



GLOBAL POWER

High Voltage
Specialists



Capability

Global Power has experience and expertise in a number of key high voltage and associated disciplines including transformer management, Gas Insulated Switchgear (GIS) assembly, high voltage plant, civil and structural services, primary electrical construction, secondary assembly/wiring and testing/commissioning services.

Our satisfied customers include Powerlink, Transgrid, Country Energy, Verve Energy, Loy Yang Power Station, Bilfinger Berger, GDF Suez & Western Power and equipment suppliers such as Siemens, Hyundai Heavy Industries, Hyosung Corporation, ABB, Alstom, VA Tech EBG, VA Tech Elin, Wilson Transformers, Pauwels Trafo, Trench, JST Transformer, Fortune Electric, Schneider and Areva.

We have undertaken works across Australia, from capital cities and confined work spaces to remote rural areas with unique logistical issues. We have the expertise to cope with the harshest terrain and working conditions.

Global Power has Electrical Contractors Licences to undertake related works across Australia. We also hold a current Building Registration Licence.

Global Power holds a variety of insurances including Public Liability, Workers Compensation, Corporate Travel, Construction and Commercial Motor Vehicle Insurance. All relevant policies are available to clients upon request.

Staff

Global Power has an experienced staff comprising core full time employees, long-term sub-contractors, apprentices and contract consultants. We provide a productive working environment and maintain the skills of our workforce through formal training and on the job skills development. Our support of apprentices and

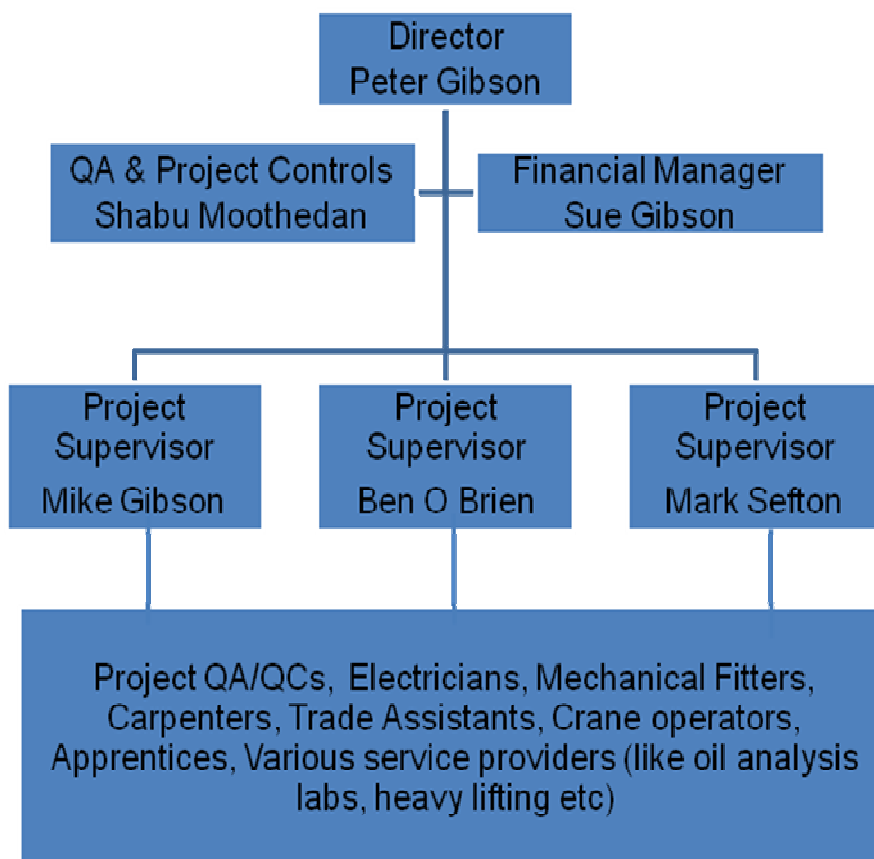
work experience placements demonstrates our strong commitment in the energy industry.

Our Owner/Director has over 23 years utility industry experience - including field based construction and specialist technical roles. This, together with a further 10 years of business experience with Global Power allows us to offer a complete range of specialist high voltage services with the backing of a detailed knowledge of the industry.

On February 2009, we appointed Shabu Moothedan as a dedicated Quality Manager to strengthen our Quality Management System.

We have a strong team of work force with specialised experience in installation and testing of Power Transformers, switchyard equipment and Power distribution systems

Global Power's company structure is shown below.



Transformer Management

Global Power specialises in transformer management from delivery to end of life. We can provide coordination of site delivery, full assembly/supervision, partial assembly for storage, oil treatment and filling under vacuum, pre-commissioning, functional/electrical testing and client handover.

We have an extensive reference list of transformer assembly, testing and refurbishment from 5 to 1500MVA and 11 to 500kV for a large number of transformer manufacturers and over 180 transformers installed.

We provide condition assessment services including oil/electrical testing, refurbishment and disassembly for disposal as required. We undertake these works under all relevant environmental policies and regulations, together with our own stringent policies and procedures.

We are willing and able to have our staff attend specialist factory based training/accreditation courses to allow us to provide installation and supervision services to manufacturers and utilities. We currently have staff that are fully accredited by Wilson Transformer Company, VA Tech EBG and VA Tech Elin.

We have capability to perform a complete refurbishment of power transformers from de-tanking the windings, core & frame for internal inspections and repairs.

Gas Insulated Switchgears

Global Power has up to date experience in site assembly of Gas Insulated Switchgears as per Australian Standards. We can provide coordination of site delivery, full assembly, Cabling, SF₆ Gas filling, pre-commissioning, functional/electrical testing and client handover. Our GIS Site Assembly process includes the following:

- ✓ Check and cleaning of GIS foundation
- ✓ Drawing the Datum line
- ✓ Unpacking of accessories & Check the apparatus for any missing / damages
- ✓ Installation of basic unit & Installation of each bus bay units
- ✓ Measurements of contact resistance
- ✓ Welding of GIS Base & connecting of earthing wire
- ✓ Installation of Local Control Panels
- ✓ Control Cable wiring
- ✓ Gas Piping
- ✓ Exchanging of absorbent
- ✓ Evacuation and Gas filling
- ✓ Gas leakage test
- ✓ Measurement of moisture
- ✓ Operation test, sequential test, Withstand high voltage test for GIS
- ✓ Repair painting

Global Power owns all the required equipments for full assembly, Cabling, SF₆ Gas filling, pre-commissioning, and functional/electrical testing of GIS. This includes SF₆ Gas Handling kit contains SF₆ Gas cylinders, SF₆ Regulator, SF₆ detection device, Gas Reclamation Equipment, Manual handling equipment for gas cylinders, Dew point meter etc.

Global Power procedures for safe handling of SF₆ Gas with all required SF₆ Gas management forms as per AS2791 (Australian Standard for use and handling of SF₆ Gas in high voltage switchgears) successfully utilised in our previous GIS installation projects.

Civil and Structural Services

Global Power Services has extensive in-house experience in civil construction from simple foundations to complex transformer block/bunding systems and switch rooms.

Our building registration allows us to construct relay and switch rooms to contain secondary systems, switchgear, transformers and other indoor plant items. Using our highly skilled staff, we can undertake civil works requiring fine tolerances and exact dimensions.

We have the necessary formwork, sheebolt systems and knowledge of concrete methods to allow us to construct high quality high voltage equipment foundations, support bases and footings. Together with our knowledge of fencing, site surfacing, cable trenching and conduit systems, we are able to provide a complete range of civil services for substations and similar projects.

Primary Electrical Construction

Global Power is highly qualified to provide a wide range of primary electrical construction services from complex high voltage equipment installation and setup to steel fabrication and assembly works.

We have extensive knowledge of busbar systems - both stranded conductor and aluminium tube - including crimped/bolted connections and laminations/joints. This knowledge has allowed us to undertake the complete construction of a number of electrical substations.

We are able to supply and install extensive substation earthing systems including the underground grid, earth electrodes, lighting protection masts and equipment connections.

Primary plant assembly and installation is offered across an extensive range of substation equipment including circuit breakers, disconnectors, instrument transformers, transformers, capacitor banks, shunt/series/in-rush reactors, SVCs and other related busbar systems and circuit components.

We have extensive experience in medium voltage switchboards from a variety of manufacturers - both new technology and old oil/pitch filled equipment. We are able to install panels into switch rooms and make all inter-panel connections including primary busbars and secondary wiring.

We are also able to provide on-site project management and administration for large substation related projects as required.

Secondary Electrical Assembly

Our skills combined with our workshop facilities allow us to provide a wide range of secondary electrical services including panel fabrication, assembly and wiring.

Panel fabrication can be undertaken on-site or at our Malaga workshop. Off-site assembly can provide clients with opportunities to accelerate projects whilst awaiting control rooms and site work completion.

We have extensive experience in protection, control and measurement instrument wiring, together with AC and DC systems integration including batteries, chargers, distribution boards and HV/LV connections.

Our knowledge has been utilised on a number of projects from modifications to existing protection and control schemes to the fabrication, installation and testing of complete protection scheme panels at highly critical customer substations.

Testing and Commissioning Services

We are able to undertake a wide range of testing and commissioning services for transformers, high voltage equipment and secondary systems.

Our transformer testing capabilities include ratio, insulation resistance, winding resistance, frequency response analysis, tan delta, bushing and functional tests. Together with partnerships to provide comprehensive oil analysis we can offer a complete range of testing services for new and old transformers.

Global Power has specialist equipment to undertake the pre-commissioning of the whole range of substation equipment including instrument transformers, circuit breakers and other switchgear.

Workshop Facilities

Global Power Services has a 500m² workshop, in Malaga Western Australia, which provides us with the ability to undertake a range of off-site activities including panel wiring, primary plant pre-assembly, form-work preparation and equipment storage.

In addition, the workshop has a generous outdoor hardstand area making it perfectly suited for the off-site fit out of relay/control rooms and switch rooms for later transport to site.

Our workshop is complete with welding equipment, metal cutting/bending tools, painting facilities and a host of other tools for our operations. We also have our own 10 Tonne Crane, bobcat and flatbed truck with 6 tonne hiab.

Our in-house equipment including formwork, sheebolt systems, mixers etc. allow us to undertake civil works with little reliance on third parties.

We have a range of hydraulic crimping tools ranging from 12 tonne to 60 tonne, allowing us to assemble, install and maintain aerial conductor systems.

Global Power owns and maintains three containerised tool-kit/site sheds to provide on-site facilities in substations and customer work sites across Australia.

We hold a wide range of materials including control cabling, terminals and copper earthing components at our workshop allowing fast turnaround of critical client works.

Specialist Equipment

Global Power owns its own range of specialist equipment required for efficient operation in the energy industry.

We have our own transformer oiling facilities including:

- Vacuum equipment (numerous pumps ranging from 72 to 1,300m³/hour and capable of 0.5mbar);
- Filtered transfer pumps up to 7,000L/hour;
- Oil degassing and filtration plants (2 x 4,500l/hr capacity and 1 x 10,000l/hr). Two units have online moisture measurement devices and all have flow volume totalisers;
- Oil pods and storage tanks;
- Transformer Oil Transferring Pump;
- Transformer Dry Air Pumping Machine;
- SF6 Handling Unit;
- 10 tonne Tadano crane;
- 8 tonne crane truck;
- Excavator: Kobelco - SK35SR_5;
- BobCat:- John Deere;
- 2 Tonne Fork Lift;
- 9KVA Generator;
- 2.5KVA Generator;
- Concrete Mixer;
- Plate Compactor; and
- Miscellaneous civil and electrical equipments

We also have a highly regarded suite of electrical test equipment including:

- Doble M4200 HV insulation tester;
- Doble M5200 frequency response analysis (FRA) unit;
- 2 x 5kV BM11D Meggers;
- 2 x automatic 3-phase turns ratio testers; and
- 2 x winding resistance bridges.
- Digital Micro ohm meters
- Dry bath temperature probe tester
- Multimeters
- 500V Meggers
- Humidity Testers
- Paint thickness meter

- Various test equipments

Our experienced staff are fully familiar with the operation of all our equipment and can provide services as part of an overall project or as a standalone testing service for transformers and substation equipment. Our equipment is located across Australia and is able to be transported to remote sites as required.

Safety and Environmental Management

Global Power takes its responsibilities in safety and environmental management very seriously.

In 2006, Global Power established a formal Occupational Health & Management System meeting the stringent requirements of various state safety legislations. Our System has been accredited by Transgrid to satisfy the stringent requirements of the NSW Occupational Health and Safety Act 2000. Pre-start safety management, job safety analysis and daily toolbox talks are just some of the fundamental processes undertaken by Global Power on all projects.

Our environmental policy and associated procedures ensure that our activities do not adversely affect the environment. We strictly adhere to all client policies and provide Environmental Management Plans for managing projects with sensitive environmental issues.

More information is available from Global Power Services Pty Ltd

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Attachments:- (1) Global Power Reference projects List of Transformer & GIS Assembly
(2) Global Power Reference projects List of Substation construction