



# Capability Statement

**Oil & Gas** Upstream | On & Offshore | LNG Processing | Operations & Maintenance

**Mining & Metals** Gold | Copper | Bauxite | Iron Ore

**Infrastructure** Plants | Refineries | Terminals | Pipelines

**Energy** Power Generation | Distribution | Transmission

**Renewable Energy** Hydro | Solar | Wind | Geothermal | Battery Storage

**Chemicals** Petrochemicals | Refining Storage | Dangerous Goods

# Company Statement

CTE PNG is the majority Papua New Guinea owned joint venture company with CTE (Compliance, Training & Engineering) Australia.

The CTE Australia/CTE PNG joint venture combines deep local insights and engagement with vast international experience and global best practice.

CTE Australia was incorporated in 2014 with the vision of delivering specialist electrical and mechanical services throughout Australia, South East Asia and the Pacific. CTE Australia works alongside some of the world's largest organisations such as Bechtel, Shell, Newcrest, Chevron, Total, McDermott, Woodside, ExxonMobil, ConocoPhillips and Rio Tinto.

CTE PNG brings critically important local experience and a comprehensive understanding of electrical and mechanical services provision within Papua New Guinea's complex cultural, political, legislative, environmental and logistical landscape.

Leveraging international experience and global best practice CTE PNG is positioned as a leading specialist electrical and mechanical contractor to deliver major oil and gas, mining, power generation, transmission, distribution, renewable energy, infrastructure and petrochemical projects in Papua New Guinea and across the Pacific.

Our strategic objective is to expand the company's presence in PNG's resource and industrial sectors and to support the government's target of electrifying 70% of the country by 2030 through expanding power and energy infrastructure. Embedded in these objectives is our passion and commitment to training Papua New Guineans through our globally accredited electrical training courses.

Our success is built on producing comprehensive, high quality work in a timely manner, whilst maintaining a clear customer orientated focus and providing safe, reliable, innovative and cost-effective solutions for our clients.

Our reputation is built by adding value to each project and exceeding our client's expectations.



## Who We Are

Compliance Training & Engineering Papua New Guinea Limited (CTE PNG) is a leading Electrical and Mechanical Engineering service provider in Papua New Guinea. Our highly experienced team brings together local and international expertise resulting in global best practice that is fit for purpose. Our team consists of qualified engineers, project managers, supervisors, qualified technical trades personnel, consultants, auditors, inspectors and trainers.

The founders of CTE Australia have a long standing relationship with Papua New Guinea, starting in the early 90's in the extractive resource sector with OK Tedi and Porgera mines and in recent times Newcrest on Lihir Island. Their commitment to the country has significantly evolved since then with the establishment of the majority PNG owned joint venture company CTE PNG.

Key to the success of the joint venture is an uncompromising shared commitment to maintain the highest standards of operational and technical excellence.

## Mission Statement

We are committed to providing the best possible service for our clients. We exceed client expectations through constant innovation, world-class technology and training without compromising health, safety or the environment of our people and the communities where we operate. We embed the highest safety standards into our employees and work culture across all projects to achieve our target of zero harm in the workplace. We value sustainability, diversity and inclusion and pledge to be an ethical and socially responsible company. Our work maximises profits for our clients and improves community prosperity and well-being.

## What We Do

CTE PNG provides a turnkey solution integrating specialist electrical and mechanical services including Front End Engineering and Design, Classification, quality assurance/compliance, construction and maintenance. We manage all aspects of small to large scale projects across a broad range of sectors:

- |   |                                 |
|---|---------------------------------|
| • Liquefied Natural Gas (LNG)                     | • Mining and Minerals           |
| • Petrochemical                                   | • Laboratories                  |
| • Compressed Natural Gas (CNG)                    | • Chemicals and Dangerous Goods |
| • Hydrogen  | • Grain Handling                |
| • Power Generation, Distribution and Transmission | • Food Processing               |
| • Water Infrastructure                            | • Offshore Facilities           |
| • Pharmaceutical                                  | • Manufacturing                 |

Through effective local engagement and trusted partnerships, we work closely with our clients to engineer, design, and maintain their assets, plants and facilities.

We provide the highest quality Australian (ASQA), PNG (NTC) and Internationally (IECEX) accredited electrical training & certification. We currently deliver 15 internationally accredited courses in-country and have successfully trained thousands of people in Papua New Guinea.

CTE PNG building on CTE's operational excellence and experience prides itself on being able to complete any project, anywhere and provide our clients with the ultimate value for money. When you engage CTE PNG you will gain a team that is constantly looking to deliver safer, faster and smarter outcomes to meet your needs. As each project is unique, we tailor our services to our clients needs to ensure the outcome delivered is fit for purpose. CTE provides clients with a team leader for the project or deliverable, creating a single point of accountability for our service. We integrate CTE PNG staff into the client's project team to ensure our specific skills are maximised and costs can be tracked to each deliverable. This allows us to provide clients with cost saving technical solutions that are ensured to work first time, every time.



CTE PNG has adopted the ZERO HARM focus of all scopes of work regardless of size. We promote work health, safety management as priority values in all phases of work undertaken.

Our Commitment	<p>As a leading provider of specialist electrical and mechanical services, we are committed to providing our customers with value-added and cost-effective solutions. We understand that effective risk management is critical to achieving results. At the same time, we prioritise the safety, health and wellbeing of our employees, the environment and the communities where we operate.</p> <p>We recognise the importance of compliance with evolving global standards and regulatory frameworks and work with our clients to ensure our activities align with their obligations.</p>
Safety and Security	<p>We are dedicated to the concept that all incidents resulting in personal injury, equipment or environmental damage are preventable. We promote work health/ safety and security management as a priority in all phases of work undertaken. We empower our people to choose the safest way.</p>
Good Corporate Governance	<p>We always act with integrity and maintain good corporate governance to ensure we operate efficiently, ethically and proactively manage risks. We take accountability for our actions and have zero tolerance for fraud and corruption. By maintaining our focus on prudent decision-making and effective risk management we maximise our performance and value for our clients.</p>
Sustainability	<p>Integral to our approach is our commitment to environmental and social responsibility. We infuse sustainability principles and practices throughout our company. We proactively identify potential environmental and social impacts and employ a range of mitigations and safeguards to: protect the environment, support climate change adaptation and resilience, preserve cultural heritage, uphold human rights, maintain and improve community well being.</p>
Diversity and Inclusion	<p>We foster equity, diversity and inclusion in our team because it provides access to a greater range of talent, experiences and perspectives, which in turn increases our potential for innovation and productivity.</p> <p>We are committed to “setting the bar high” and provide ongoing training to our employees to allow them to continually expand and develop their skills in the workplace. Investing in our people builds their talents and our success.</p>

# Services

## Industrial services

CTE PNG has extensive experience in providing comprehensive, multidisciplinary electrical and mechanical maintenance and improvement solutions across oil and gas, mining and minerals, chemical, water and power sectors.

- Shutdowns / Turnarounds
- Sustaining Major and Minor capital works
- Operations and facility management
- Maintenance services

## Electrical

CTE PNG is a licenced Electrical contractor with PNG Power Limited, Queensland Electrical Safety Office and holds a Mine Electrician certification under the Papua New Guinea Mining Safety Regulation Act.

Our electrical teams specialise in hazardous areas, high voltage and instrumentation services delivering works associated with plant operations, facility and mine shutdowns and maintenance to major and minor capital works projects. We can execute electrical works across Papua New Guinea as a standalone discipline or as part of a multidisciplinary work package.

At CTE PNG we understand the importance and complex nature of electrical maintenance activities within an operating environment and are able to work safely alongside simultaneous works and within asset production schedules.

Our delivery of design and field multidisciplinary electrical services allow our customers efficiency and reliability in their operating environments, ensuring minimal disruption to their asset production.



General Electrical



Hazardous Areas



High Voltage



Instrumentation



Substations



Power Transmission  
& Distribution



Lighting Systems



Control & Communication



Testing & Commissioning

### Mechanical

Our mechanical capabilities include maintenance of conveyors and conveyance systems, including idlers and motors. Heavy mechanical equipment maintenance, such as on crushers, screens, mills, ship loaders, stackers, reclaimers, compressors, process skids, boilers, turbines, flares and furnaces. Maintenance of above and below-ground piping systems, including on carbon and stainless steel.

### Construction & Project Management

CTE PNG provide a turnkey solution to your construction and project management requirements from front end engineering and design, project delivery and management to commissioning and handover. Our team consists of highly experienced engineers, qualified technical trades personnel, supervisors, project managers and human resourcing power for any size project in the following areas:

- Electrical and Mechanical Design (IPNG & RPEQ)
- Equipment Selection and Procurement
- General Electrical, High Voltage, Hazardous Areas and Instrumentation
- Electrical and Mechanical Commissioning
- LV/HV Testing
- Condition Monitoring, Isolation, PLC, Drive, SCADA and HMI systems
- Instrument Commissioning, Calibration and Validation
- General Electrical Installations, Maintenance and shutdowns
- Earth Grid Installation
- Cathodic protection

### Mining Operations

CTE PNG's turnkey mining capabilities include open cut surface operations. We have over 100 machines and operators in our international fleet ready to be deployed when required. Our earthmoving equipment includes; Haul Trucks, Off Road Trucks, Water Trucks, Backhoe, D6 Dozers, Tracked Excavators, Wheeled Excavators, Graders, Tracked Loaders, Agricultural Tractors, Trench Fillers, Cable Trailers, Hammers, Hydraulic Screening Buckets, PD10 Piling Rigs.

### Engineering and Design

We offer a range of engineering services covering front-end engineering design, scope and feasibility studies. We specialise in the design of high and low voltage systems, direct current traction power systems, transmission lines, substations, earthing studies, cathodic protection and hazardous area design and classification.

We perform registered audits for large photovoltaic generation systems and also prepare Conformity Assessment Documents (CAD's) for hazardous area equipment. All CTE designs are fully compliant to Australian Design Standards and are IPNG and RPEQ certified if required.

### Drafting

CTE's multi-disciplinary building services drafting team has over 20 years of experience in the industry producing fast and accurate documentation on time, every time.

### High Voltage Services

CTE holds QLD Government accreditation to perform High Voltage Audits in accordance with the Electrical Safety Act. We provide qualified and highly experienced high voltage technicians in Cable Jointing and terminations, testing and commissioning. Our HV commissioning technicians are well equipped and experienced in all facets of cable fault location and HV protection systems.

### Services include:

- High Voltage Underground and Aerial Cabling and Terminations
- Installation of Underground Cables and Services
- Ring Main Units, Installation and Testing
- Installation and Testing of Transformers
- Design and Installation of Earth Grids
- Scheduled Maintenance of Transformers, RMU's Circuit Breakers, Protection Relays and Earthing Systems
- Performing HV Switching Operations Cable and Fault Identification
- Testing of HV Cables, VLF Testing
- High Pot and Ductor Testing of HV Equipment
- Transformer Testing and Commissioning, IR Testing, Oil Sampling, Protection Instruments, Turn Ratio Testing and Tap Changes
- Protection Relay's, Commissioning, Testing and Upgrading.
- HV Protection Relay Studies

### Testing and commissioning

CTE offer a wide range of on-site testing and commissioning services for all as-built systems. Delivering Factory Acceptance Testing (FAT), Site Acceptance Testing (SAT) and insulated rail and cathodic protection testing. We also perform vendor package EEHA, substation and switch room compliance inspections.

#### Services include:

- Electrical Test and Measurement Equipment (LV & HV)
- Temperature – Direct and Infrared
- Pressure – Pneumatic and Hydraulic
- Analogue and Digital Multimeters
- Clamp Meters up to 1000A AC/DC
- Digital Temperature Meters
- High Voltage Testing
- Hipot / VLF Testing to 150KV AC/DC
- Injection Testing
- Installation Testing (Earth, Loop, RCD)
- Insulated Mats
- Insulated Sticks
- Insulation Testing up to 10,000V
- IR Thermometry
- Micro-ohmmeters
- Phasing Stick Testing
- Portable Appliance Testing
- Power Quality Analyser single or 3 phase
- Pressure Transmitters
- Process Instrumentation/Calibrations
- Relay Testing
- Substation Testing
- Thermal Imaging

### Hazardous Areas

Our Hazardous Area electricians and instrumentation technicians are trained and qualified under EEHA (AS/NZ), IECEx CoPC, & CompEx schemes. CTE holds Queensland Government accreditation to perform High Voltage & Hazardous Area Audits in accordance with the Electrical Safety Act and under the International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres (IECEx). All CTE audits are prepared in accordance with the relevant international and national-based electricity legislations, regulations and standards.

CTE PNG recognise that safety is critical in all industries and a driver for all operators and their respective projects. Therefore, quality of work and attention to detail is paramount.

Our highly experienced team are leaders in the industry and work with our clients to ensure a highly compliant Ex installation. In order to get there, our range of services can be tailored to meet the needs of our customers.

We have extensive experience in mining and minerals processing, oil and gas, petrochemical, power generation & distribution and materials handling sectors, providing the highest quality Hazardous Area services.

#### Services include:

- Hazardous Area Classification & Design
- Ex Equipment Selection, Verification & Procurement
- Hazardous Area Audit & Verification Dossiers
- Initial Detailed & Periodic Inspections
- Installation, Maintenance & Testing of Ex equipment
- Remediation & Rectification Services
- Ex Repair & Overhaul Services of Certified Ex equipment
- Digital Software Technology Solutions
- E&I Quality Assurance & Compliance
- Ex Accredited Training & Awareness Solutions

### Digital software technology solutions: CTE iplant

CTE has engineered an integrated digital hazardous area audit and inspection software tool.

CTE iplant is a cloud-based software system built specifically for managing hazardous area compliance dossiers and equipment inspections. Designed to be used in all types of hazardous zones from new projects to existing installations; from oil and gas projects, petrochemical facilities, service stations, mine sites and refineries.

CTE iplant offers an end-to-end digital platform containing your site Verification Dossier.

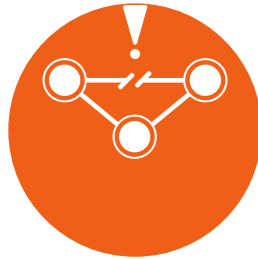
The paperless Verification Dossier is able to compile all required site documentation applicable to AS/NZS & IEC 60079.14 and AS/NZS & IEC 60079.17 including Equipment lists, Defect lists, Inspections Reports, Audit Reports, Classifications, Certificates, Calculations & Competencies of personnel. Combined with a Ex compliant tablet Hazardous Area Inspectors can carry out all grades of inspections in the field using the CTE iplant platform. Once complete your site personnel will have access to their “live” Verification Dossier online and will be able to view, amend, export data and generate future Hazardous Area Inspection and verification Reports.

This system also has a full range of Safe Work Method Statements and risk assessments available online. CTE iplant can be adapted to fulfil the complete equipment register requirements of your site's assets.

This innovative system proudly engineered and developed inhouse at CTE offers your site, plant or facility the complete hazardous area solution to maintaining a compliant Site Verification Dossier.

### Power system studies

We offer the full suite of LV and HV power system studies including, but not limited to:



Fault Studies



Local Flow Studies



Arc Flash Analysis



Protection Studies



Harmonic Analysis

Our system studies are available for any stage of plant life, whether it be FEED, Detailed Design, Upgrades or End of Life extensions. With tailored reports suited to your particular requirements, we will be sure to provide a result that is suited to your needs.

### Dangerous Goods

CTE PNG holds the Australian (ASQA) and International (IECEX) accreditations in Classification and Design. We can provide a holistic assessment of your workplace because CTE PNG is accredited to assess to your workplace to relevant Legislation, Standards and Codes of Practice for the Storage and Handling of Dangerous Goods and to provide Hazardous Area Classifications.

CTE PNG services cover the following areas from design conception through to operation and ongoing compliance inspections:

- Petrol Stations
- Medical Facilities
- Laboratories
- Industrial Facilities
- Food Processing
- Education Facilities
- Retail
- Bulk Storage and Transportation
- Minor Storage
- Mine Sites
- Construction Sites



### Training

CTE PNG through CTE Australia is an (Australian) Nationally Registered Training Organisation (RTO 41014), IECEX Recognised Training Provider (RTP) and an IECEX Certified Body under the Certificates of Personal Competency (CoPC) Scheme with the International Electrotechnical Commission (IEC) System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres in the delivery of accredited & non-accredited electrical training and certification of personnel.



Our trainers are qualified to Certificate IV level in Workplace Training and Assessment (at a minimum) and hold every competency they are to deliver. Our trainers are practicing professionals in all facets of Electrical and Mechanical Engineering, Hazardous Areas, High Voltage and Instrumentation. We are proud to deliver exceptional quality training and work hard to ensure we maintain our reputation for excellence.

Our training can be delivered at your site or premises, or at any of our training locations around Papua New Guinea, Australia and Malaysia. We will deliver our training at any time of day or night, above or below ground, on or offshore to coordinate with your workforce and shift arrangements as required.

# Courses



## Electrotechnology Electrician

Gain the skills to interpret electrical drawings, develop circuits, install and maintain electrical components, wiring, equipment and systems in residential and commercial applications. Our trade teachers and tutors will help you understand the theoretical and practical aspects of electrotechnology to support your success. This course fulfils the technical requirements for you to apply for your electrical contractor licence and become a trade-qualified electrician. Completion of your electrical apprenticeship will put you on the path to further training and licencing opportunities.



## Installation and Maintenance of Electrical Equipment in Hazardous Areas (EEHA)

This course is intended for electrical workers, technicians and engineers involved with installing and maintaining electrical equipment in hazardous areas. It covers basic principles of Hazardous Area classification, protection techniques, inspection procedures, installation techniques and breakdown and maintenance procedures, with theory and an emphasis on practical exercises and inspections.



## High Voltage Isolation and Access - Switching Operator

This course is for electrical workers, engineers and authorised persons working with HV switchgear in power stations, industrial facilities and networks. Emphasis is placed on practical testing for dead, phasing out, applying earths and switching exercises performed at our facility in Brisbane or on the client's HV equipment. Participants are also taught switching theory, the responsibilities of the permit recipient and member of a work group.



## Hazardous Area Classification and Design

This course is intended for electrical workers, technicians and engineers involved with installing and maintaining electrical equipment in hazardous areas. It covers principles and application of Hazardous Area Design for the various protection techniques and classification for both Gas and Dust environments using practical exercises.



## High Voltage Cable Jointing

This course covers the installation and maintenance of de-energised high voltage underground polymeric and paper insulated cables covering the jointing, terminating, repair and replacement of cables. It includes the isolation of systems and circuits, the procedure of issuing/accepting electrical access permits, the undertaking of pre-commissioning and/or re-commissioning tests and the updating of system data/maintenance records.



## Conduct a Conformity Assessment Document (C.A.D)

This course is intended for electrical workers, technicians and engineers involved with installing and maintaining electrical equipment in hazardous areas. It covers principles and application of Hazardous Area Design for the various protection techniques and classification for both Gas and Dust environments using practical exercises.

**IECEX Scheme for Certification of Personal Competencies (CoPC)**  
**ExCB & IECEX Registered Training Provider (RTP)**



CTE Australia is an IECEX recognised training provider (IECEX RTP) and an approved IECEX Certification body. IECEX Certificates of Personnel Competence are only issued by approved IECEX Certification Bodies (ExCBs). We offer a wide selection of IECEX scheme training courses and schedules under their Recognised Training Provider Program and certification scheme.

The IECEX Certified Persons CoPC Scheme provides the global Ex industries with a single system for the assessment and qualification of persons meeting the competency prerequisites needed to properly implement the safety requirements based on the suite of IEC International Standards covering explosive atmospheres, e.g. the IEC 60079 and IEC 61241 series of standards.

Ranging between one and seven days, sessions include a combination of theory and practical training on real equipment to provide hands-on experience in the following:

**Ex 001:** Apply basic principles of protection in explosive atmospheres

**Ex 002:** Perform classification of hazardous areas

**Ex 003:** Install explosion-protected equipment and wiring systems

**Ex 004:** Maintain equipment in explosive atmospheres

**Ex 005:** Overhaul and repair of explosion-protected equipment

**Ex 006:** Test electrical installations in or associated with explosive atmospheres

**Ex 007:** Perform visual and close inspection of electrical installations in or associated with explosive atmospheres

**Ex 008:** Perform detailed inspection of electrical installations in or associated with explosive atmospheres

**Ex 009:** Design electrical installations in or associated with explosive atmospheres

**Ex 010:** Perform audit inspection of electrical installations in or associated with explosive atmosphere

An IECEX Certificate of Personnel Competence demonstrates to the International Ex industry that a Certified Person has been found to operate procedures that provide confidence that the work undertaken complies with IECEX requirements and with the requirements of the relevant IEC Standards.

Our internationally recognised training covers the selection, design, inspection, installation, maintenance, repair, overhaul and reclamation of explosion protected equipment and installations and can provide a pathway to the IECEX Scheme for Certification of Personnel Competence.



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