



high voltage substations | power distribution | renewable energy

About PSW

PSW Consulting Engineers (Pty) Ltd (PSW) was registered as a company in 2003 by a group of shareholding companies and individuals offering specialist electrical, electronic and mechanical consulting engineering services.

PSW is a member of the Consulting Engineers of South Africa (CESA).

PSW has, in terms of the Construction Chapter under the Broad-Based Economic Empowerment (Act 53/2003), received a verified score card having a Level 2 BBBEE Status and a Procurement Recognition Level of 125 %.

PSW offers clients state-of-the-art, cost-effective solutions for their particular requirements

In 2009 the focus included specialising in the field of High Voltage Electrical installations and Master Planning of Metropolitan Municipal and other power systems.

We have a vast experience in the master planning of high tension electrical transmission, distribution and reticulation networks for local authorities as well as Eskom.

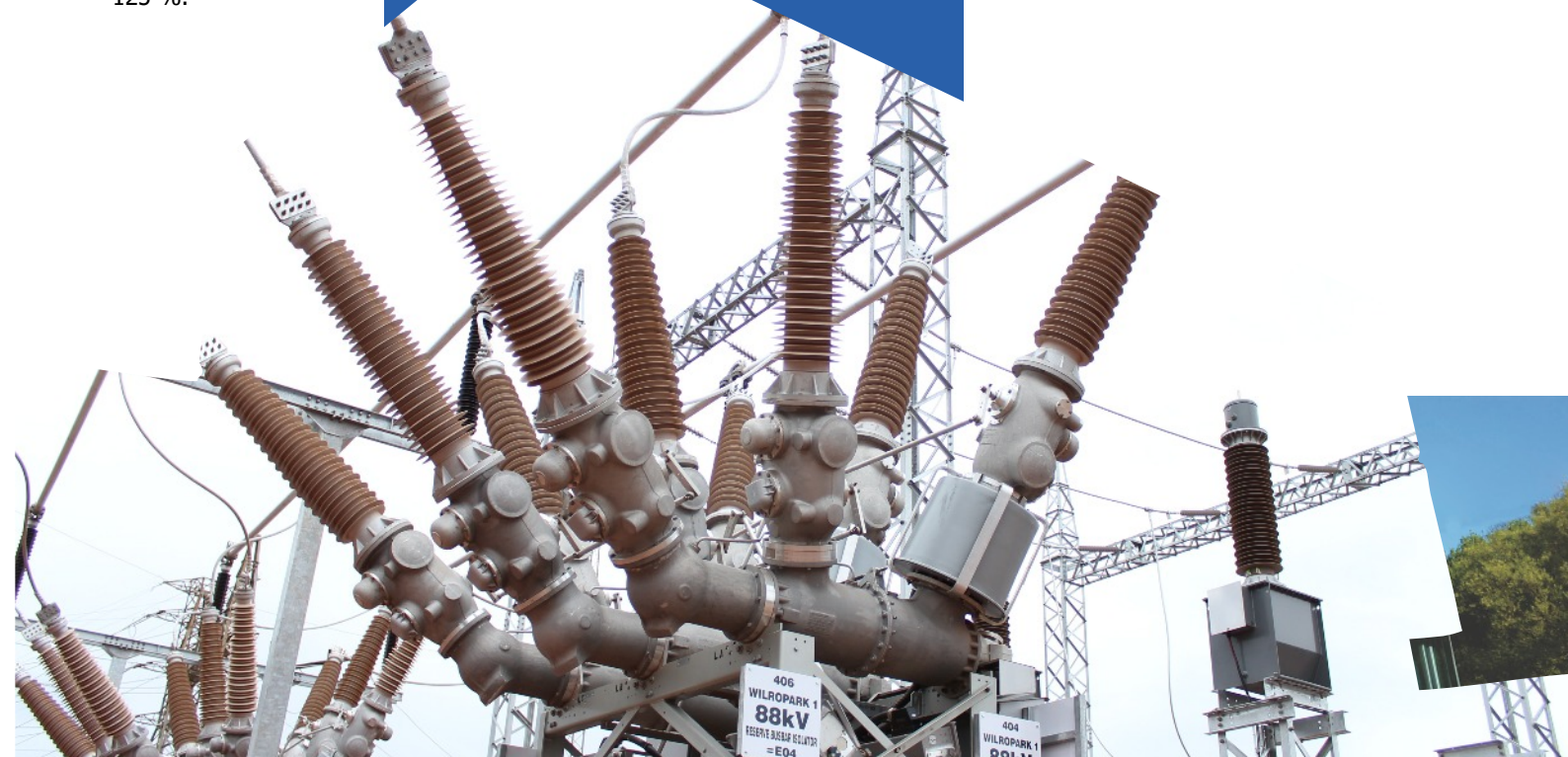
A full spectrum of electrical consulting engineering services from HV overhead lines, underground cables, substations (indoor and outdoor), power system protection and control systems, SCADA systems, telemetering, etc is offered. Other specialties include renewable energy projects such as wind generation farms.

Commitment to Environment

PSW is committed to responsible environmental stewardship and sustainable business practices.

As consulting engineers we recognise the impact of our designs, choice of materials and equipment and construction methods on the environment and will therefore advise Clients and other stakeholders accordingly in order to implement solutions and services that are environmentally friendly.

Our commitment to minimising our environmental impact extends across the entirety of electrical and mechanical engineering fields that we are involved with. Within the administrative and operational areas of our business, we are committed to measuring and monitoring our carbon and environmental footprint, redesign our energy consumption, travel-related carbon emissions, paper and consumables' usage and waste. In addition, we are continually seeking to improve the lifespan of products by reusing and recycling wherever possible.



Through the services we provide, we will seek to promote the most energy efficient and environmentally sustainable solutions appropriate for our clients, aiming to consider not simply their energy consumption but the impacts of the entire lifecycle of products and equipment we specify for use on a project. We will work with our clients, members of the professional team, contractors and manufacturers to foster life-cycle and environmental thinking so that environmental impacts are minimised during operation and on

Scope of Services

PSW offers consulting engineering services in the fields of electrical, mechanical and electronic engineering disciplines. By being personally involved and totally committed, the best service is rendered to Clients. These services include:

- Client briefing and determination of requirements
- Literature surveys and relevant project research
- Detailed technical analysis and software simulation, where necessary
- Confirmatory on-site field measurements in the case of radio path and coverage studies
- Detailed cost estimates on proposed configurations
- Reporting and determination of final systems design
- Tender documentation and specifications
- Tender adjudication and assistance with appointment of contractor/s
- Technical and financial project management
- Final systems handover and end-user training
- Assistance with systems maintenance functions

- Assistance with software optimisation and configuration
- Comprehensive project and engineering services are provided in order to assist clients in achieving overall optimum systems solutions.

Data Logging and Analysis

Service, with regard to the monitoring and analysis of electrical networks or related systems, with the aid of electronic data recorders are offered. Data on various channels is recorded continuously and analysed by a computer which can for example identify peak values, calculate averages, integration over time intervals and summations etc., in order to calculate the performance of the system as well as to analyse design parameters.

System analysis of electrical current, voltage, power factor and other parameters such as temperature is offered.



Mission Statement

PSW's mission is to be professional consulting engineering company that strives to design and project management safe, reliable and efficient electrical power systems for the benefit of our customers.

Vision

PSW's vision is to be known for the direct involvement of our highly qualified and specialist engineers on projects

Electrical

Master planning of municipal and other distribution systems which involves the logging and evaluation of data and studying and research of existing electrical systems in order to determine a comprehensive system master plan for all present and future electrical supply requirements. Load flow studies is done using the latest sophisticated computer programmes.

Bulk and high tension distribution which include power lines and cable feeders 275kV to 11kV, Infeed stations 400kV to 88kV, Distribution substations 132kV to 11kV.

Township reticulation which covers residential and industrial townships; street lighting – ripple, telemetric and digital load control; metering and optimised low cost township reticulation.



Building installations which includes electrical distribution; clean power and lightning protection
Emergency power installations which include emergency generators; battery systems and uninterrupted power supplies

Power Factor Correction; Process Control; power distribution and control interlocking for industrial processes and pump installations including motor control centres as well as lightning protection and earthing.

Our professional engineering services include design and project management of all types of high voltage substations. Our flexibility in adapting to client's philosophies and specifications ensures that we best meet their requirements.

Air-Insulated Outdoor Substations

Conventional outdoor substations can be designed to suit a client's particular requirements. Individual items of equipment are dependent on the substation's voltage level, busbar scheme and number of feeders and air-insulated substations require a relatively large area of land which needs to be fenced.

Gas-Insulated Substations (GIS)

Gas insulated substations generally are used in space constrained areas. Because of the compactness of the equipment which only requires a small area of land and minimal civil work resulting in substantial savings and makes GIS compatible with AIS at higher voltages.

Cellular-type Indoor Substations (AICS)

Innovative design and development of specialised equipment make air-insulated cellular indoor substation designs viable through the use of local outdoor-type equipment within a building. More than 15 cellular indoor substations have been designed.



Mechanical

Mechanical services include:

- Energy Research and Energy Management, this involves designing systems and services in buildings and industries for the optimisation in the use of energy. Sophisticated computer simulation programmes are utilised in evaluating energy saving methods and computer control systems are applied to attain the energy saving targets.
- Lifts and Escalator Installations; Fire-fighting Installations which include automatic sprinkler, fire, pump and gas installations as well as the supply of fire hydrant and hose reels.
- Mechanical Handling Equipment which include coal handling, grain handling and ash removal.
- Air-conditioning installations which include Centralised and Packaged Air Conditioning Systems for shopping centres, hospitals, office buildings, hotels, computer rooms, industrial applications, board rooms and auditoriums.
- Ventilation and evaporative cooling installations as well as refrigeration installations, cold-storage and freezer rooms including ammonia and ice storage systems.
- Extraction Installations which include dust, fume and kitchen extraction systems as well as fume cupboards.

- Hospital and Laboratory Services which include medical gasses, vacuum, steam and boiler installations and specialised gasses.
- Piping and pump stations which include domestic water and fire services, water purification and sewerage plants.
- Heating Installations which include hot water storage and heat pump systems



Values

Our core values define how we treat our clients, frame how we work with our colleagues and employees and are an integral part of our ongoing success. By setting standards whereby individual and team performances are measured and rewarded our values are firmly embedded in the way we operate.

Quality Assurance

PSW has implemented a Quality Management System in terms of ISO 9001:2015 and has been formally audited by an accredited authority.

Electronic

Electronic services that PSW provides includes:

- Security Systems which comprise risk assessments; access control; intrusion detection; surveillance; alarms and response as well as fire and smoke detection
- Building Management Systems; Communication Systems; Process Control Systems; Load Control and Energy Management Systems; Telemetry & Telecontrol Systems; Radio & Data Communication Networks and Instrumentation and Automation Systems



Project Management

- Definition of actual requirements
- Scheduling and programming of design activities
- Programming, control and corrective action during construction
- Quality Assurance
- Handing over and acceptance procedures
- Cost control and reporting
- Training and operation



Projects

High voltage transmission line projects include:

- 2 x 100MVA / 88kV double circuit 22Km Vanderbijlpark
- 200MVA / 88kV double circuit 8Km Vanderbijlpark
- 150MVA / 88kV single circuit 8Km Vanderbijlpark
- 2 x 300MVA / 132kV single circuit 6Km Richards Bay
- 1 x 150 MVA / 132kV double circuit 8Km Midrand
- Lesotho Highland Water Scheme 1B, 70Km 132kV
- Lesotho Highland Water Scheme 1B, 30Km 11kV
- Upgrade 75Km 88kV power line for ABB Sweden

Projects

Cellular substations include:

- 40MVA / 88kV Harward Cellular Substation Edenvale
- 50MVA / 88kV Slurry Cellular Substation Eskom
- 60MVA / 132kV Mayville Cellular Substation Pretoria
- 5 Bay / 132kV Carina Cellular Substation Richards Bay
- 60MVA / 132kV Grand Central Cellular Substation Midrand

Clients

Our client portfolio includes utility companies, municipalities, mining houses and the industrial sector. Our utility clients include ESKOM, City Power, City of Tshwane, Old Mutual, M&T, Zendai Development and the Lesotho Electricity Company.

Values

Our values are listed below

Professionalism

To be professional in all our interactions ensuring strict adherence to courtesy, honesty and responsibility when dealing with clients and employees alike.

Mentorship

Through projects professional engineers are mentoring candidate engineers to gain technical and practical experience on projects.

Stewardship

As engineering professionals we exercise influence, get things done and move our company forward. We are committed to being responsible stewards contributing to a sustainable environment.

One of PSW's aims is to offer our clients cost-effective solutions for their particular needs and our senior engineers have immense in-depth experience to ensure these state-of-the-art, cost-effective solutions.

Knowledgeable

To ensure that we are knowledgeable in the different engineering disciplines and have a clear understanding of what our clients require.

Accountability

To adhere to a code of ethics, standards of practice, and policies/procedures that govern the conduct of professional engineering activities.

Leadership

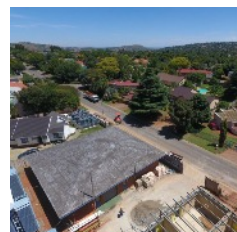
To have the courage to lead from the front and shape the future of our employees and our clients.

Commitment to Excellence

To promote a culture of excellence throughout our company through the use of state of the art tools, consistent and effective training and the quality of results we give to our clients.

Honesty

To act with honesty and integrity without compromising the truth in everything we do.



PSW employs highly skilled and professional electrical, mechanical and electronic engineers who ably assist the company in ensuring that clients receive the specialist services that we offer.



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