

Vampire Load Detection to Promote Energy Savings

OBJECTIVES

A large mining site sought to gain visibility into their equipment operations to reduce excessive energy consumption across its multi-zone campus. The site contained many distributed energy resources and was pursuing improvements in power quality and carbon abatement.

APPROACH

To address the issue of excess electricity consumption when no personnel were on site, Edge Zero deployed an advanced LV monitoring solution at a site and sub-circuit level.

- **Monitoring:** Installed two Edge Zero Energy Monitors across key campus zones to monitor up to 10 circuits with analytics visualization via the EdgeConnected[™] platform.
- Identification of Malfunctioning Equipment: EdgeConnected recognized failing power factor correction equipment and an underperforming solar inverter.
- **Baseline Visibility:** Once isolated problems were resolved, the facility identified a further 45% of energy consumption occurring outside of operating hours due to vampiric loads.

RESULTS

EdgeSensors, paired with EdgeConnected, delivered immediate insights and measurable financial impact.

- **Corrective Actions:** Resolved issues pertaining to malfunctioning and underperforming equipment.
- **Targeted Shutdowns:** Identified high baseline load on the main campus during non-operating hours, enabling corrective action via targeted shutdowns of unnecessary overnight energy consumption.
- Energy Savings: Achieved annual savings of €20,000 in avoidable energy spend.
- Long-term Value Generation: Estimated Net Present Value (NPV) of €80,000 based on 5 years of savings and power quality benefits.

AT A GLANCE

Challenges

- High Energy Costs
- Minimal Visibility
- Poor Power Quality
- Malfunctioning Assets
- Vampire Loads

Benefits

- Identified Under-Performing Assets
- Fast Corrective Actions
- €20,000 Annual Savings
- Power Quality Resolution
- Data-Driven Load Management

The ability to detect equipment malfunctions and hidden overnight loads immediately turned into hard savings.

With minimal hardware, operators gained real-time transparency into the site's energy footprint. This provided actionable insights around equipment performance and base load curtailment opportunities that translated directly into energy cost savings.

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hello@edgezero.co