

**ABOUT US**

## Who We Are

Grid Dynamics Pty Ltd is a specialist electrical engineering consultancy established in 2025, based in Queensland, Australia. Founded by a Registered Professional Engineer with over 18 years of experience across mining, heavy industrial, oil and gas, power equipment, and infrastructure sectors, Grid Dynamics provides clients with direct access to senior-level engineering expertise — without the overhead and complexity that often comes with larger firms. When you engage Grid Dynamics, you work directly with an experienced engineer who understands your industry, your challenges, and the standards you operate under.

**CREDENTIALS & REGISTRATION**

## Professional Standing

RPEQ	CPEng	EngExec	FIEAust
Registered Professional Engineer of Queensland	Chartered Professional Engineer	Engineering Executive Engineers Australia	Fellow of Engineers Australia

**CORE CAPABILITIES**

## Engineering Services

<p><b>HV Substation Design &amp; Assessment</b></p> <p>Design and assessment of HV substations from 11kV to 132kV+, including SLD development, equipment specification, layout design, and condition assessments.</p>	<p><b>Protection Engineering &amp; Coordination</b></p> <p>Protection coordination studies, relay setting calculations, and protection scheme design ensuring selective, reliable fault clearance compliant with network operator requirements.</p>
<p><b>Arc Flash &amp; Arc Fault Containment Studies</b></p> <p>Arc flash assessments and arc fault containment studies for mining, industrial, and healthcare facilities, including venting and room containment analysis.</p>	<p><b>Power System Studies</b></p> <p>Short circuit fault analysis, load flow studies, fault level analysis, and voltage drop calculations for mine-site and industrial power networks.</p>
<p><b>Earthing System Design</b></p> <p>Earthing system design and calculations per AS/NZS standards and IEEE guidelines, including step and touch potential analysis and earth grid design.</p>	<p><b>Mine Power Distribution &amp; Dragline Systems</b></p> <p>Design of mine-site power distribution networks including dragline and electric shovel power supply systems, trailing cable systems, and switchyard interfaces.</p>
<p><b>Cable Sizing &amp; Selection</b></p> <p>Cable sizing calculations to AS/NZS 3008, covering current carrying capacity, voltage drop, short circuit withstand, and earth fault loop impedance.</p>	<p><b>Technical Documentation &amp; O&amp;M; Manuals</b></p> <p>As-built documentation, operation and maintenance manuals, engineering reports, and technical specifications for complex electrical infrastructure.</p>

**PROJECT EXPERIENCE**

## Selected Projects

---

**MINING — BOWEN BASIN COAL**

### 66kV Power System Extension for Supply Redundancy

SME and Project Manager for the design and delivery of an additional 66kV power feed to provide supply redundancy for an operating coal mine. The project spans multiple mining lease holders and requires coordination with the electricity utility. Scope includes repair of existing infrastructure, overhead line and underground cable testing and commissioning, protection studies, and protection setting modifications.

---

**MINING — BOWEN BASIN COAL**

### Protection & Arc Flash Studies — Geological Stabilisation Equipment

Protection studies and arc flash assessments for critical electrical equipment deployed to stabilise geological conditions at a Bowen Basin coal mine, enabling longwall mining to safely recommence operations.

---

**MINING — BOWEN BASIN COAL**

### Earth Leakage Fault Investigation — Nitrogen Generation Plants

Site investigation of persistent earth leakage faults on nitrogen generation plant electrical systems. Root causes were identified on-site and a comprehensive report with a prioritised remediation action list was delivered.

---

**MINING — ELECTRICAL INFRASTRUCTURE**

### RPEQ Audit, Arc Flash & Containment — 11/1kV Underground Substation

RPEQ-certified AS5368 audit, arc flash study, and arc fault containment study for an 11/1kV underground substation serving a specialist mining equipment overhaul facility.

---

**OIL & GAS — SOUTHERN QUEENSLAND**

### AC/DC Power System Design — Transportable Closed Circuit Workover System

Full AC and DC power system design including short circuit fault analysis, load flow studies, and control system design for a generator-fed transportable closed circuit workover system for an oil and gas operator in Southern Queensland.

---

**POWER EQUIPMENT — MAJOR OEM**

### Electrical Engineering & Drafting Services — Power Equipment Manufacturer

Provision of specialist electrical engineering and drafting services to a major Australian power equipment manufacturer, supporting design and documentation requirements across equipment development and delivery programmes.

---

**RESEARCH & HIGH VOLTAGE**

### HV Earthing Design — UQ Plasma Fuel Project

Earthing conductor sizing calculations for the University of Queensland Plasma Fuel project high voltage power system. The system uses capacitor banks to store and deliver DC high voltage for plasma generation and electromagnet operation.

---

**INTERNATIONAL — PACIFIC**

### Generation Plant Expansion — Fiji Water Manufacturing Facility

Tendering support for a major equipment OEM evaluating the addition of a new generation plant to the Fiji Water manufacturing facility in Fiji.

---

**UTILITIES & INFRASTRUCTURE**

**As-Built Documentation & O&M; Manuals — National Telecommunications Rollout**

Preparation of as-built documentation and operation and maintenance manuals for a national rollout of telecommunications infrastructure across multiple sites.

**HEALTH — BRISBANE**

**Arc Flash & Containment Assessment — Hospital Transformer & 11kV RMU**

Arc flash assessment and arc fault containment study for a Brisbane hospital installing a new transformer and 11kV ring main unit within an indoor room. Detailed analysis of arc fault venting requirements and building containment solutions was provided to meet safety and building standards.

<b>Email</b> info@griddynamics.com.au	<b>Phone</b> 0429 789 155	<b>Location</b> Queensland, Australia	<b>ABN</b> 74 684 563 595
--	------------------------------	--	------------------------------