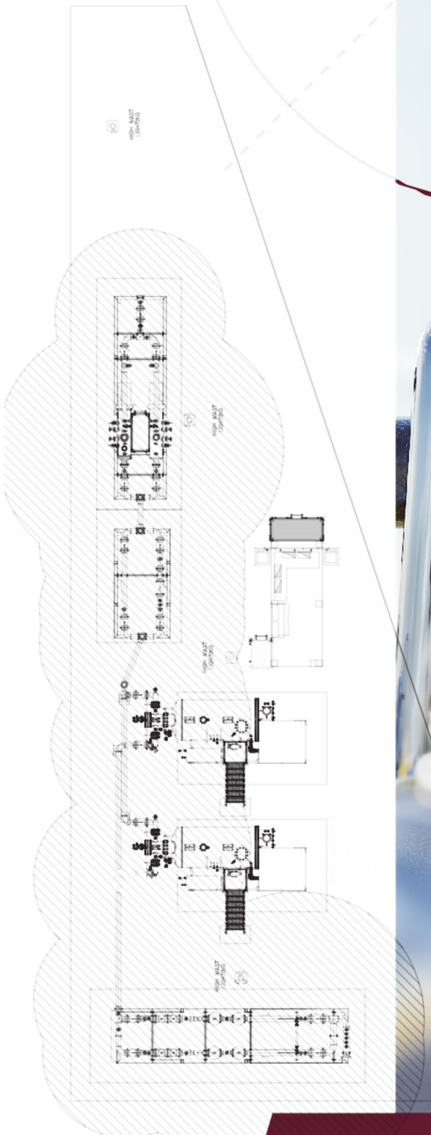
IPES



COMPANY PROFILE

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/ 1. COMPANY BACKGROUND

1.1 Founders and Purpose

Instrumented Process and Electrical Systems (IPES) was established as an independent engineering design house in 1988 in Johannesburg, South Africa, by Dr GP Human. IPES specializes in electrical, control, and instrumentation design services. Over the last 35 years, the company has built an extensive knowledge base and gained experience in a wide range of industries. Year-on-year, IPES has gained extensive experience across the energy value chain, including upstream, midstream, and downstream.

The first IPES project dates to 1988, with the Venda Water Care Works for the Venda Government in 1989. Shortly thereafter, in 1990, Electrical, Control, and Instrumentation design work for the leading international petrochemical companies Shell and BP followed. The first project that was successfully completed by IPES for Sasol Gas was in 1993, after which IPES was involved nationally in numerous design and execution projects entailing Pressure Reducing Stations (PRS) and High-Pressure Client Metering Stations (HPCMS). Each PRS had an overpressure protection slam-shut valve configuration with a dual pressure regulator set, rated for Safety Integrity Level 2 (SIL2), and some sensitive cases that comply with SIL3.

In 2001, following the discovery of natural gas in South Africa, IPES was involved in national natural gas conversion, and continues to navigate the changing energy landscape. South Africa's coal-dominated energy economy is driven by abundant coal reserves and an electricity sector based on coal-fired power plants. However, in 2005 South Africa began to face major challenges with energy shortages. These challenges forced more growth and development in other sources of energy.
In 2007 IPES lead projects for Airports Company South Africa (ACSA) and was responsible for the Apron Leak Detection System's Control and Instrumentation at the Apron Fuel Hydrant, and the detail design for the OR Tambo International Airport Fuel Tank Farm expansion.

As one of the signatories to the Paris Agreement, South Africa is committed to mitigate climate change. The country is busy adapting to a more diverse energy mix. In this landscape, IPES is involved in projects that use renewable energy and hydrogen.

Figure 1 on the next page indicates the IPES service offering throughout the energy value chain.

1988
Founded

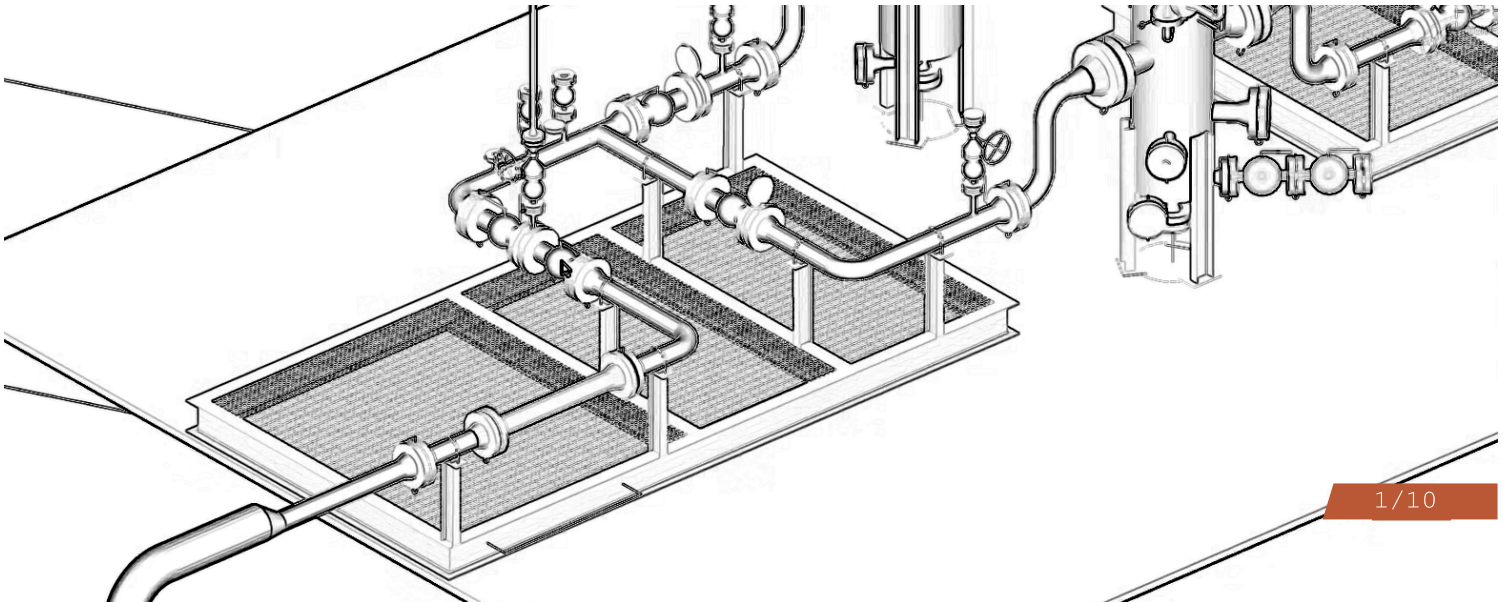
1989
EC&I Design,
Venda Water

1990
EC&I Design,
Shell & BP

1993
EC&I Design,
Sasol Gas

2001
Natural Gas
Conversion,
Sasol Gas

2007
EC&I Design,
ACSA



ENERGY VALUE CHAIN

Figure 1: IPES in the energy value chain

ENERGY SOURCE



Renewable energy



Coal



Oil



Gas



Hydropower

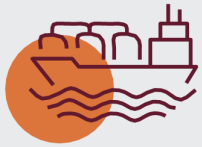
UPSTREAM

Oil & Gas exploration





1 Offshore



2 Onshore

Onshore

/ Energy storage
/ Power generation
/ Cooling systems
/ Motors & pumps
/ Tanks & piping
/ Control systems
/ Compressors
/ System automation
/ Drives & control systems
/ Electric functions

MIDSTREAM

Transport & Storage



3 Process & Storage

/ Lighting design
/ HAC
/ Earthing
/ SCADA
/ Control room
/ Cables
/ HAZOP
/ SIL
/ Security &. CCTV
/ Fire detection &. protection
/ Lightning Protection

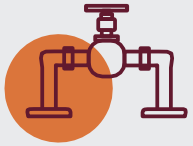


4 Pipelines:
Oil & Gas transport

/ Control &. Instrumentation
/ Earthing
/ Loops diagrams
/ Junction box locations
/ Telecommunication network
/ Fibre optic
/ RTU

DOWNSTREAM

Product preparation & usage



5 Refining

/ Diesel
/ Fuel oil
/ Jet fuel
/ Gasoline
/ Crude oil
/ Bitumen
/ LPG



6 Distribution

/ 1. COMPANY BACKGROUND

1.2. Core Values

IPES believes that differentiated professional services stem from core principles and values that are lived through each individual involved in the business. These values include the focus on employees, their development, and overall well-being. South Africa is known for its rich diversity; IPES leadership encourages open conversations and embracing differences. IPES believes that its approach to employees and clients enables the business to expand into new markets where new challenges and differences will be experienced. Embedded in the Employee Value Proposition is the focus on continuous training and development. IPES has a continuous learning programme with internal training from Subject Matter Experts, and employees are also encouraged to explore external courses to further their knowledge and skills.

> **People don't buy what you do, they buy WHY** you do it.

The core values of IPES include the following:

1. **Growth:**
Strive for excellence, innovation, and continuous development of skills.

2. **Integrity:**
Professionalism, Work Ethics, Under-promising and Over-delivering.

3. **People First:**
Empathy, Support, and Respect.

4. **Transparency:**
Authenticity and Trustworthy sources of information.

Striving for excellence is not only a core value of IPES; it is also its mission. It believes that people don't buy *what* you do; they buy your *reason* for doing it.



/ 2. PROJECT LIST

IPES has an extensive project list, some key projects will be listed from the past ten years:







2014

/ Electrical, control, and instrumentation design services at Airport Company South Africa.

2015

/ Loop line electrical, control, and instrumentation design, ROMPCO.
/ Airports Company South Africa Fuel Storage Deport Upgrade.
/ KIPP 350MW Power Station, electrical, control, and instrumentation design services including an HPCMS station.
/ Alrode pumps de-bottlenecking, Sasol Fuel Storage Facility.

2016

/ Pretoria West Sasol deport fire detection design.
/ Novo Energy Customer Metering Station (CMS) electrical, control and instrumentation design services and construction management.
/ Nampak High Pressure Customer Metering Station (HPCMS).
/ DRA electrical, control, and instrumentation design services for a HFO storage facility.
/ Spring Lights Gas HPCMS, CMS &. PR station design.
/ Glycol and ethanol storage tanks design for BMW.
/ FEED study for a solar farm for Aveng.
/ Crude Oil Blending storage facility for OTMS in Saldanha Bay.

/ 2. PROJECT LIST







2017

/ PPA Pande wellheads, Sasol Mozambique.
/ Detail engineering for the LHe/LNG plant, Renergen.
/ GNP and SNI pipeline design.

2018

/ Infill well Y & L detail engineering services, Sasol Mozambique.
/ FEED study for an LNG facility in Nigeria.
/ Transnet fuel pipeline decommissioning.
/ Air BP battery tripping unit redesign and commissioning.
/ Air BP overfill protection.

2019

/ MSP Filters.
/ Eskom Camden Ash Water System design of PLC and interfaces with existing DCS control system by means of a fibre optic link.

2020

/ MSP Filters.
/ Eskom Camden Ash Water System design of PLC and interfaces with existing DCS control system by means of a fibre optic link.

/ 2. PROJECT LIST







2021

/ PSA OBL, Sasol Mozambique.

/ Hydrogen Detection Design Services.

/ Clean Fuels Sasol Secunda Plant.

/ Lightning Protection.

/ Tetra LNG Regasification Plant.

2022

/ Pande FEED, 4 new wells' electrical, control, and instrumentation design, Sasol Mozambique.

/ PSA IBL, Sasol Mozambique.

/ T23 condensate disposable alternative project, ground flare reinjection design and commissioning.

/ PPA Infill Tranche 3 electrical, control, and instrumentation design for two new wells, Sasol Mozambique.

/ Mozambique LNG main gate complex project, Airlock Gate, Marshalling Building, and Security Building design services.

/ Sishen Lightning Design Services.

/ Anglo MCC electrical design and construction management.

2023

/ CMS Nigel Heater Relocation and Commissioning.

/ PPA Infill Tranche 3 Project, two new wells' procurement and construction management.

/ HPCMS electrical, control, and instru-mentation design services for Safira Gas, Mozambique.

/ PFG Building Glass, Hazardous Area Classification Design Philosophy, and Drawings.

/ PPA PEDOP Infill wells, electrical, control, and instrumentation basic and detail design services, Sasol Mozambique.

/ PSA Pande wells, electrical, control, and instrumentation detail design services, Sasol Mozambique.

/ 2. PROJECT LIST







2024

/ Betachem Blending plant, electrical, control & instrumentation and CCTV design for a new blending facility.
/ Sishen Lined Parking Areas
/ Betachem Substation design, to accommodate the new blending facility.
/ Ardagh UPS 2&3 Upgrade
/ Syngenta Brits
/ PPA PEDOP Infill wells procurement and construction services, Sasol Mozambique.
/ PSA Pande wells procurement and construction services, Sasol Mozambique.

2025

/ Carbon Plant.
/ PEDOP Compression project, procurement and construction management, Sasol Mozambique.
/ DJP Phase 3B, Construction Services for the Decommissioning of the Durban-Johannesburg Transnet Pipelines and Associated Infrastructure
/ Sasol HCL Tank Replacement, EC&I design, procurement and construction services, Sasolburg.
/ Impala Bitumen, EC&I design services for a bitumen plant restoration, Mozambique.
/ Medupi Fuel Dispensing Facility
/ Pretoria West Heat Trace

2026

/ Sishen telemetry
/ Econ Oil Transfer Facility
/ Ntabelanga Dam Electrical Design & Quality Control for The Department of Water Affairs.
/ Botswana Oil, E,C&I and CCTV & access Control Bid Evaluations for the Development of Ghanzi Government Petroleum Reserve Storage Depot.
/ NECSA EPCM services, where required.
/ Feasibility study for a solar plant.
/ Bidvest Upgrade

/ CLIENTS OF IPES SA AND GLOBALLY













































3. ENGINEERING SERVICES

Globally, the energy industry is going through a transition, aiming at net zero by 2050. The global energy transition not only aims to mitigate climate change and global warming, but also introduces different ways of sustainable electricity generation.

The business activities of IPES will support these efforts by offering effective high-quality designs to enable the energy transition and the challenges associated with the transition.

Such services include, but are not limited to:

/ **Electrical Design Services:**
IPES specializes in a wide range of electrical engineering services. In addition, the team also focuses on security and safety systems, including lightning protection and earthing, security and alarm systems, external and security lighting, access control, fire detection, and closed-circuit television. The electrical design package delivered by IPES includes key deliverables such as:

/ Design Basis Reports
/ Design philosophies
/ Hazardous Area Specifications
/ Equipment lists.
/ Power user and consumer lists
/ Cable sizing and calculations
/ Single Line Diagrams
/ Load lists
/ Plant-Earthing Drawings and Philosophies
/ Bill of quantities

/ **Design Software:**
IPES specializes in a wide range of design software, ensuring accurate designs and efficient design teams. These software packages include AutoCAD, FDES, ETap and Rev it.

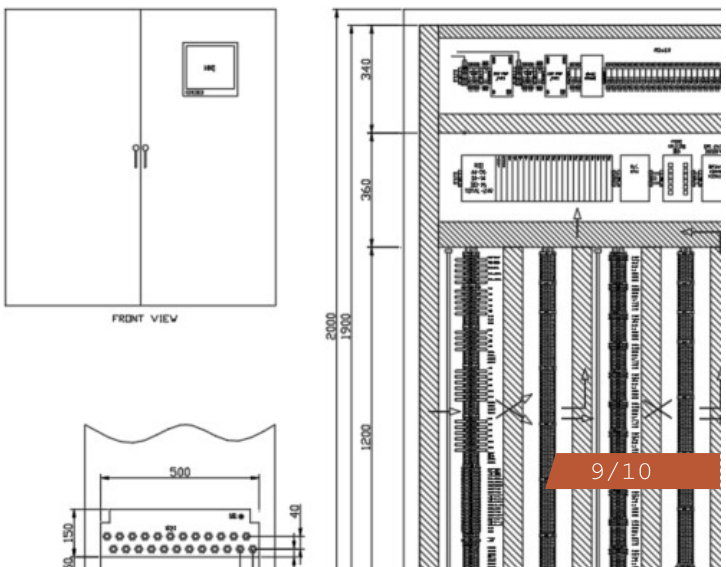
/ **Control and Instrumentation:**
Control and communication services include Supervisory Control and Data Acquisition (SCADA) systems, radio-based telemetry networks, industrial satellite-based remote monitoring, and Remote Terminal Unit (RTU) panel layout and designs. The C&I design package includes deliverables such as, but are not limited to:

/ Control Narratives
/ System philosophies
/ SIL verification and gap analysis
/ Range, alarm, and trip lists (RAT list)
/ Cause and effect diagrams
/ IS approvals and certification
/ Operating Philosophies
/ Instruments Index and Listing
/ DCS screen layouts and graphics
/ SCADA System Design
/ Loop diagrams
/ Instrument hook-ups
/ JB locations and designs
/ Cable block diagrams
/ Bill of quantities

/ **Information and Communications Technology:**
Terrestrial radio, fibre optic systems and networks, GSM for industrial applications, and narrowband satellite communications are areas of specialization for IPES. Applications of SCADA systems include calculation and data processing.

Additional to the services listed above, IPES also specializes in:

/ HAZOP Studies
/ P&ID reviews
/ MFD reviews
/ Process design



4. WHY PARTNER WITH IPES

/ **Industry Knowledge & Accreditations:**
The team brings a combination of industry knowledge, experience, and strong research capabilities to ensure that their clients achieve the desired result. By partnering with experts who stay on top of the latest technology trends shaping the industry, a client can rest assured that it is partnering with forward-thinkers.

/ **Niche Skills Set & Experience:**
Since 1988, the company has built a reputation that demonstrates its ability not only to manage its own team, but also to look after the needs of all their clients. The history of the company reflects its passion and ability to form long-lasting relationships with clients.

/ **Global Specialists:**
Company experts work and deliver projects in multiple territories, allowing them to gather information and draw on the benefits of diverse experiences from a wide range of environments, ensuring a customized solution to their client's problem to fit their unique requirements.

/ **Partner Commitment:**
IPES becomes a partner. This means that the client's satisfaction will be the top priority; IPES ensures that the goals and objectives of the client become their own. They maintain constant communication and guide the client towards the most beneficial direction.

/ **Successful Business Networking:**
Their business network provides access to many affiliates whose services have helped transform the industry. Keeping up to date with the latest technology trends and systems is crucial to driving client success.

/ **Adaptable and fully scalable according to client needs:**
A client's needs and specifications become their own. IPES is committed to finding the best solution based on the values and growth goals of the client.

/ **Value Engineering through Empowerment:**
The IPES approach enables them to solve problems, identify and eliminate unwanted costs, and improve functionality and quality. In doing so, their clients feel empowered and confident in the choices they make.

/ **After-sales Service Quality and Management:**
Once the project is completed, IPES engineers and partners stay in touch to ensure that client needs are always taken care of. They take pride in their after-sales management and strive to make their clients valued partners.

What a client can expect by partnering with IPES:
/ Compliance with international standards
/ A fully committed and professional team
/ Industry knowledge
/ Detailed design packages and AFC documentation
/ High-end systems

