

# Electrical, Instrumentation and Controls Engineering

Capability Statement



**BG  
&E**  
RESOURCES

# Acknowledgement of Country

**BG&E Resources acknowledges Aboriginal and Torres Strait Islander peoples as the first peoples of Australia and the Traditional Owners and Custodians of lands and waterways on which we work and live.**

**Our operations are conducted on the traditional lands of the Whadjuk people of the Noongar nation in Perth, the Bindjareb people in Mandurah, the Larrakia people in Darwin, the Kurna people in Adelaide, the Gurambilburra Wulgurukaba, Bindal, Nywaigi, and Gugu Badhun peoples in Townsville, the Turrbul and Jagera peoples in Brisbane, the Awabakal people in Newcastle, the Gadigal people of the Eora nation in Sydney, and the Wurundjeri and Boon Wurrung peoples of the Kulin nation in Melbourne.**

**We honour the wisdom of, and pay respect to, Elders past and present, and we acknowledge the cultural authority of all Aboriginal and Torres Strait Islander peoples across Australia.**

**We also acknowledge the vital contribution made by our Aboriginal and Torres Strait Islander employees and we thank those who have guided our approach and generously shared their insights.**

Image: Aboriginal artwork created by Jayda Sebire (Indigenous Artist and former BG&E Resources People and Culture Assistant).  
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# Electrical Engineering and Design for Asset Optimisation

BG&E Resources (BGER) is a multidisciplinary engineering, design, project delivery and advisory consultancy, providing technical solutions for clients in the Resources, Energy and Industrial sectors.

With offices on the East and West coasts of Australia, we are majority owned by our employees and committed to helping clients decarbonise in a net zero economy.

Our fit-for-purpose engineering solutions enable mining and raw material proponents, energy and water utilities, and port authorities to optimise the performance of their assets, minimise operational disruption, improve safety and mitigate risks.

BGER's proven approach to deliver schedule and cost benefits through clever engineering and true collaboration is what sets us apart.

Our people pride themselves on providing smart and sustainable solutions to complex engineering problems; and importantly, on being great people to work with.



# Technical Excellence

**Our people are passionate about leveraging their technical ingenuity to solve complex problems.**

Technical excellence is the bedrock of our business. It drives our people and propels the outcomes that we provide for clients, communities, asset owners and operators, and financiers.

Our dedicated professionals and subject matter experts focus on understanding our clients' business objectives, their desired project outcomes, as well as the latest industry research for the sectors in which we operate.

### A Premium Client Experience

The success of our project work depends on leveraging the best expertise of our people. That's why we allocate the most qualified professionals to help realise our clients' development vision and bring their projects to life.

Our work is underpinned by strong engineering design principles, industry-leading technology and pragmatic advice to deliver exceptional outcomes, every time.

This approach provides the following benefits:

- Ease of understanding of regulatory frameworks
- Efficient navigation through the development approvals process
- Protection and preservation of our cultural heritage, the environment and waterways
- Healthy, transparent and trusted relationships are established with stakeholder groups
- Respectful liaison with Traditional Owners is undertaken
- Fair and equitable outcomes are achieved for First Nations' communities
- Project knowledge is retained, including lessons learned
- Innovation is embraced and deployed.

### Technical Leadership Team

The quality and excellence of our world and ability to deliver the best technical and cost-effective solutions for our clients is guided by our Technical Leadership Team.

Led by the most senior members of our business, this team facilitates learning and knowledge transfer, professional collaboration and mentorship to drive continuous excellence in our technical capabilities. It also encourages our people to perform to high technical standards and rewards staff for incorporating innovation into projects.

Image: Steve Ash and Kanishka Pathirana at Paraburdoo Train Load Out Facility, Pilbara WA.

# Safety is at the Heart of our Business

## Our diverse and culturally aware teams embrace safe work practices that are environmentally sound.

Safety is integral to everything we do at BG&E Resources. We care about our people, clients, and the communities in which we operate, and strive for zero harm in everything we do.

Health, safety and quality are embedded in our work practices, while heritage and sustainability are considered throughout the entire project life cycle.

We recognise the importance of continuously reviewing safety in design issues at all stages of a project, from investigation, design, construction, operation (including maintenance), closure and rehabilitation.

Exceeding regulatory obligations, we leverage a formalised Health, Safety, Environment and Quality Management framework that allows us to analyse and implement practical measures to mitigate risks.



### Leadership

- Understanding of client needs
- Technical Leadership Team governance
- Strong Chartered presence
- Adherence to Technical Standards & Regulatory Instruments
- Committed to Technical Excellence
- Striving for low-carbon impacts



### Systems

- ISO Accredited Quality Management System (QMS)
- Design Assurance
- Engineering Verification Procedures
- Safety in Design
- Net Zero in Design
- Risk Mitigation & Management
- Project Governance (Action Tracking, Monitoring, Performance & Auditing)
- Continuous Improvement (Lessons Learnt)



### Characteristics

- Client Centric
- Risk Adverse
- Reliable
- Accountable
- Innovative
- Simplification
- Community & Culture



Image: Lucy Nguyen at Cape Lambert Port Facility, Karratha WA.



Image: Indigenous peoples' hands. Copyright approved via Shutterstock.

# Respecting, Protecting and Preserving our Cultural Heritage

## Diversity across our workforce and our supply chain is vital.

Our clients trust in our ability to enhance their social license to operate, including through the provision of mutually rewarding cultural heritage consultation and management, healthy Indigenous partnerships, and ethical procurement from Aboriginal-owned and operated businesses.

Working with Traditional Owners, First Nations peoples, Indigenous Prescribed Body Corporates and Aboriginal Corporations, is seeded in early engagement as it enables our team to deliver benefits for today (across the life cycle of proponents' projects) and for future generations.

Early engagement underpins our approach to cultural heritage management as it enables us to understand the needs and desires of all stakeholder groups, as well as any existing Indigenous Land Use Agreements (ILUAs) which have been registered with the National Native Title Tribunal (NNTT).

We partner with highly experienced local archaeologists and ethnographic specialists to provide clients with access to an abundance of heritage site data, and to collectively undertake walk-throughs of proposed project sites.

From the Kimberley in the North to Esperance in the South of WA, across central Australia and along the Eastern seaboard – we engage with Traditional Owners and Custodians, Prescribed Body Corporates (PBCs), Aboriginal development corporations and First Nations communities to preserve their cultural heritage and when helping proponents and/or government agencies to deliver projects.

### Cultural Heritage Management Capabilities

- Stakeholder consultation and engagement to help Traditional Custodians of the land and Native Title Claimants to establish IULAs, registration to the NNTT and compensation frameworks (among others).
- Advice for proponents regarding the application of legislation including the Native Title Act 1993, Heritage Act 1972 (Aboriginal Cultural Heritage Bill 2021) and Repeal Bill 2023.
- Developing scopes for archaeological and ethnographic surveys.
- Indigenous business contracting (including teaming with Aboriginal-owned and Supply Nation-certified businesses to develop First Nations regional workforces).
- Capacity building (including coaching, mentoring and career pathway development, etc. for First Nations peoples).
- Reconciliation Action Plans.

### First Nations' Partnerships

We have a range of actions in place to increase Aboriginal and Torres Strait Islander employment and engagement in our business, to help First Nations communities become self-sustaining (current participation is approximately 1.5 per cent of our workforce and we are striving to increase that to three per cent by December 2025).

We proudly support Aboriginal and Torres Strait Islander owned businesses and have established a majority-owned Aboriginal company, TICS (WA) Pty Ltd (TICS). TICS is a NATA-accredited laboratory to ISO 17025, providing nondestructive testing (NDT) services.

Similarly, we have strategic partnering arrangements with several Aboriginal-owned businesses, including Karlayura Contracting, which provides design and construction support for clients.

We have also established a similar partnering agreement with i24s, an Aboriginal-owned and operated workforce company, providing security, civil works and commercial cleaning services for mine sites in remote locations across Australia, as well as for commercial premises in capital cities (their clients include BHP, Horizon Power and Cundaline Resources, among others).

Most recently, we also established a partnership with Pirrpala, a 100 per cent Aboriginal-owned and operated small scale project delivery provider.

Our partnerships also span the globe, specifically in China, for the procurement of equipment and professional services, including on Country inspections of fabrication, testing, compliance and design reviews.

### Reconciliation

Review our [Innovate Reconciliation Action Plan](#), [Aboriginal and Torres Strait Islander Engagement Strategy](#), [Human Rights Statement](#) and [Anti-Discrimination Policy](#).

# Electrical Engineering

**Specialising the design of electrical aspects of Resources, Energy and Industrial projects in both process and non-process infrastructure.**

We have a record of providing solutions that are cost effective and easy to build. Our consolidated experience draws upon our involvement in numerous projects where we have been instrumental in the development of process plants as well as industrial and commercial buildings.

We also lead in the production of maintenance and operational deliverables to maximise asset performance.

## Capabilities

- Power Generation
- HV Power distribution Design (Substations, Switchgear, Cables and Transformers)
- Power System Studies (Load Flow, Fault Levels, Protection, Motor Starting, Harmonics, Arc Flash)
- ETAP, PowerFactory, PowerCAD, Safegrid, SKM PowerTools (PTW), CDEGS
- Earthing Design
- Low Frequency Interference (LFI) Calculations
- Lightning Protection Design
- Temporary and Permanent Power Systems Design
- HV and LV Cable Calculations
- MCC and Switchgear Upgrades
- Transformer Specification and Selection
- Variable Speed Drives (LV and HV)
- Lighting Design
- Battery Energy Storage Systems
- Renewable Energy Integration (Solar, Wind)
- 3D Modelling
- Selection of Electrical Equipment for Hazardous Areas
- Civil Design of Substation Buildings and Transformer Compounds
- Non-Process Building Services



# Instrumentation & Controls Engineering

Delivering high-quality, fit-for-purpose Instrumentation & Controls designs – as part of our multidisciplinary engineering services – to help asset owners realise operational and process efficiencies.

BGER has an extensive background in industrial process automation and controls for small and large facilities.

We develop and implement control strategies using the latest technologies.

Our experts work with control systems and communication protocols for a range of process technologies.

#### Capabilities

- Instrumentation Design and Selection
- Datasheets
- Valve Selection
- Functional Safety (5 x certified Functional Safety Engineers)
- Functional Safety Lifecycle Management
- Safety Requirements Specifications
- Control Philosophy
- Functional Specifications
- User Requirements Statements
- Design of SIS, PLCs and DCS Systems
- Design of Process (OT) Networks
- Programming of PLCs and HMIs
- Historian and MES Systems
- Systems Integration
- PLC and DCS Testing & System Commissioning
- Experienced with Allen Bradley, Rockwell, Schneider Quantum M340 M580, PlantSCADA (Citect), ABB 800xA, Honeywell RTU, GE Fanuc
- Civil Design of Equipment Rooms



# Electrical & Controls Project Delivery

**Providing project delivery services across the life cycle to ensure the electrical and controls components are well integrated, clearly defined, effectively managed, controlled and commissioned safely to maximise asset operability and maintenance.**

Building on our engineering consulting expertise, we have developed a reputation for the successful delivery of projects under a range of models, including as an EPCM preferred delivery partner.

We also act as a single point of contact for our clients working as an EPC Contractor, Owners Engineer, Project Manager, Engineering Consultant or Commissioning Manager.

Our flexibility enables us to tailor the project delivery model best suited to your electrical and controls project needs.

## Capabilities

- Specialist Energy Team (Power Generation and Renewables)
- Electrical & Controls Project Management
- Electrical Design Feasibility & Option Studies
- Arc Flash Studies
- HAZID, HAZOP, LOPA & Electrical Safety & Operability
- Operation and Maintenance Support and Improvement
- Maintenance & Operability Documentation
- Electrical Equipment Repair Technical Support
- Electrical & Instrumentation Equipment Procurement Support
- Electrical Commissioning & Completions Support
- Specialist Team – Site Delivery





Images: East Rockingham Waste to Energy (ERWTE), Rockingham WA

## Project Phases

**Our Electrical team offers services throughout the project life cycle covering concept, PFS, FS, Detailed Design through to construction and commissioning support.**

**Capabilities**

- Concept Studies
- Pre-Feasibility Studies
- Bankable Feasibility Studies
- Front End Engineering Design
- Detailed Design
- Independent Review
- Construction Support
- 2D & 3D Design

# Projects





## Decarbonising Fortescue's Infrastructure – Early Engineering

Client: Fortescue

**We are helping Fortescue to deliver on its Decarbonisation Plan to eliminate fossil fuel use and achieve real zero terrestrial emissions across its Australian iron ore operations by 2030.**

BGER has been engaged to commence early engineering works to provide permanent power and supporting infrastructure to enable the electrification of mining equipment and assets across Fortescue's operations.

Our Electrical and Energy teams plan to work on electrification assets including HME battery electric fast charging facilities and in-pit power reticulation to HME plug-in assets. In addition, our Civil and Geotechnical teams are confirming the proposed laydown areas of the assets across Fortescue's sites.

## Energy Management Plan – Iron Ore Mine

Client: Undisclosed

**A leading mining company in WA engaged us to develop an accurate energy and power demand forecast for an iron ore mine site.**

**At the core of any sound decision making regarding energy is a Solid Energy Management Plan with accurate forecasts tied to relevant process data.**

To complete this plan, BGER took into consideration several proposed major plant and equipment upgrades. Our work enabled the client to better manage energy contracts, identify opportunities for demand side management and alternative energy supply technologies.

Our Energy team reviewed the existing energy forecast, LoM Plan, the PPA, obtained whole-of-site metered power demand data, and collaborated closely with the client's teams. This information was collated, analysed and integrated into a refined power demand and energy forecast.

This Energy Plan has increased the accuracy of the forecast and ensures alignment with the LoM.

Our client is now well positioned to make informed decisions on future plant upgrades, demand side management opportunities as well as on site generation and optimisation of third-party supply contracts

# ROM 3 & 4 Crushing Stations

Client: Roy Hill

To maintain required production levels, Roy Hill required a new crushing facility 6 km from the existing infrastructure.

## ROM 3 Crushing Station 4

BGER provided engineering services, from inception through to detailed design for a 25 Mtpa Crushing Station and 6.7 km Overland Conveyor including all transfer stations and tie-in to the existing plant.

The work included all aspects of EIC design, including the design of 33 kV reticulation to 2 new substations and the electrical, controls and instrumentation design including allowance for backup diesel generator connections to NPI building distribution.

## ROM 4 Crushing Station 5

BGER has undertaken the detailed design of the ROM 4 crushing station 5 facility. An evolution of the commissioned ROM 3 crushing station designed by BGER in 2020, the ROM 4 facility has an upgraded annual capacity of 34.1 Mtpa and has been designed to cater for larger haul trucks.

Structurally, the ROM 4 facility design is based on similar integrated supporting structures to ROM 3 facility, however the design has been evolved to utilise modularised large “building blocks” similar to the ship building industry.

The modules were designed to achieve compressed fabrication and construction programmes with a substantial reduction achieved in on-site man hours.

Our team streamlined all aspects of EIC design including:

- Single Line Diagrams
- Earthing Drawings
- Lighting Drawings
- GPO Layouts
- Cable Schedules
- Earthing Layout
- Process Control Logic Diagram
- Loop/Instrument Diagram
- GA - PLC Cubicle Layout
- GA - Communications Panel
- PCS Network Block Diagrams





Image: PBO Tertiary Hydrocyclones Plant - Pilbara, WA.

# PBO Paraburdoo Tertiary Hydrocyclones Plant

Client: Rio Tinto

**To increase the potential recovery of the Fines Further Processing Plant (FFPP), Rio Tinto sought future recovery of high-grade SOP of the operational life in the Paraburdoo TSF.**

BGER has executed the study for the proposed tertiary cyclone process plant upgrade at Paraburdoo.

There is a significant opportunity to recover alternate size range particles from future plant feed. Recovering this material will decrease plant per/tonne operation costs, increase production and reduce Life of Mine (LOM) Tailings Storage Facility (TSF) costs.

Installing this process infrastructure will also enable increased potential for future recovery of high-grade SOP that has been deposited over the course of the operational life in the Paraburdoo TSF.

The tertiary cyclone project aims to improve plant recovery, through improvement of fines production,

# Ultrafines Detailed Design WHIMS 1.5

Client: Roy Hill

**Ultrafine recovery is extremely important for incremental tonnage costs, grade quality and extending the mine lifespan.**

Due to the limitations of the current operation, an expansion to the existing plant was required. We provided engineering services for detailed design for a 25 Mtpa WHIMS plant expansion including all tie-in to the existing plant.

Our electrical team completed the design of 33 kV reticulation to one new substation and the EIC design including existing services relocations, lighting, CCTV, earthing and lightning protection systems.



Image: Ultrafines WHIMS 1.5 - Ginbata, WA.



Image: East Rockingham Waste to Energy (ERWTE) - Rockingham WA.

# East Rockingham Waste to Energy

Client: Acciona

**As Owner's Engineer, we have played a key role in realising this 300,000 tp/a diesel fired waste to energy facility.**

Now complete, the facility will deliver a cost-effective waste treatment solution and be a vital source of dispatchable renewable energy, whilst achieving 96% diversion of residual waste from landfill.

The facility is designed to receive and convert domestic waste from the local regional council to reusable energy to meet nominated environmental standards.

The design and construction of the \$500 M project was undertaken by Acciona. As Owner's Engineer, BGER has supported all aspects across detailed design and construction.

The plant will produce approximately 29 MW of power which will be exported into the grid from the site substation.

Through our multidisciplinary team of engineers, we identified and implemented a range of cost reduction initiatives while also providing robust technical oversight across the life cycle of the project.

# Crinum Scada Development Phase 1

Client: Mastermyne

**We have provided ongoing Control Systems services and SCADA services for the mine site.**

Crinum Underground Mine has undergone a recommissioning process to enable mining of residual coal reserves leftover from previous longwall mining operations.

BGER was engaged by Mastermyne as the Control Systems Integrator for the recommissioning and rebuilding of all required infrastructure to commence operations.

Our team provided additional capabilities on top of the control systems integration. This included electrical detailed design, working in multi-discipline projects and onsite commissioning management. This experience has given us the ability to understand our client's overall project requirements to assist a successful project outcome.



Image: Crinum Underground Mine - Lilyvale QLD.

# Onslow Iron Project

Client: Mineral Resources Limited (MRL)

## MRL is developing a 30 Mtpa transhipping operation at the Port of Ashburton servicing the West Pilbara region as part of the Onslow Iron Project (OIP).

We were engaged to develop a concept design for the port facilities of MRL's 30 Mtpa Onslow Iron Project at the Port of Ashburton eastern planning precinct. The concept design included:

- Haul Road
- Port landside civil and drainage works
- Lease lot pad for truck unloading, storage shed and NPI facilities
- Rock armoured revetments
- TSV loading wharf, approach jetty and abutment

As part of the concept design our team developed the necessary engineering documentation to support a Stage 3 Development Application submission to the PPA.

We also delivered the detailed design of the marine works for the port facility. The key marine infrastructure includes the following:

- Approach jetty trestle including access ramp and abutment
- Loading platform supporting a fixed TSV loader
- Mooring and berthing dolphins to safely secure the TSV for loading
- Berth pocket to -7m CD to accommodate TSV during loading
- BGER are now providing construction stage support to the OIP Project.



Image: Onslow Iron Project - Pilbara WA.



# Our Electrical Engineering Team



## Kanishka Pathirana Technical Director - EIC

Over 28 years' experience in EIC design, construction/commissioning support and management in consultancy/EPC/EPCM engagements. Kanishka's experiences spans across mining, mineral processing, underground mining, ports, water/road/rail, hydro/wind/solar power and BESS and building services in both greenfield and brownfield projects.

### Key Skills

- MV and LV Power Distribution
- MCCs and Switchrooms
- VVVF/SS/ RR Motor Starters
- PLC Infrastructure
- Lighting
- Lightning Protection
- Earthing and Arc Flash



## Rhys Ledger Discipline Lead - EIC

Over 17 years of experience with a demonstrated history of working in the infrastructure, minerals, and energy industries. Rhys has extensive experience in both Brownfields and Greenfields engineering scopes and has been intimately involved in all phases of project implementation including Study, Engineering, Procurement, Construction, Commissioning and Operations phases.

### Key Skills

- Project Management
- Remote Power Generation
- Power Conditioning
- HV and LV Design
- Process Control Design
- OT Network and Security Design
- Instrumental Design
- Hazardous Area Design
- Functional Safety Engineer (TÜV Rheinland)
- Procurement and Fabrication/ Construction Management
- Commissioning and Completions



## Stephen Brown Principal EIC Engineer

33 years of electrical engineering in power generation, mining and oil and gas sectors, in both design and operational support capacities.

Stephen has held technical leadership roles in mining, refinery, consulting, and was an Oil and Gas Technical Authority.

### Key Skills

- Power Generation
- Transmission and HV Distribution Systems
- Electrical Maintenance and Operations Support
- Brownfields Project Execution
- Hazardous Area Equipment Selection
- Electrical Safety in Design



## Leon Oriti Senior Project Manager

Over 9 years of experience in detailed electrical engineering design, project engineering, and project management. Experienced at managing electrical projects and teams completing a range of brownfields upgrades.

### Key Skills

- Project Planning and Development
- Overseeing Construction Planning and Execution
- Managing Project Controls – Cost / Schedule
- Stakeholder Engagement and Reporting



## William Tan Discipline Lead - Instrumentation and Controls

21 years in delivery of control systems, including design, programming, commissioning, and maintenance.

Industry experience includes food & beverage, robotics, manufacturing, mining & power. Commodities worked on include Gold, Copper, Iron Ore, Mineral Sands, Lithium, Mobile Machines and Stockyards.

### Key Skills

- Electrical Interfacing and Design with PCS/OT
- Communications and Cybersecurity Networks
- OT Infrastructure
- Instrumentation
- PLC Programming and HMI Configuration
- Project Delivery



## James Bristow Lead EIC Engineer (Newcastle)

Over 15 years of experience in electrical, instrumentation and control systems design and project management across a number of sectors including mining, water and light industrial. Able to lead engineering projects and provide engineering support to auditing, design, construction and commissioning.

### Key Skills

- HV/LV Power and Control Systems Design
- Power System Modelling & Calculations
- Protection Device Coordination & Settings
- New Design and Modification of Site Electrical Systems

# Our Electrical Engineering Team



## Toan Nguyen Principal Electrical Engineer

20 years of experience in the Oil & Gas (FPSO and Onshore Facilities), Mining (Alumina, Iron-Ore, Gold, Nickel, Cobalt, Vanadium, and Titanium-Oxide), Chemical, Mineral Sands, Water Treatment, Power Generation (Diesel, Gas, Solar and Wind).

### Key Skills

- Project Management
- Commissioning, Delivery and Handover Specialist
- Fabrication and Construction Support, Factory Acceptance
- Electrical Project Management
- HV and LV Electrical Design
- Process Control System Design
- Hazardous Area Design

## Rob Mondri Senior Project Manager

16 years of experience with robust technical knowledge in construction of electrical and control systems. He has successfully delivered projects in many roles in project management and design engineering across multiple industries.

### Key Skills

- Project Management
- Building Services
- Electrical Systems Power Systems
- Communications Networks
- PLC and SCADA Systems
- Business Intelligence Systems
- Industrial Process Plants

## Matt Mullins Lead Discipline Engineer (Queensland)

18 years of experience in mining, minerals processing, hydrocarbons, and general heavy industrial industries. His experience includes detailed design of LV and HV electrical systems, control and safety systems, instrumentation, hazardous area and systems integration. Matt's experience also includes project management / engineering and commissioning.

### Key Skills

- Detailed Design of Electrical, Instrumentation and Control Systems
- Power Systems from Low Voltage to 66 kV
- Hazardous Area
- Control and Safety Systems
- Systems Integration
- Commissioning
- Procurement and Package Management
- Functional Safety Engineer (TÜV Rheinland)

## Raffaele Rosa Senior Electrical Engineer (Queensland)

Over 10 years of experience in electrical, control system and instrumentation engineering with design, construction, and commissioning experience in various roles within the oil and gas industry. Raffaele is a RPEQ, FS Eng (TÜV Rheinland) certified and hazardous area competent.

### Key Skills

- Control System Development – PLC, DCS, SCADA
- Electrical and Instrumentation Design
- Site Commissioning
- Functional Safety Engineer (TÜV Rheinland). Application Area
- Safety Instrumented Systems
- Hazardous Area Classification and Design

## Jee Min Leung Senior Electrical Engineer (Queensland)

Over 10 years of experience in design and project management in the Oil, Gas, and Mining industries.

### Key Skills

- Detailed SCADA, PLC, DCS Design
- Control System Programming
- SIS Documentation
- Project Management
- Front End engineering
- Switchroom Design
- Power System Analysis (ETAP)
- Precommissioning
- Commissioning
- Functional Safety Engineer (TUV Rheinland)

## Leighton Brunn Principal Electrical Engineer

40 years of experience in delivering projects for power station, mining and refinery industries. Leighton has held key positions in engineering projects responsible for feasibility studies, tendering, estimating, detailed design, off site testing (FAT), construction support on site and on site commissioning.

### Key Skills

- Solar Power Generation
- Diesel and Gas Power Generation
- HV Overhead Lines and Power Distribution
- Switchyards and Substations
- Transportable Switchrooms, Motor Control Centres and Variable Speed Drives
- LV and MV SEL Protection
- PLC Control and Fibre Optic Communications

# Our Electrical Engineering Team



**Patrick Venaille**  
Senior EIC Engineer

40 years of experience in managing teams, projects & studies, operations, construction, and assets. He has a proven track record of contracts negotiations and management, and management of change within projects life cycle, excellent communication, analytical and presentation skills, passionate for safety and environment.

**Key Skills**

- Multidiscipline Engineering Projects, Design, Construction, Commissioning and Handover Management
- Asset Management Systems

**Brad Harvey**  
Principal EIC Engineer

20 years of experience representing national and international organisations. Notably Brad has been the Lead EIC Engineer for the Roy Hill Crushing Station 5 Project and Pilbara Minerals Pilgangoora WHIMS Project.

**Key Skills**

- Electrical Detailed Design
- Feasibility and Pre-Feasibility Studies
- Large Scale Capital Cost Estimates
- Planning and Contract Management

**Peter Lee**  
Principal EIC Engineer

16 years of experience in designing electrical and control systems for mining and mineral process industry with specialist capabilities for the gold mining industry including elution and electrowinning systems, kilns and heaters.

**Key Skills**

- Electrical Detailed Design
- Estimating
- Construction
- Commissioning

**Sam Willesee**  
Lead Electrical Engineer

18 years of experience working in a myriad of industries and has designed many electrical installations for process plants and substations in the water, mining, and utility space.

**Key Skills**

- Grading Studies
- Power System Protection Design
- Relay Settings and Programming
- SCADA Interfacing
- Power System Modelling
- Arc Flash Studies
- MV Switchgear and Power System Design
- Project Management/Engineering

**Mark Lee**  
Lead EIC Engineer

15 years of experience in the development, design, construction and commissioning of Electrical, Instrumentation and Controls systems for projects within the mining infrastructure, materials handling, port infrastructure, transport, utility network, urban development, and building services industries.

**Key Skills**

- Distribution Systems
- Control Systems Design
- Power Systems Analysis
- Earthing System Simulation and Design

**Carmen Po**  
Senior EIC Engineer

Over 10 years of experience in designing, assessing and testing of high voltage earthing systems of transmission and distribution systems in both the electricity supply, water, gas and railway industries.

**Key Skills**

- Low Frequency Interference (LFI)
- CDEGS Earthing System Design and Safety Assessment
- Lightning Protection System Design and Assessment
- Earthing and Bonding in AC and DC Railway Systems
- Electromagnetic Fields Simulations and Safety Assessment

# Offices

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BG&E Resources is a multidisciplinary engineering, design, project delivery and advisory consultancy, providing technical solutions for clients in the Resources, Energy and Industrial sectors. We are majority owned by our employees, who are united by our purpose – together, we embrace innovation to solve complex problems, for today and future generations.

[bge-resources.com](http://bge-resources.com)

