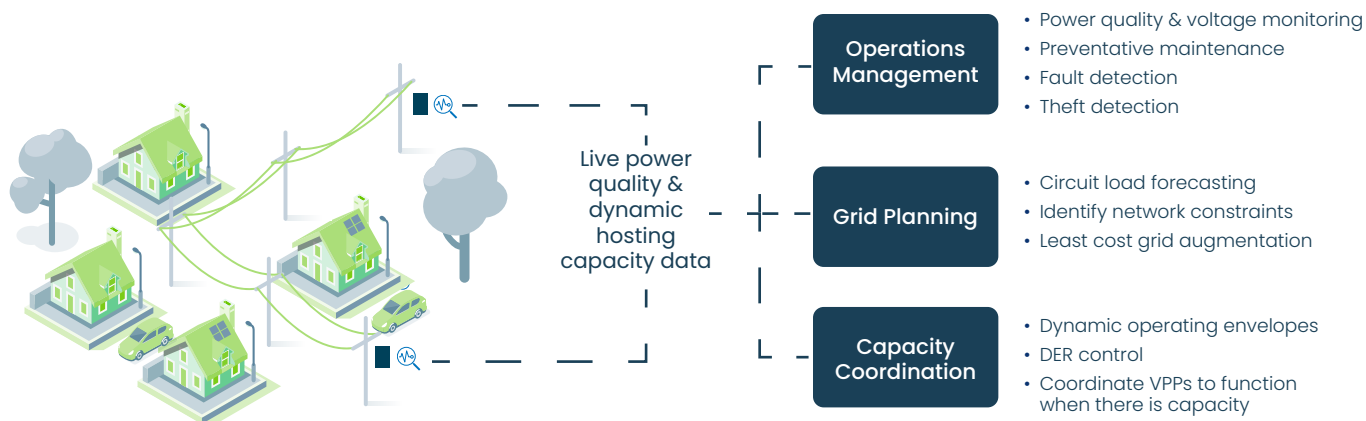
*NSW Network  
Regulatory Submission*



# Edge Zero solution

Edge's network management platform uses real-time data from patented, low cost, simple-to-install monitoring devices that are located on pole- and pad-mounted transformers across the LV grid.

Edge monitors deliver comprehensive, 1 minute power quality data and real time safety alerts over 4G or LoRaWan mesh network, using military grade data encryption protocols.



Edge Zero's real time, circuit level data is key for improved operational performance, grid planning and live DER control.

## Performance & Efficiency

- Energy profiling & loss reporting
- Optimized voltage reporting & reduced energy served analysis
- Live and historical grid performance data
- Custom reporting on CO2, energy losses & voltage retapping impacts
- Prioritized reporting on PQ events, compliance breaches and risk indexing

## LV Monitoring Hardware features

- Fast, easy, live installation. No customer outages on installation
- IP67 rated for pole top and pad mounting installation
- 15+ year asset life
- 100 - 520V rated voltage supply
- Monitors 4000A RMS
- Polyphase installation. Supporting 1, 2, 3 phase distribution transformers
- 4G internal modem and LoRaWan mesh.
- External high gain antenna for improved remote and regional signal

## Integrations

- Historical data API from existing in field devices
- Operates as stand alone environment or Integrate with ADMS & GIS grid models
- RESTful API data to existing systems
- DNP3 Virtual RTU environment for SCADA integration

## Out of the box ready

- LV monitors provide automated reporting from first device installed
- Cloud service solution. No on-prem server infrastructure required
- Scaled solution no minimum deployment size



# Commercial success

Edge has supply agreements with 65% of distribution utilities in the Australian National Electricity Market, and a partnership with the Federal Government use Edge monitoring and DER control technology in the roll-out of dynamic EV charging stations.

Edge provides long term network monitoring and platform deployments to major utilities in the Philippines and Thailand. Pilot deployment programs are underway with major utilities in the UK and Brazil.

Edge's distribution partnerships with Wesco in North America provides network monitoring services to municipal and co-operative power authorities.

# Program sizing and financing

Based on customer feedback, the optimal average long-term roll-out of Edge monitoring devices will be a ratio of one device per 50 households.

Edge provides customers with flexibility to structure the most suitable purchasing plan combining:

- Up front capital investment in Edge monitoring equipment and platform deployment, inclusive of all annual software platform charges and monthly data service charges for up to 10 years; and/or
- A fully funded hardware and platform deployment with long term monthly Monitoring as a Service charges that cover equipment, communications and data costs and lifetime warranty.

# Next steps

Edge has an established pilot program structure for customers, which includes trial installation and technical due diligence to determine program scope and roll-out. Edge also provides assistance with regulatory investment submissions where requested.

