Enhancing Power Quality

Since our inception in 1998, we have demonstrated our technical excellence, innovation, quality and reliability through our products and solutions across the globe and particularly in the middle east region.

This spirit, in all business units of the group, has helped us spread our wings to nearly 50 regions internationally as of 2012 and increasing our sales to US$ 195 million and new orders totaling US$ 300 million.

The rapid urbanization and demographic changes in our markets, call for constant innovation and advanced manufacturing techniques in order to provide quality solutions at an affordable cost.

Power Economy's team with a complete understanding of the current global electrical standards, trends and policies is fully equipped to meet any challenges of Power T&D and is constantly working on innovative technology to make the transition into the future smoother.

This combined with our multi-industry expertise and group strength help us in building effective solutions for the future market needs. Fast response to the market needs and well bonded teamwork have been our key to success.

As a responsible corporate citizen, we continuously support environmental protection through our energy-efficient products and empower our people with strong knowledge and skill sets for their continuous career and self development.

Mr. S.M.Rao
Chairman

Mr. G.Radha Krishnan
Managing Director

Who We are?

POWER ECONOMY is one of the market leaders in the middle-east region for over a decade in design, manufacture and supply of a wide range of low,medium and high voltage products & solutions that enhance the quality & reliability of power from 415V to 400kV.

Our Reactive Power Compensation, Distribution, Control, Protection, Automation & Metering solutions are developed through constant research and market innovation catering to the needs of power transmission and distribution networks in the Middle East and Africa.

Today the company is offering its solutions for both conventional & smarter power networks in the domestic and international T&D business.

At Power Economy, we strongly believe that our success and growth are direct derivatives of 'Customer Satisfaction' through quality on time and on budget.

Our solutions, developed through constant innovation and research, benefit our customers by cutting down cost, improving efficiency and help them to achieve almost nil downtime.

We always ensure our innovation leads to environmental protection through our energy-efficient products along with long term corporate responsibility efforts.


"Quality Control, protection,
automation and distribution"

Our Infrastructure

MANUFACTURING FACILITY

16000 sq.m. State-of-the-art manufacturing facility in the industrial city of AbuDhabi, UAE

ERP system for Work flow control and Project Management

PEOPLE

Core design team with more than 300 man-years of experience in the power sector across all the 3 continents -Asia, Europe and North America.

150+ qualified workforce with more than 75 engineers.

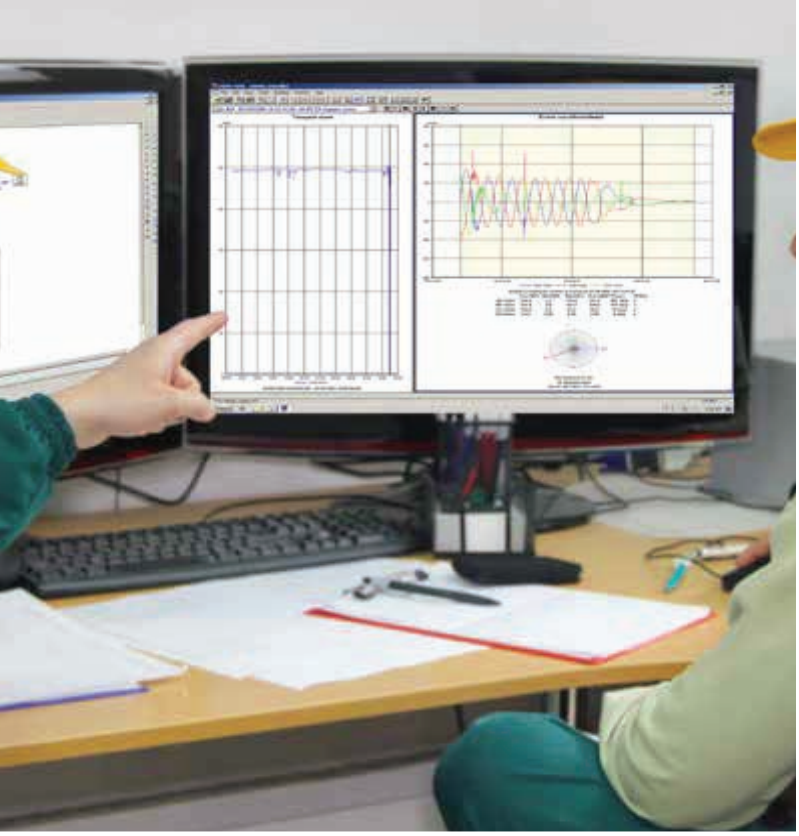
DESIGN

- PSCAD & ETAP for Switching and Harmonic study
- ELEC DES & AUTOCAD for Drawings & BOM preparation
- Maxwell 2D for Magnetic Field Plots

LABS

The ONLY company in this region to have the following test labs in-house

- Lightning impulse Lab up to 300kV peak
- Temperature rise Lab
- Ingress protection lab



TEST EQUIPMENTS

Our quality team is well equipped with an array of all the necessary test instruments and conducts various tests right from those on outsourced components to the ones on final fabricated solution. Every test procedure is followed to ensure conformity of the product to the policies and guidelines of the utilities/customers and countries.

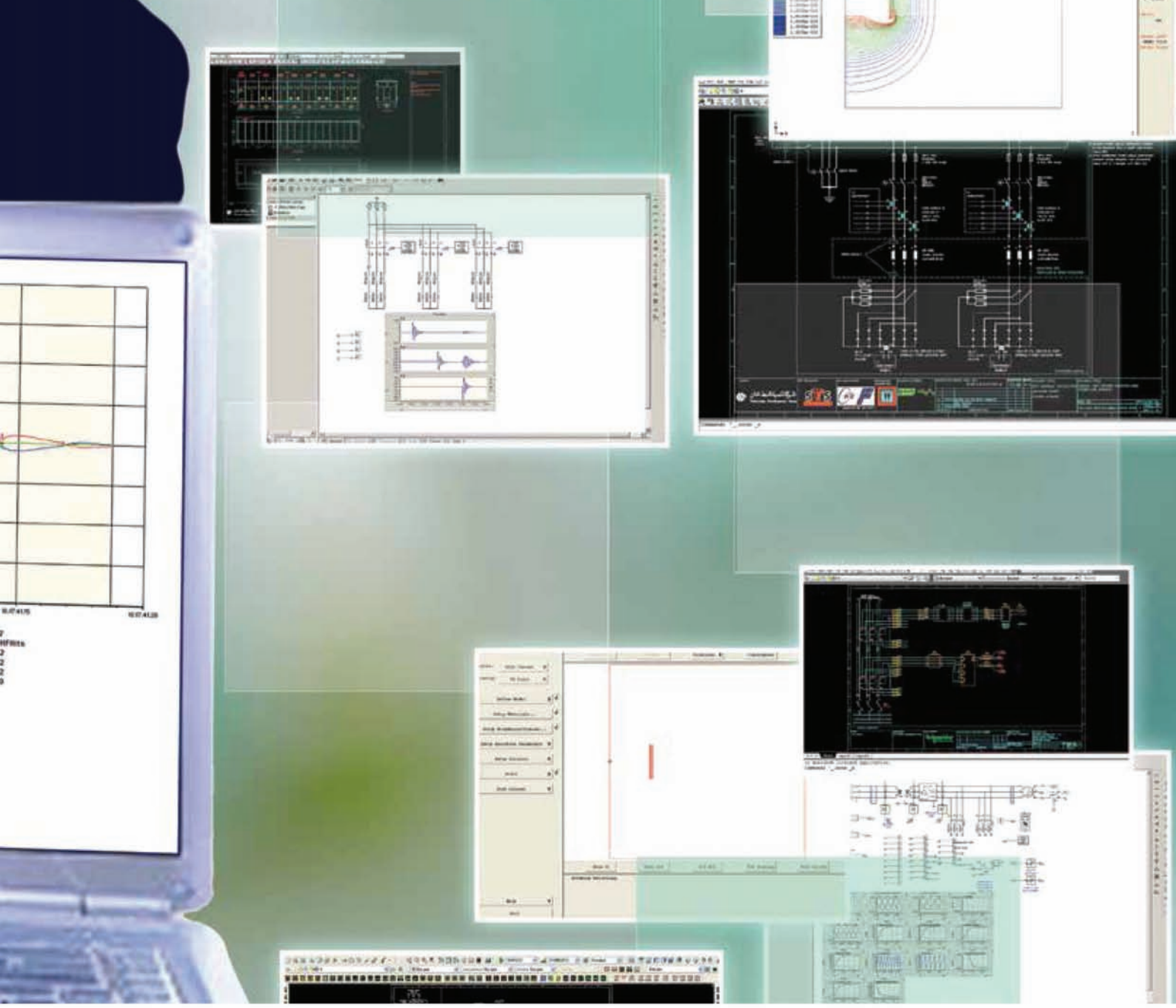
TRAINING CENTRE

Ultramodern training center to provide hands on training to our clients and employees.

GROUP STRENGTH

Apart from the above Power Economy is ably supported by the group's other business units located in Oman, India, USA & Malaysia.


Timeplot chart
Volts
CHA Volts
07/09/1993 00:00:00.00 - 07/10/1993 10:00:00.00
Event waveform/detail
Volts
CHA Volts
CHB Volts
CHC Volts
AV,BV,CV impulse event occured at 07/10/1993 16:17:41.0
PrevRMS MinRMS MaxRMS WorstRMP Phase
AV Volts 124.0 3.3 110.0 121.0 267 deg
BV Volts 124.6 4.8 114.7 120.0 124 deg
CV Volts 124.6 0.5 97.4 95.0 10 deg
DI Amps 0.00 0.00 0.00 0.00 0 deg
CV
AV
BV
Normalized to AV
10 deg/division
AV=0°, BV=204°, CV=101°



Designs

Our core design team with vast experience in power sectors across all the 3 continents-North America, Europe and Asia and unparalleled technical expertise can transform the customer requirements into cost effective and reliable solutions that can meet any harsh environmental service conditions.

Right from the initial customer's requirement study to final product development including application engineering, component selection, production drawings and also technical support to the testing and QC team in meeting the FAT procedures, our highly qualified team of electrical system design experts work in tandem with our production line and the customers to ensure seamless customization of products

Our in-house design team comprising dedicated electrical system design experts, application engineers and draughts men use industry standard practices and a suite of computer aided tools that include PSCAD, ETAP, ELECDES, AUTOCAD and MAXWELL 2D to quickly translate client requirements into physical prototypes and production items.

Our superior design capabilities and advanced manufacturing techniques help us in providing cost effective and custom made solutions that give better ROI through easy and minimum maintenance.

Reactive power compensation

LV Power distribution

MV Power distribution

Control &

Products & Solutions

Our USP is 'Customised solutions through Engineering & Design'.

The core design team at Power Economy has more than 300 man years of combined experience in power sectors across all the 3 continents-North America, Europe and Asia. Our superior design capabilities and advanced manufacturing techniques help us design products and solutions that meet your specific needs and any harsh environmental service conditions.

This 'superior' design capability help us in providing cost effective and custom made solutions that gives you better ROI through easy and minimum maintenance.

Our products and solutions are designed and manufactured by a team of highly experienced technocrats at power Economy and developed with components sourced mainly from manufacturers in Europe and US & also reputed firms from rest of the world. This ensures not just quality and reliable power distribution but sets the benchmark for overall power quality in any region we work with.

This has helped Power economy in not only reaching out to new customers but also in retaining a client base that includes electricity utilities, govt./public departments, industries, high-rise buildings, oil & gas sectors, and infrastructure projects across the globe.

Protection

Substation Automation

Advanced Metering

Site Support

Advantages

- Our USP is 'Customised solutions through Engineering & Design'.
- One stop shop for all your Reactive power compensation, Control, Protection, Automation, Metering & Distribution needs.
- 'Superior' design capabilities, global quality standards, Custom made cost effective solutions and products.
- Experience across various standards – IEC, IEEE, BS, etc.,
- State of the art manufacturing facilities strategically located with excellent connectivity to Europe, Asia Pacific, Africa and North America.
- Constant R&D and advanced in-house testing facilities.

Reactive Power Compensation

- Solution for primary and secondary distribution systems of 0.4 to 36kV voltage level
- Indoor or outdoor type installations with metal enclosed and open rack designs
- Current inrush limiting and tuning type designs with air or iron core reactors
- Fixed or switched type of operations with automatic control
- Type tested solutions as per IEC 60871, IEC 62271-200 & IEC 61921
- Mechanical interlocks for safe accessibility
- Engineered as per specific needs

Solutions:

- Metal enclosed with tuning & damping reactors
- Open rack mounted
- Pole or Pad mounted
- Air & iron core reactors

Salient features:

- Outdoor or Indoor type enclosures with steel base frame
- Outer skeleton of welded angle frame
- Cladding by sheet steel doors and covers painted with epoxy or polyester powder paint
- Bubble gaskets used for providing required IP rating in outdoor type
- Canopy provided by additional steel sheets on top providing natural air column for heat protection
- All cable termination at the bottom with aluminium gland plates
- Open rack and pole mounted solutions with high creepage distances
- Internally or externally fused capacitor units
- Type tested switching devices validated for back-to-back switching capability
- Naturally cooled enclosures with high IP ratings
- Mechanical interlocks for safe operation
- Option of stages to be segregated with through type bushings
- Option of outdoor type detuning reactors to be installed in separate GRP enclosure
- Indoor control and Protection panel engineered for specific protection and control needs

Type Testing

The capacitor bank solutions are type tested, as relevant for following tests as per IEC 60871 and IEC 62271- 200:

- Short time withstand current test on main circuit for 31.5kA/3s
- Short time withstand current on earth circuit for 31.5kA/3s
- Impulse voltage withstand test
- Power frequency voltage withstand test
- Temperature rise test
- Ingress protection test

Low voltage capacitor banks are type tested for following tests as per IEC 61921

- Short time withstand current test on busbars for 50kA/1s
- Power frequency voltage withstand test
- Temperature rise test
- Strength of materials and parts
- Confirmation on EMC

Engineering

Team of expert engineers does application engineering of various protection and measuring devices. Drawing activities are performed using AutoCAD and advanced software like ELECDES & PANELDES

Inspection & testing

Dedicated inspection team carries out inspection of sub-components and finished panels. Modern test instruments like OMICRON CMC356 and FREJA300 are used for testing of protection relays.

Technical Details	
Rated voltage	0.4kV to 36kV
Rated frequency	50/60Hz
Power frequency withstand voltage	Up to 95kVrms*
Lightning impulse voltage	Up to 170kV peak*
Short time current withstand capacity	Up to 31.5kA/3s (for MV) & 50kA/1s (for LV)
Degree of protection for enclosure	Up to IP55
Design ambient temperature	Up to 55°C

* Higher BIL designs are possible on request

Low Voltage Power distribution

- Main Distribution Boards (MDB's)
- Sub Distribution Boards (SMDB`s)
- Distribution Boards (DB's)
- Capacitor Bank (LV. CAP)
- Motor Control Centre (MCC)
- Automatic Load sharing and synchronizing Panel
- Modular Design of Enclosure System.
- Withdrawable, Fixed and Plug-in compartments structure
- Type Tested to IEC 60439-1 with latest Air Circuit Breakers, Moulded Case Circuit Breakers, Fuse Switches, and Control components

Air Circuit Breakers:

Air Circuit Breakers are available up to a nominal voltage of 690V with 10 continuous ratings from 800A to 6,300A and interrupting withstand ratings of up to 100kA for 1second. Fixed and Withdrawable units are available in 3 or 4 pole designs.

Moulded Case Circuit Breakers:

The MCCB range includes standard thermal and magnetic as well as electronic trip units for ultimate system flexibility in different frame sizes from 16A to 2,500A, interrupting capacities up to 100kA and voltages up to 690V.

Fuse Switches:

A range of Fuse Switches and Disconnect devices with ratings up to 2,000A and 690V provide unparalleled solutions for isolating and switching resistive or inductive loads.

Protection and Control:

Controls are conveniently located at the front of the unit where they can be easily accessed. A full range of programmable and electronic trip units are available to offer you a choice of protection, information and communication capabilities to meet your specific requirements.

Miniature Circuit Breakers:

With a full range of miniature circuit breakers and accessories provide final circuit protection for all small power and lighting requirements. With trip characteristic types B, C and D and single, double, triple and four pole configurations, a wide range of protection for any specific application can be met. A range of earth leakage protection is also provided within this modular range.

Technical Details	
Enclosure Modular assembly system	
Degree of Protection	IP20 to IP54
Internal Division	Form 1 to 4
Enclosure Colour	Grey RAL 7032 / 7035
Bus bar system Rated Current	225A to 7800A
Rated Short - Time Withstand Current	5.4kA to 120kA
Rated Operational Voltage	690V

Medium Voltage Power distribution

- Solution for primary and secondary distribution up to 24kV
- Indoor type air insulated switchgear having sheet metal enclosure with compartmental design.
- Main switching devices are draw-out type Vacuum or SF6 Circuit Breakers as per client requirement
- Designed as per IEC 62271-200 and service continuity & partition category LSC2B/PM as per IEC.
- Internal Arc design and protection classification – ALFR as per IEC
- Compatibility with latest measuring & protection equipment including advance numerical relays.
- Engineered as per specific application, requirement of market segments and clients.
- Draw-out & Fixed (RMU) type alternatives
- The switchgear is extensible type

Operation & maintenance interlocks provided for:

- Circuit breaker door with test / service position of switching device
- Earth switch operation with test / service position of switching device
- Secondary plug with test / service position of switching device
- Emergency trip facility
- Special interlocks as per application & client requirement

Enclosures:

Switchgear enclosures are self supporting type and are made of 2mm sheet steel. Load bearing members are of 2.5/3mm sheets. Fabrication of sheet components is done using CNC & NC machines. Fabricated components are powder coated or zinc plated for surface protection. The freestanding functional units are extensible type.

Components:

Power components like circuit breakers, current transformers, busbars are installed in separate compartment providing service continuity class LSC2B as per IEC 62271-200. Metallic partitions are provided to segregate these compartments. Busbar, Circuit breaker and Cable termination compartment are designed for internal arc protection.

Protection & Control:

LV control and protection apparatus is mounted in separate compartment installed on front side of the switchgear panel. The Switchgears offered are compatible with modern relays and monitoring equipment

Technical Details	
Rated Voltage (kV)	up to 24kV
Rated frequency (Hz)	50Hz
Rated current (Amps)	630A, 1250A, 1600A, 2000A, 2500A, 3150A
Rated short time withstand current – up to (kA)	31.5kA for 3sec
Rated peak withstand current (kA peak)	up to 80kA
Rated short circuit breaking current (kA)	up to 31.5kA
Rated internal arc current (kA)	25kA & 31.5kA
Power frequency withstand voltage (kV)	28kV (for 1 minute) / 38kV (for 1 minute)
Lightning Impulse voltage (kV peak)	75kV / 95kV
Degree of protection for enclosure	IP4X (Indoor)
Maximum design ambient temperature (°C)	50°C

Rated current ratings are at an ambient of 40°C

Control and Protection Panels

Power economy's state of the art control & protection panels are engineered to meet the ever-changing needs of the power industry. We offer reliable, efficient and intelligence solutions for control and protection needed for Utility sector covering Generation, Transmission and Distribution network, Heavy and medium power industries, oil and Gas sector, primary and secondary distribution systems etc.

We design, engineer, manufacture, conduct factory routine tests on C&R our panels, conduct Site test and commissioning services, undertake special engineering services to meet clients/Engineers needs.

Product Range

- Protection control and relay panels, for MV/HV/EHV system up to 400kV
- Process control Instrumentation panels for Process Industries, pumping Stations and Oil and Gas fields
- Under Frequency load shedding panel
- Mosaic panels, control desks with large screen projection system
- Local control cubicles for GIS switchgears
- SCADA marshalling Panels and local interface Panels for RTU
- RTCC (remote tap change control cubicle)
- Pilot wire marshalling and Isolation transformer marshalling cubicles
- Sequence control and annunciator panels
- Generator control, monitoring and protection panels and control desks with single slope or double slope type
- Specific tailor made and non-standard panels for retrofitting and matching for existing S/S
- Demo unit panels with various protection IED and bus system, to train utility and contractors application and T&C engineers.

Services

- Engineering services covering C.T. sizing calculations for protection relays, preparation of engineering drawings like General arrangement drawings, Schematic drawings, Cable/terminal schedules, and substation engineering services
- Protection setting calculations both unit and graded protection calculations
- S/S fault level calculations using internationally recognised software in accordance with IEC regulations
- Erection, testing and commissioning services
- Retrofitting engineering services including supplies

Construction/Packaging

- Combined Control and Relay Panels with fixed 19" relay mounting frame with front viewing door for relay portion
- Protection Relay Panels with fixed/ swing type relay mounting frame with front and rear doors.
- Pullout cum swing type panels for Synchronizing equipment
- Cubicles manufactured from Electro-Galvanized Phosphated and Chromated sheet steel, and painted with powder coating to required color shade
- Panels can be supplied with IP52 to IP55 ingress protection class
- Panels for Indoor and outdoor applications

- Dead front end panels/ Single slop/Double slope control panels/ Simplex and duplex type panel/ Tailor made panels for retrofit work

Features

- Panels built with protective relays and systems as per approved component for 400kV/220kV/132kV/33kV systems
- Use of approved control and auxiliary component to meet the highest standards and internal wiring as per international standards using color coded wires, with ferrule systems as per utility requirement
- Approved terminals for CT/VT circuits, CT circuit shorting facility, isolation, test sockets for external testing, disconnect type control terminals for SCADA circuits
- Mimic layout diagram with computerized mimic symbols with PVC strips
- Systematic labels for circuits bays, front and rear mounted equipment
- 100% testing including IR/HV/IR, functional tests on relays and circuits

Cliental Approvals:

- Approved C&R products supplier to UAE utility sector for TAQA/ADWEA (TRANSCO, ADDC. AADC), ETIHAD WE (FEWA), SEWA and executed several 400 kV/220kV/132kV/33kV projects.
- Approved C&R product supplier in Oman for OETC, MEDC, Mazoon, RAICO, PDO and DPC
- Approved panel integrator for MNC companies like Siemens, ALSTOM Grid, ABB, Schneider Electric and other leading OEMs.
- Approved suppliers of C&R panels up to 400kV system
- Preferred C&R product suppliers to Major EPC'S like Hyundai, Samsung, LnT, Toshiba, Galfar (Oman), BEC (Oman), etc.

Technical Details	
Degree of protection for enclosure	IP42 to IP52
Design ambient temperature	35°C to 55°C
Overhead lines and cable feeder protection schemes	
Busbar protection schemes	
Under frequency and loading shedding schemes	
Generator protection schemes	

Power System Automation (SCADA / RTU / SAS)

At Power Economy, our solutions are driven by innovation. We realize what it takes to build a solution, is a good investment today that supports the roadmap towards effective long-term Asset Management & Grid Control.

Working closely with Power Utilities and EPC Contractors in the region, Power Economy offers turnkey automation solutions based on latest technologies and standards.

Our solutions, adopting latest digital technologies for Substation Control, Protection & Automation provide a means for effective monitoring and utilization of critical and valuable assets of power utilities. This detailed insight helps every Utility Company to focus better on their primary business function of delivering power in a reliable, safe and efficient manner.

Our local presence combined with an experienced and dedicated team, provide our Client/Customers a one-stop-facility for all their generation, transmission and distribution needs related to automation, controls, metering and power quality enhancement.

Our Solutions include:

- System Integration for SCADA/ RTU & Substation Automation Systems
- SCADA Adaptation Works/ Interface Panels (SIP/CCC/DMS) complete with transducers, interposing relays and terminals to meet defined I/O and Technical Specs
- Total solutions for integrating new substations to existing LDC/ DMS centers and modification of existing protection schemes for integration to control centers
- Engineering & Operator Workstation HMI's for RTU/ SCMS solutions
- Substation bay level control, metering & monitoring systems
- SDH/PDH telecommunication networks
- Engineering of SCADA/RTU/ SCMS automation projects including CAD facility
- State-of-the-art testing facilities
- In-house manufacturing of cubicles and racks for all automation applications as per IEC and other relevant standards

Our engineering expertise

- Multifunction IEDs
- Bay controllers
- Software platforms
- IEC61850 inter-substation communication

We specialize in IEC-61850 based automation and protection relay systems and have developed a simulator for testing communication and inter-operability of IED devices & for training purposes.

Features:

- Simulate CT & VT
- Simulate Breakers, Switches & Events
- Multiple Vendor IEDs
- Explore Multifunctional IED features
- IEC based automation scheme
- Advanced 1 Gbit/s Fiber Ethernet Network
- Validate Network Communication
- Perform point-to-point tests
- Commission HMI

Protocol Expertise:

- IEC 61850
- IEC 60870-5-101,103,104
- Modbus
- DNP3
- GOOSE - inter device
- SCADA byte protocols
- SCADA bit protocols

SMART METERING

Substation Meters (Power Quality / Tariff) & Consumer Meters

In the age of technological advancement, most utilities & de-regulated power providers willing to reap the benefit out of Smart Grid and Intelligent Substation applications. Hence meters must offer advanced monitoring / measurement features for the utilities across various interface points vis-a-vis Generation,Transmission , Distribution levels till Consumer end to meet the most critical power monitoring / Measurement requirements. Objective of such meters does not end merely with the power monitoring / Measurement capability, it rely equally on memory storage / communication interface/ availability of raw data for further activities. Meters complying to all requirement must be reliable and accurate. Since reliability and accuracy of the metering records accumulated across the aforesaid interfacing points reduce the possibility of significant monetary risk for all those involved.

Identifying a vendor who can supply a revenue / power quality / Consumer meter(AMR/AMI) is not an uphill task.

But real challenge for the client rely on integrating such meters to monitor / control from remote location as well as to process retrieved raw data for extended activities like analyzing, billing etc., and comes the most important factor, extensive service support

So whom to approach for such complete Metering package solutions ?

There comes the role of a system integrator, PEME who enjoy the reputation with leading utility clients in the market .

POWER ECONOMY is one stop destination for your metering needs, with reputation & proven track record across a vast client base.

- Power economy offers accurate and reliable metering systems that would help avert any losses or disputes (technical / non-technical)
- Power economy provides 24x7 extensive service support with dedicated experts, a much anticipated need for every customer.
- Power economy offers customized & turnkey solutions to the needs of customer requirement.

Products

Power Meter with Advanced Power Quality

Salient features:

- 10MHz Transient recorder
- Auto-calibrating Metrology
- 1 Gig of data storage
- Color touch screen display
- Highly expandable I/O
- V-Switch™ Key Upgradeable

Standards:

- ANSI C12.20 Class 0.2 and IEC 62053 - 22 (Accuracy)
- ANSI C62.41 (Burst)
- ANSI / IEEE C37.90.1 – Surge Withstand
- IEC 61000-4-2-ESD
- IEC 61000-4-3-Radiated Immunity
- IEC 61000-4-4-Fast Transient
- IEC 61000-4-5-Surge Immunity
- IEC 61000-4-15-Flicker Meter
- IEC 61000-4-7-Harmonics
- IEC 61000-4-30-Class A

Communication Interfaces / Protocols

- ANSI Optical port
- RJ45 Ethernet port 10/100 BaseT
- Modbus TCP/IP, ASCII/RTU, DNP 3.0
- USB 1.1 / 2.0 virtual COM port

Tariff / Revenue Meters

Salient Features :

- 0.06% Watt/Hr Revenue Meter
- 4 Quadrant Measurement
- Transformer / Line loss / CT & VT compensation
- Auto calibration metrology
- External I/Os
- Harmonic Distortion Analysis

Communication Interfaces / Protocols :

- Optical port
- RS485 Serial port
- 10/100 BaseT Ethernet
- Modbus RTU/ASCII
- DNP 3.0

Power / Energy Meters

Salient Features

- Small Design & Easy Installation
- Meets ANSI C12.20 and IEC 62053-22
- Standard RS485 (Modbus and DNP 3.0)
- IrDA port for PC reading and programming
- Expandable I/Os
- Embedded Web Server

Consumer Meters

Benefits :

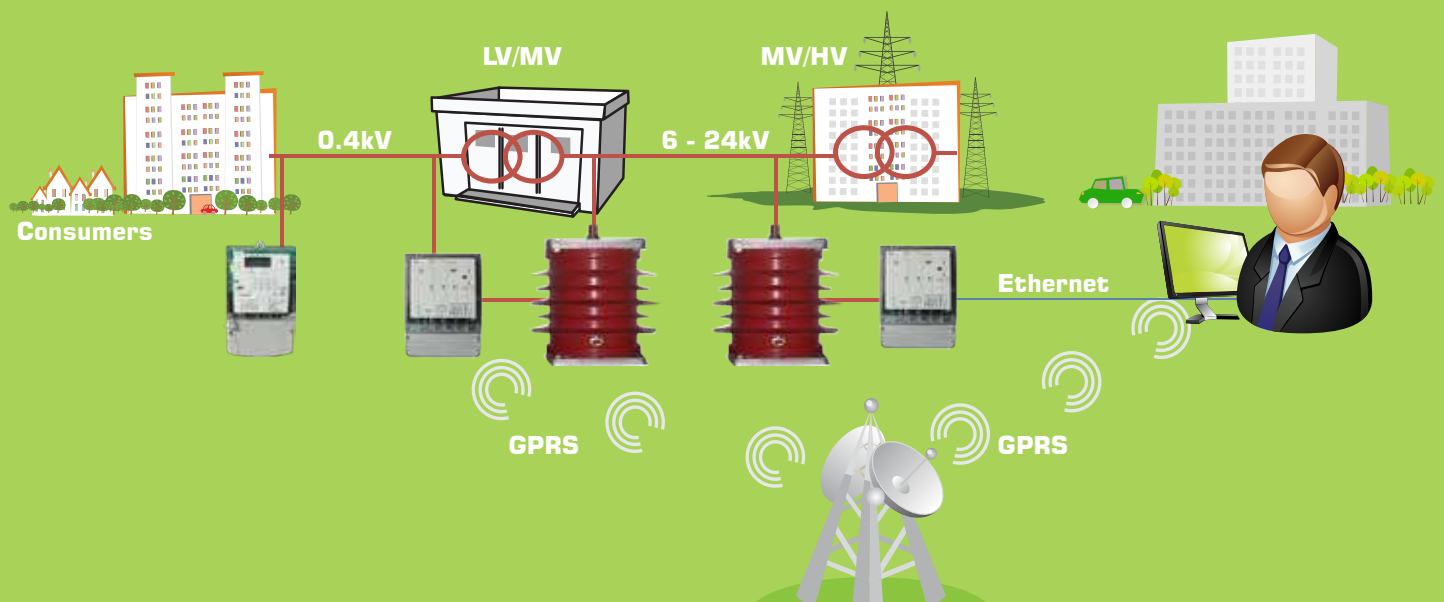
- Non-technical loss elimination
- Minimization of operational cost
- Improvement in power quality
- Reduction in power outage
- Knowledge of energy consumption
- Accuracy in electricity billing for consumers
- Un-Interrupted supply

Salient Features

- Real time reading, remote parameterization, configuration / firmware up gradation
- Full two way communication
- OFDM / S - FSK modulation for MV PLC
- OFDM / S - FSK modulation for LV PLC
- Data Storage in Non-Volatile memory
- Protection against non-technical losses
- Load control [command / schedule]

Communication Interfaces

- LV / MV PLC
- GSM / GPRS / 3G
- CDMA 2000
- Ethernet
- M-Bus



Site Support

Power Economy offers a broad range of field support services. As a customer you may have diverse needs on site service needs based on the type and size of your electrical installation. These are well addressed by Power Economy 's SITE SUPPORT team

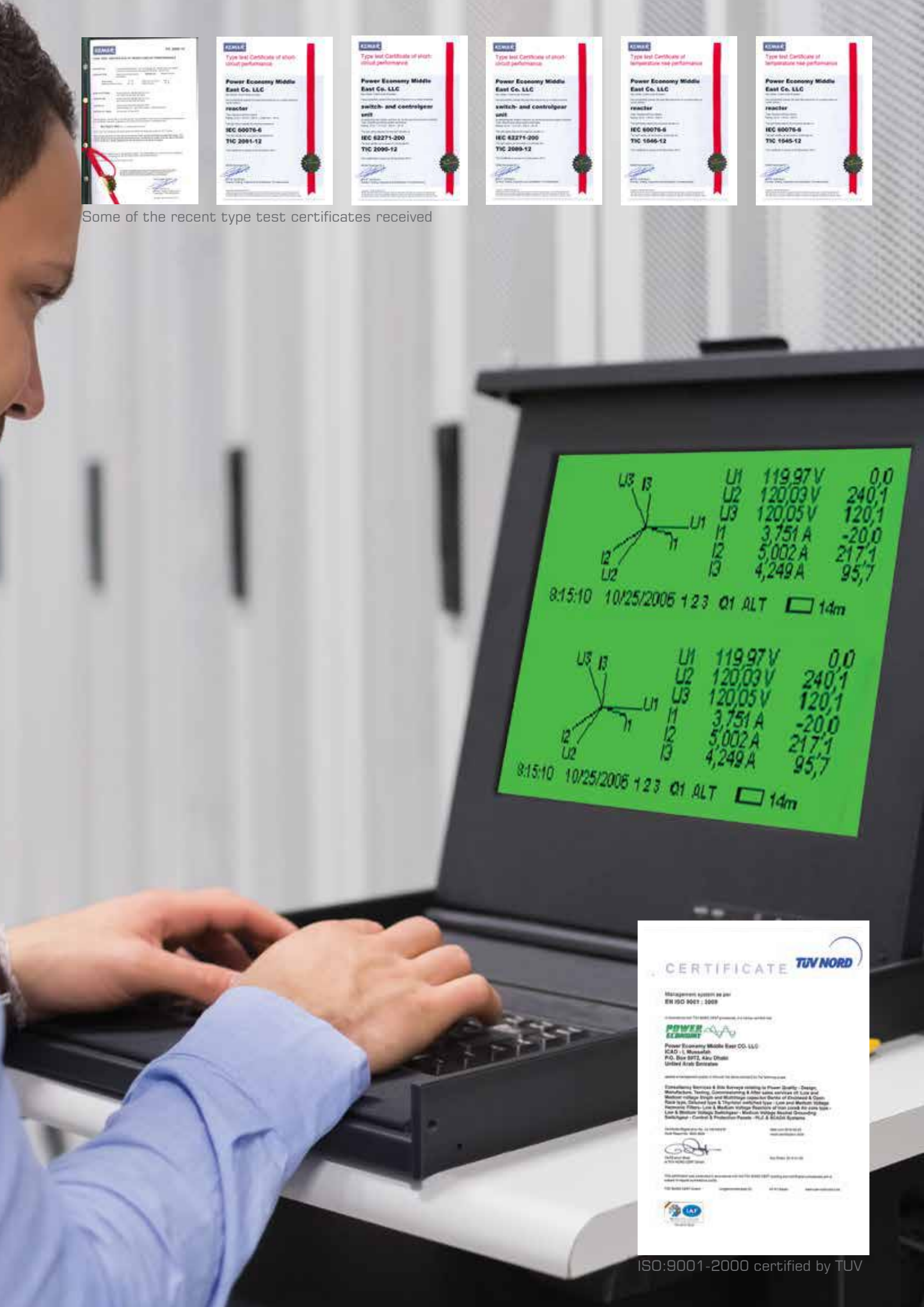
We have a team of committed and competent engineers who could offer quality service and value through proper analysis and requirement within your framework.

The host of services ,offered are well tailored to customer needs and their equipment lifecycle phase.

- 24/7 Support
- Corrective & preventive Maintenance outsourcing
- Site Appraisal
- Spares Management
- Training
- Telephonic Support
- Site inspections

- Power quality and verification services with harmonic analysis and recommendation for improvement.
- Upgradation, revamping, retrofitting and modification of the existing system.
- Extensions and adaptations to the existing system
- Replacements
- Service Agreements to ensure uninterrupted operations
- Trainings programs customized to your needs
- Reduce operation costs by outsourcing corrective and preventive maintenance to us
- System improvement and equipment performance study
- Extension, Upgrades and Retrofits
- Site installation and Testing & Commissioning
- Emergency on-site repairs

Some of the recent type test certificates received



ISO:9001-2000 certified by TUV

Quality

At Power Economy ,Quality is a way of life.

We maintain high standard of workmanship through dedication and commitment by following global industry standards to achieve uniformity and excellence in order to satisfy specific user requirements, thereby achieving quality products on time and budget.

Quality is assured through a systems based approach to design, sourcing, construction and testing of products manufactured by Power Economy, at all stages and throughout all processes.

Prior to and during the design process, we maintain close communication with our customers, listening to their requirements and proposing solutions to their needs. Once the final requirements are confirmed, our Design team will draft a preliminary plan of the product, based on the site requirements and coupled with best practices and the current global Electrical Standards.

Our quality team ensures conformity of the product to the policies and guidelines of the utilities/customers and countries and confirms observance of rigorous safety rules right from the design to realization of the installation.

Our quality team is well equipped with an array of all the necessary test instruments and conducts various tests right from those on sourced out components. Every test procedures is followed to ensure conformity of the final product to the policies and guidelines of the utilities/ customers and countries. Our quality team has a thorough knowledge of various standards followed by different countries and utilities.

To enhance our testing capabilities for high voltage and high current equipment Power Economy has established in-house facility for lightning impulse test up to 600kV peak. Temperature rise test and Ingress protection test labs established within the factory premises ensure delivered products actually undergo the service environment before they are delivered.

Power Economy is the ONLY Company in this region to have all these facilities in-house.

All business activities at Power Economy including manufacturing follows procedures certified for quality system ISO:9001-2000 and have certification of TUV.

In addition to this high quality drive within the company, for certain product validation processes Power Economy have conducted more than 40 type test at internationally recognized laboratories.

Gallery

12MVAR, 22kV Detuned Capacitor Bank, Al Falah community project for ADWEA, UAE

20MVAR, 33kV Detuned Capacitor Bank FAT for PDO Oman

22kV Medium Voltage Switchgear, Al Falah community project for ADWEA, UAE

6MVAR, 11kV Detuned Capacitor Bank for ADWEA, UAE

12kV 5MVAr Outdoor Capacitor banks with Iron core reactors for TNB, Malaysia

12MVAR, 22kV Capacitor Bank Control & Protection Panel SAT testing for ADWEA, UAE

5MVAR 11.5kV Capacitor Bank for DPC, OMAN

1200KVAR, 11kV Pole Mounted Capacitor Bank at Yiti for MEDC,Oman

22kV NGR & NGBS at New Airport for ADWEA, UAE

11kV Medium Voltage Switchgear at Deerfield town Square for ADWEA, UAE

Mobile Package Substation for FEWA

33/11kV Package Substation at Ariyam Island for ADWEA, UAE

33kV Combined Control & Relay Panels at Aziaba North-3 Primary Station for MEDC, Oman

400kV Protection Panels at Ajman Grid Station for ADWEA, UAE.

12MVAR, 11kV Detuned Capacitor Bank at ADNEC Site for ADWEA, UAE

132/33/11kV Substation at Massaffi for Federal Electricity & Water Authority (FEWA), UAE

Customers

شركة كهرباء مزون ش.م.ع.م
Mazoon Electricity Company S.A.O.C

شركة أبوظبي للتوزيع
Abu Dhabi Distribution Co.

ادنوك
ADNOC

شركة أبوظبي للعمليات البترولية البرية (أدكو)
Abu Dhabi Company for Onshore Oil Operations (ADCO)

الشركة العمانية لنقل الكهرباء ش.م.ع.م
OMAN ELECTRICITY TRANSMISSION COMPANY S.A.O.C

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority

مؤسسة الإمارات للطاقة النووية
Emirates Nuclear Energy Corporation

دولة الإمارات العربية المتحدة
الهيئة الاتحادية للكهرباء والماء
Federal Electricity & Water Authority

شركة ظفار للطاقة ش.م.ع.ع
Dhofar Power Company S.A.O.G

شركة مسقط لتوزيع الكهرباء
Muscat Electricity Distribution Co.

ADPC
شركة أبوظبي للموانئ

شركة تنمية نفط عمان
Petroleum Development Oman

تكرير
TAKREER
شركة أبوظبي لتكرير النفط

شركة العين للتوزيع
Al Ain Distribution Company

ME
وزارة الكهرباء

TAQA

هيئة مياه وكهرباء أبوظبي
Abu Dhabi Water & Electricity Authority

KAHRAMAA
كهرماء
المؤسسة العامة القطرية للكهرباء والماء
Qatar General Electricity & Water Corpotation

بروج
Borouge

الشركة السعودية للكهرباء
Saudi Electricity Company
Empowering Energy

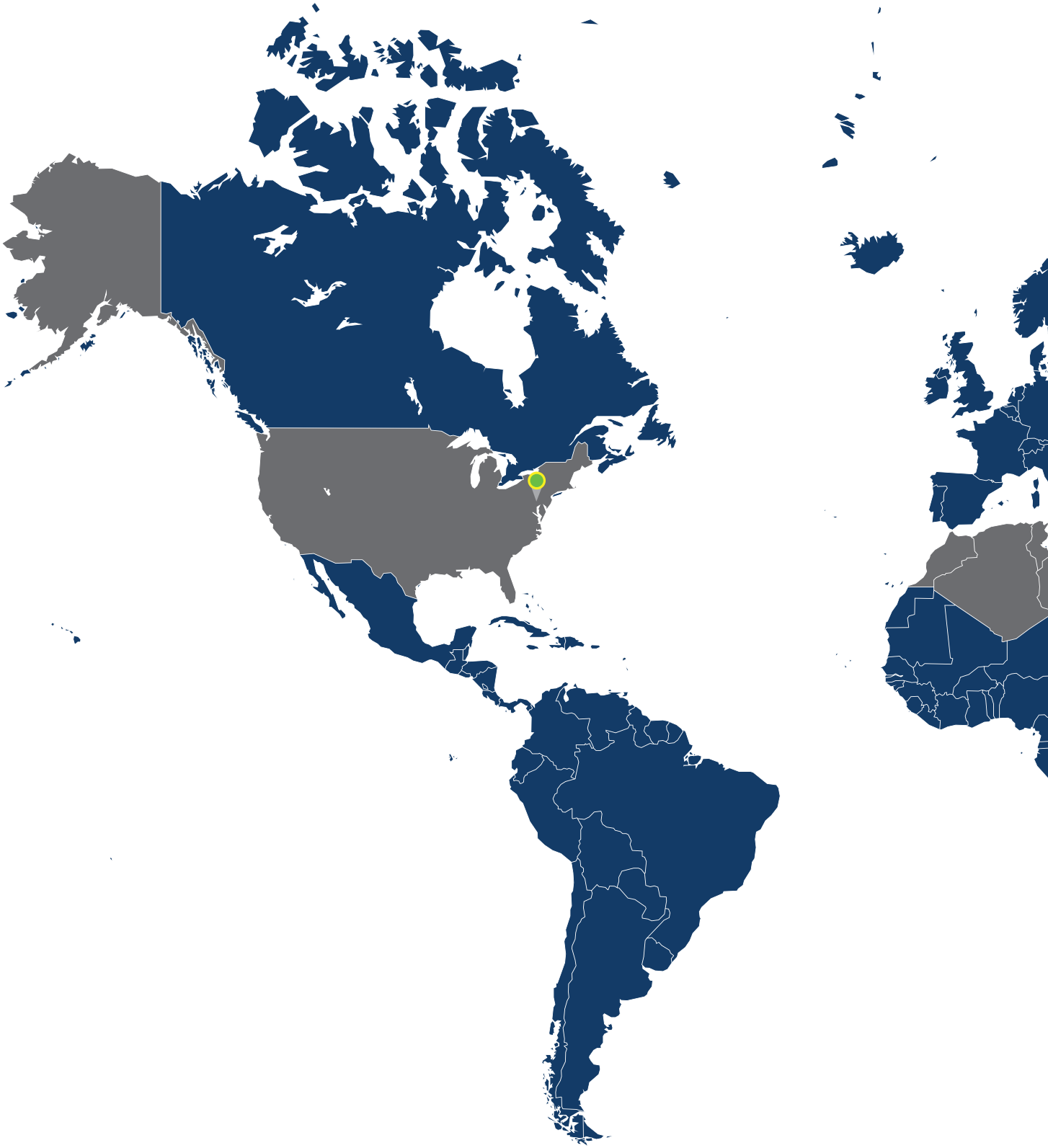
TENAGA NASIONAL

هيئة كهرباء ومياه الشارقة
Sharjah Electricity & Water Authority

شركة كهرباء مجان ش.م.ع.م
Majan Electricity Company (SAOC)

TRANSCO
شركة أبوظبي للنقل و التحكم
Abu Dhabi Transmission & Despatch Company

Rural Areas Electricity Company s.a.o.c
شركة كهرباء المناطق الريفية ش.م.ع.م



Our Offices

POWER ECONOMY MIDDLE EAST CO. L.L.C.
Abu Dhabi, UAE

POWER ECONOMY OMAN L.L.C.
Muscat, Sultanate of Oman

POWER ECONOMY USA LLC
Allentown, USA

PEI MALAYSIA SDN.BHD
Negeri Sembilan, Malaysia

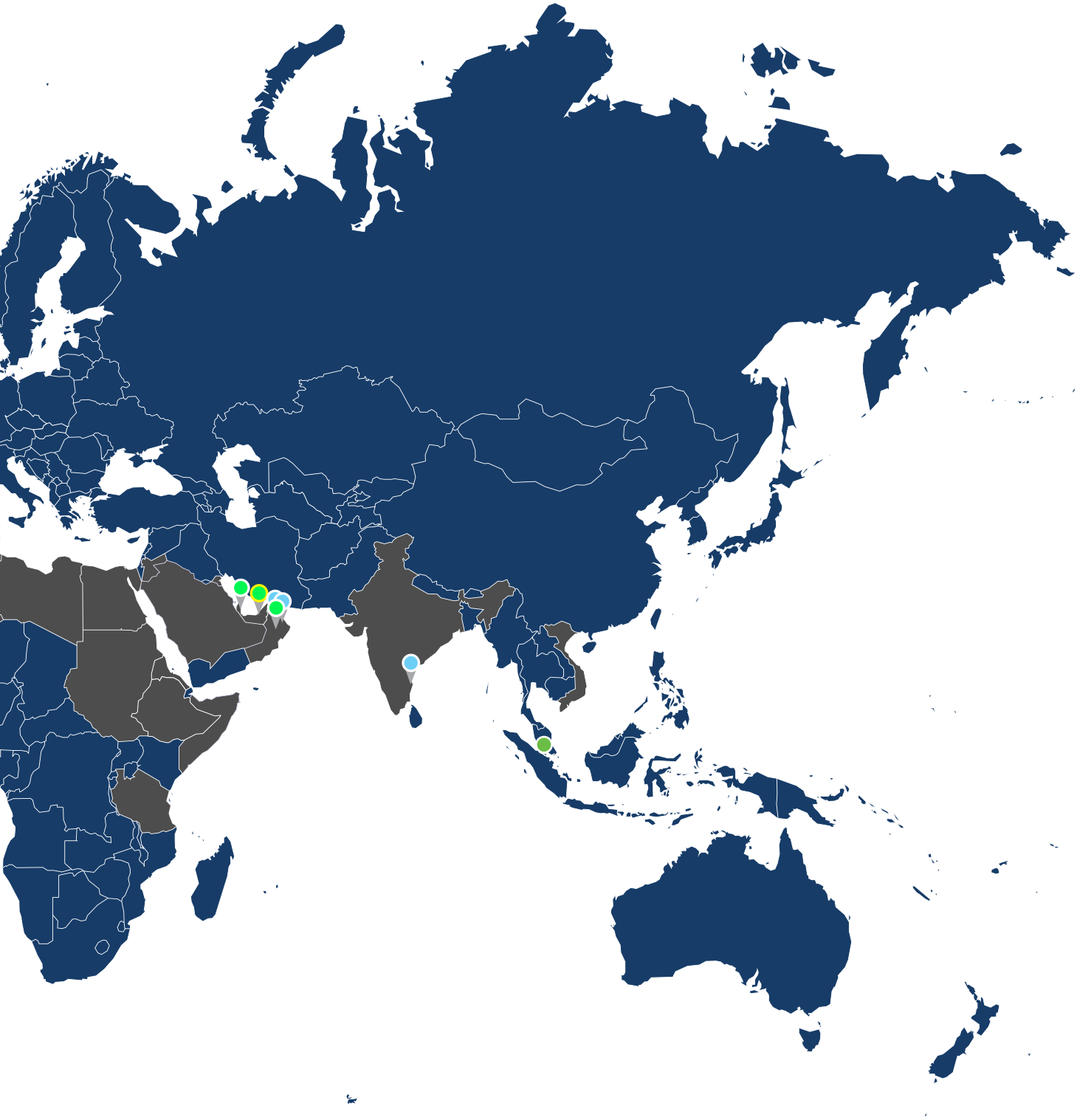
Our Group Companies

U.A.E.

MUSANDAM ELECTRICAL EQUIPMENT CO. LLC.
Abu Dhabi
ELECTRICAL SUPPLIES EST.
Abu Dhabi

Sultanate of Oman

AL MURAD INTERNATIONAL CO. LLC
Muscat
MAJAN SWITCHGEAR CO. LLC.
Sohar



Our Presence

USA

UNITED ELECTRIC SYSTEMS INC
Allentown

India

DEUTSCHLAND TRANSFORMERS PRIVATE LIMITED
Chennai
OHM ENERGY MANAGEMENT SYS PVT LTD
Chennai
Power Economy Electrical Engg. Pvt. Ltd.,
Chennai

UAE	Vietnam	Sudan
Oman	Morocco	Ethiopia
Qatar	Algeria	Somalia
Kuwait	Tunisia	Tanzania
Saudi Arabia	Libya	Eritrea
Jordan	Egypt	USA
Malaysia		

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E-mail: oman@powereconomy.net

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USA, Tel: +1-610 530 0109 Cell: +1-610 216 6626
Email: wongy.lee@powereconomy.net

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Nilai Utama Enterprise Park,
PO Box: 71800 Nilai
Negeri Sembilan, Malaysia
Tel : +60-6794 0200 Fax : +60-6794 0818
Email: sales@powereconomy.my

PREDICTIVE ENERGY INSTRUMENTS PVT. LTD.
S.V. Towers,
Anna Nagar West,
Chennai-600 040
Tamil Nadu, India
Tel: +91 44-4559 0118
Email: info@predictiveenergy.in

UTILITIES SERVED:

TAQA/ADWEA (ADDC, AADC & TRANSCO), UAE
SEWA, UAE
ETIHAD WE (FEWA), UAE
DEWA, UAE
Muscat Electricity and distribution Co., Oman
Mazoon Electricity Distribution Co., Oman
Majan Electricity and Distribution Co., Oman
OETC, Oman
RAECO, Oman
DPC, Oman
KharaMaa, QATAR
Saudi Electricity Co, K.S.A
National Electricity Corporation, SUDAN
MEW IRAQ
Nigerian utility
TNB Malaysia

COMMERCIAL SEGMENTS SERVED:

Hotels complexes
Office complexes
Residential complexes
Shopping malls

OIL & GAS:

Abu Dhabi company for onshore oil operation
GASCO, Abu Dhabi
ADCO, Abu Dhbai
NPCC, Abu Dhabi
Petroleum development, Oman
Occidental, Oman
ORPC, Oman
Egyptian petrochemicals co., Egypt
FPCC refinery project, Taiwan

INDUSTRIES SERVED:

Cement production
District cooling
Aluminium production
Steel melt shops
Steel rolling mills
Sugar production
Water pumping stations

RENEWABLE SECTOR:

ENEC, UAE

Reactive power compensation solutions

Enhancing power quality

Who we are?

POWER ECONOMY is one of the market leaders in the Middle-East region for more than a decade in design, engineering, manufacture and supply of a wide range of low, medium and high voltage products & solutions that enhance the quality & reliability of power from LV to EHV systems.

Our Reactive Power Compensation, Distribution, Control & Protection, Automation and Metering solutions are developed through constant research and market innovation and cater to the needs of power transmission and distribution networks in Middle-East and Africa.

We offer solutions for both conventional & smart power networks in the domestic and international T&D business.

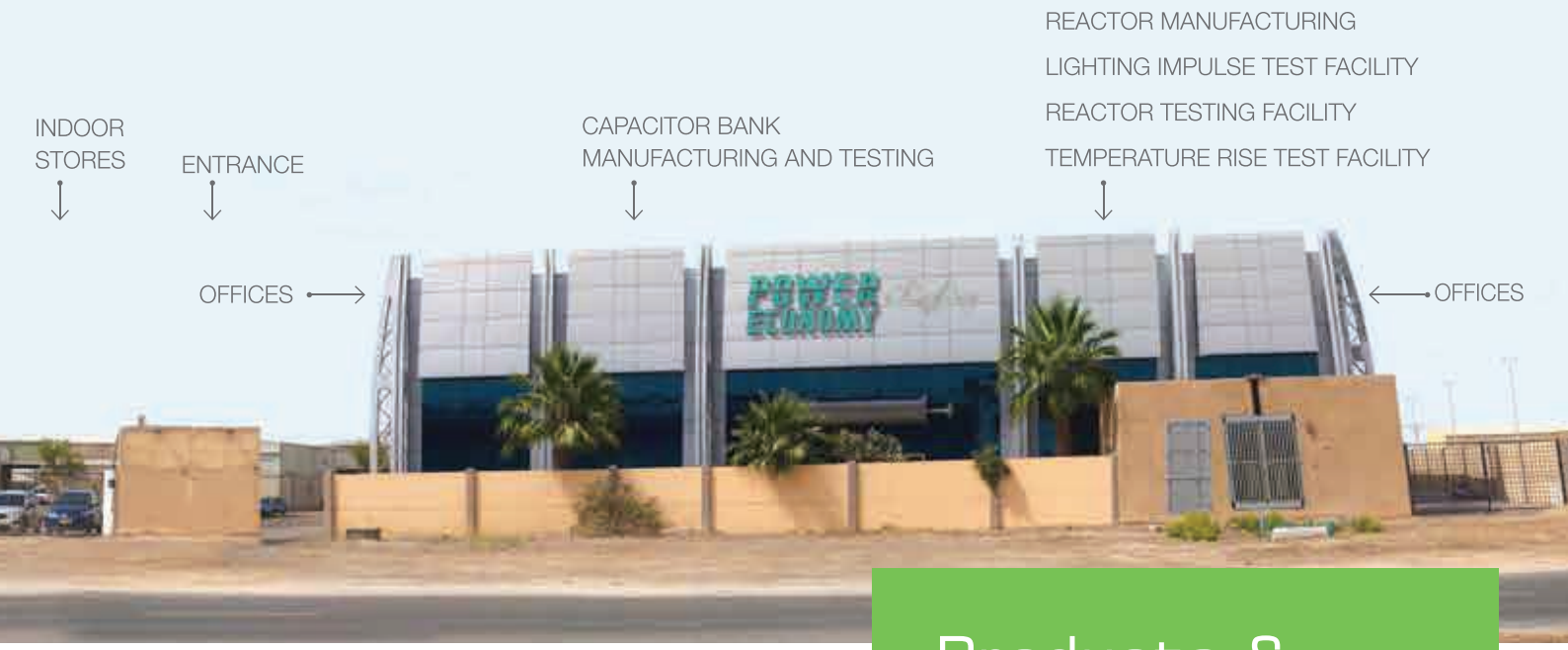
At Power Economy, we strongly believe that our success and growth are direct derivatives of 'Customer Satisfaction' achieved through quality products delivered within time and cost frame.

Our solutions, developed through constant innovation and research, benefit the customers by cutting down costs, improving efficiency and help them to achieve almost nil downtime.

We always ensure our innovation leads to environmental preservation through our energy-efficient products along with long term corporate responsibility efforts.

Power Economy assures quality of all its products and services. Business process of Power Economy is certified for ISO: 9001-2008 by TUV NORD.

TÜV NORD
ISO: 9001-2008



Manufacturing facility

- 16000 sq.m. State-of-the-art manufacturing facility in the industrial city of Abu Dhabi, UAE
- ERP system for work flow control and project management

People

- Core design team with more than 350 man-years of experience in power sector across all the 3 continents -Asia, Europe and North America.
- 150+ qualified workforce with more than 75 engineers.

Design

- PSCAD & ETAP for switching and harmonic study
- ELEC DES & AUTOCAD for Drawings & BOM preparation
- Maxwell 2D for magnetic field plots

Products & solutions

Our motto is 'Customised solutions through Engineering excellence'.

Our products and solutions are designed and manufactured by a team of highly experienced technocrats and developed with components sourced mainly from manufacturers in Europe, Japan and US & also reputed firms from rest of the world. This ensures not just quality and reliable power distribution but sets the benchmark for overall power quality in any region we work with.

- Reactive power compensation
- MV power distribution
- LV power distribution
- Control & protection
- Substation automation
- Advanced metering
- Site support
- Training facility

Reactive power compensation solutions

- Solution for primary and secondary distribution systems of 3.6kV to 36kV voltage level
- Indoor or outdoor type installations with metal enclosed and open rack designs
- Current inrush limiting and detuned type designs with air or iron core reactors
- Fixed or switched type of designs with automatic control
- Low capacity Air core shunt reactors
- Type tested solutions as per IEC60871, IEC62271-200 and IEC60076-6
- Customised solutions engineered as per specific needs

Solutions

- Outdoor metal enclosed capacitor banks with air core series reactors
- Indoor metal enclosed capacitor banks with iron core series reactors
- Control and protection panels for capacitor banks
- Outdoor and Indoor capacitor banks of open execution type
- Outdoor capacitor banks for rural electricity distribution
- Air core reactors
- Iron core reactors
- Indoor metal enclosed automatic LV capacitor bank

Features

- Outdoor or Indoor type enclosures with steel base frame
- Outer skeleton of welded angle frame
- Cladding by 2/3mm sheet steel doors and covers painted with epoxy or polyester powder paint
- Gaskets used for providing required IP rating in outdoor type designs
- Canopy provided by additional steel sheets on top providing natural air column for heat protection
- All cable termination on bottom with aluminium gland plates
- Open rack and pole mounted solutions with high creepage distances
- Internally or externally fused capacitor units
- Type tested switching devices validated for back to back switching capability
- Naturally cooled enclosures with high IP ratings
- Electrical & mechanical interlocks for safe operation
- Option of stages to be segregated with through type bushings
- Option of outdoor type detuning reactors to be installed in separate FRP enclosure
- Indoor control and Protection panel engineered for specific protection and control needs

Technical particulars	
Rated voltage	3.6kV to 36kV
Rated frequency	50Hz/60Hz
Rated peak withstand current	up to 80kA peak
Rated short time withstand current for busbars	up to 31.5kA/3sec
Power frequency withstand voltage	up to 70kV (60sec)
Lightning impulse withstand voltage	up to 170kV peak
Degree of protection for enclosure	up to IP55
Maximum design ambient temperature	up to 55°C

Type testing

The capacitor bank solutions are type tested, as relevant for following tests as per IEC60871 and IEC62271-200. Our Rectors are type tested as per IEC60076-6.

- Short time withstand current test on main circuit
- Short time withstand current on earth circuit
- Impulse voltage withstand test
- Power frequency voltage withstand test
- Temperature rise test
- Ingress protection test

TESTING ACTIVITIES

POWER ECONOMY MIDDLE EAST CO. LLC

Two three-phase air core tuning reactor setups of from Power Economy Middle East Co. LLC, Abu Dhabi, UAE, successfully passed short-circuit tests at KEMA Laboratories, Arnhem. One horizontal arrangement and one stacked-up arrangement have proven to withstand short-circuit tests including routine tests. With this success they are entitled to receive short-circuit certificates based on IEC 60076-6. These two setups will be put in service in the system owned by National Grid, Riyach, Saudi Arabia.


HAEFELI

Impulse voltage withstand testing

Verification of basic insulation levels for lightning impulse voltage withstand can be verified at in-house impulse test laboratory of Power Economy. The test setup can test till 600kV, 60kJ of lightning impulse. Capacitor banks are tested as type test on busbars for impulse voltage withstand. All reactors are tested as routine test for with stand of lightning impulse for the required BIL.

INGRESS PROTECTION TEST

WATER PROTECTION TEST

Ingress protection testing

Outdoor type enclosures supplied by Power Economy are verified for stringent ingress protection requirements of IP54 and IP55. Type test is conducted on metal enclosures for validation of required IP rating. The in-house ingress protection test lab is equipped to test up to digit 6 for dust and up to digit 5 for water protection.


CURRENT INJECTION
BUSBARS
TEST OBJECT

Temperature rise testing

Capacitor bank solutions can be type tested for temperature rise test. The test setup can inject till 5000A of busbar currents. Temperature from thermocouples are recorded using automatic temperature data logger.

Training centre

Power Economy has built ultra modern training centre along with functional display centre to provide hands on training to its client. The main training room suitable for 30 trainees is installed with modern audio visual system for providing class room trainings.

The training centre is also attached with a functional display centre with products connected to simulated supplies. The training centre is equipped to provide complete multi-dimensional trainings to client on subjects of application, operation, control, protection and maintenance of various Power Economy products.

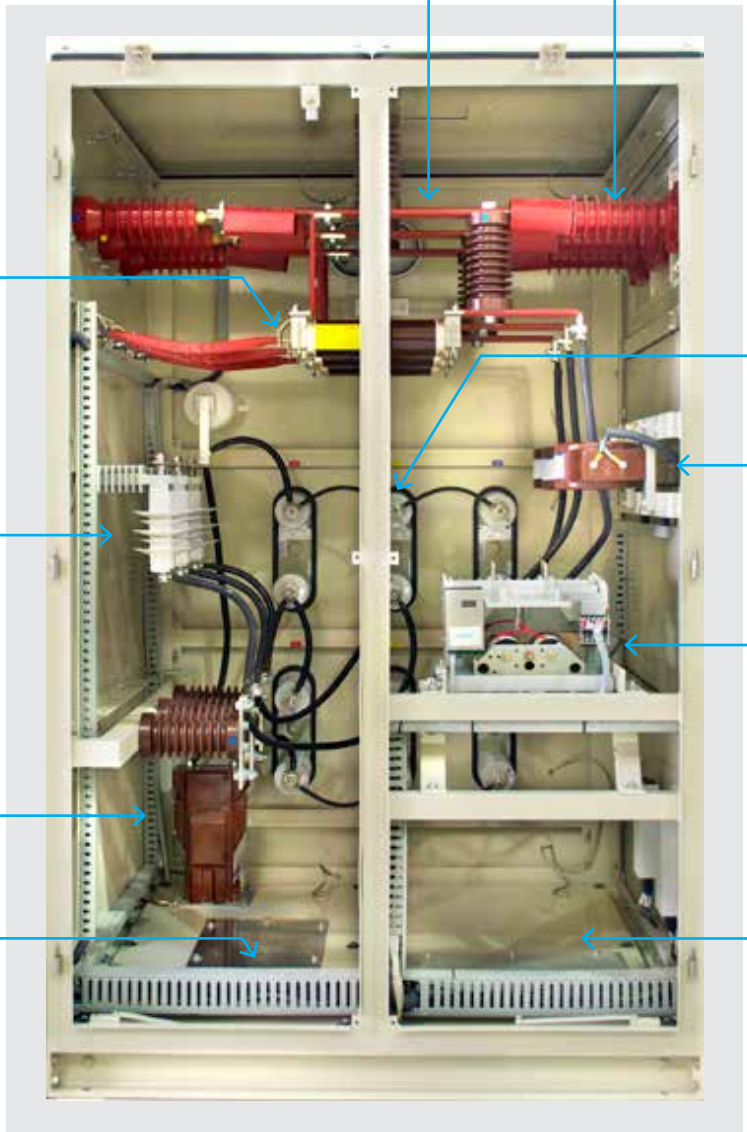
Outdoor metal enclosed capacitor banks with air core series reactors

General specification

These designs are intended for outdoor installation of capacitor bank solutions and are well suitable for multistage configuration. Due to the advantage of natural cooling these can be installed outside the substation building saving considerable cost. The factory assembled capacitor banks in metal enclosures of high ingress protection results in less installation cost and maintenance.

The outdoor metal enclosed capacitor banks are equipped with air core series reactors which can be of detuning or inrush current limiting type. Detuning reactors are installed outside the metal enclosures and can be provided with non-metallic housing for wild life protection and aesthetic.

Control, alarm and protection functions are provided by well engineered indoor panel of floor standing or wall mounted type.


BUS BARS
INTER COMPARTMENT THROUGH BUSHINGS
HRC FUSES
INTERNALLY FUSED CAPACITOR UNITS
OVERLOAD PROTECTION CTs
SURGE ARRESTERS CONNECTED ACROSS CAPACITOR UNITS
CAPACITOR SWITCHING DEVICE
UNBALANCE PROTECTION CT
GLAND PLATE FOR CABLES FROM SERIES REACTORS
GLAND PLATE FOR CABLES TO SERIES REACTOR


CAPACITOR STAGE 2
CAPACITOR STAGE 3
CAPACITOR STAGE 4

Outdoor metal enclosed capacitor banks with air core series reactors

As installed

Outdoor metal enclosed capacitor banks can be installed in various conditions depending on layout and location of substation. Below are some of the typical installation cases

- On ground with chain fence for operational safety
- On roof top for space saving in compact substations
- With reactors in FRP enclosures generally preferred in residential areas for aesthetic

METAL ENCLOSED CAPACITOR BANK

3NOS AIR CORE SERIES REACTORS IN FRP ENCLOSURE

4nos. outdoor metal enclosed 12kV, 6MVAr @ 11kV, Multi stage switched, capacitor banks with air core series reactors at 33kV/11kV substation.

4nos. outdoor metal enclosed 24kV, 12MVAr @ 22kV, multi stage switched, capacitor banks with air core series reactors on roof of 132kV/22kV substation

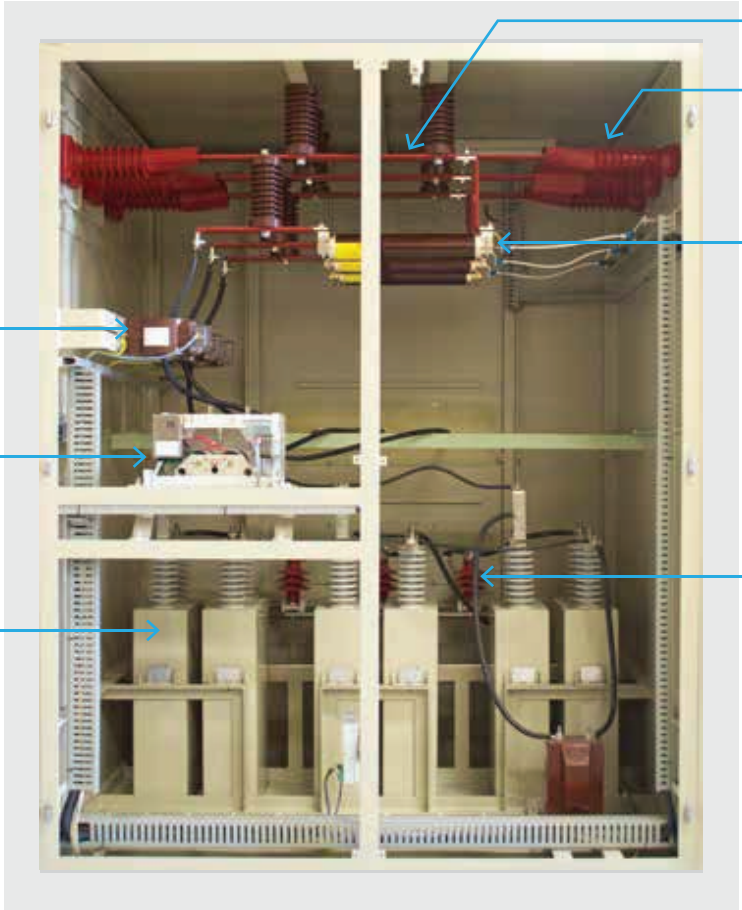
Indoor metal enclosed capacitor banks with iron core series reactors

General specification

These designs are intended for indoor installation of capacitor bank solutions and are well suitable for multistage configuration. Being in indoor environment forced cooling is required which is mostly provided by building air conditioning. The iron core reactors can be installed inside or outside the capacitor bank enclosure. The factory assembled capacitor banks in metal enclosures results in less installation cost and maintenance.

The indoor metal enclosed capacitor banks are equipped with iron core series reactors for detuning requirements. In case of inrush current limiting requirements reactors are of air core design.

Control, alarm and protection functions are provided by well engineered indoor panel of floor standing or wall mounted type which is installed in separate location for operational safety.


BUSBARS
INTER COMPARTMENT THROUGH BUSHINGS
HRC FUSES
OVER LOAD PROTECTION CTs
CAPACITOR SWITCHING DEVICE
SURGE ARRESTORS CONNECTED ACROSS CAPACITOR UNITS
CAPACITOR UNITS


CAPACITOR STAGE 2
CAPACITOR STAGE 3

Indoor metal enclosed capacitor banks with iron core series reactors

As installed

Indoor metal enclosed capacitor banks can be installed in various conditions depending on layout and location of substation. Below are some of the typical installation cases

- In separate room for operational safety. In this case control and protection panel is installed outside the room
- In bays with chain fence separating the capacitor banks.

Indoor 12kV, 6MVAr @ 11kV multistage switched capacitor bank with iron core series reactor at 33kV/11kV substation


Descriptive text about this installation to come here

Control and protection panels for capacitor banks

All Power Economy capacitor banks of metal enclosed designs are supplied with specifically engineered control and protection panel with dedicated automatic power factor or voltage controller. Sophisticated control, alarm and protection schemes can be provided to meet requirements of client specifications. Control and protection panels can be of floor or wall mounted type.

Multistage capacitor banks are protected by dedicated and exclusively designed protection relay which takes care of harmonic currents flowing into capacitors using true rms based over-current protections and neutral unbalance protection with natural unbalance compensation. Control and protections panels can also be installed with communication equipment based on substation requirements.


SIEMENS

Outdoor and Indoor capacitor banks of open execution type

General specification

These designs are intended for both outdoor and indoor installation with switching by substation switchgears. Capacitor banks are made of series and parallel connected capacitor units on insulated/floating frames. The single phase capacitor bank and reactor can either be installed as vertical stack or in side by side arrangement.

Open execution type capacitor banks are well suitable for bulk compensation at higher voltage levels including EHV system and can be designed to suit client specifications. These can be of inrush current limiting or detuned design. Multistage concept in open execution is also possible with dedicated switching module of outdoor installation type.

Control, alarm and protection functions are provided by well engineered indoor panel of floor standing or wall mounted type which is installed in separate location for operational safety.

Outdoor 36kV, 20MVAr @ 33kV capacitor bank with air core series reactors ready for factory acceptance testing

Outdoor 36kV, 20MVAr @ 33kV capacitor bank with air core series reactors ready for factory acceptance testing

Outdoor 13.8kV, 7MVAr capacitor bank with air core series reactors

Outdoor and Indoor capacitor banks of open execution type

As installed

Open execution capacitor banks can be installed in various conditions depending on layout and location of substation. Below are some of the typical installation cases

- In separate room for operational safety. In this case control and protection panel is installed outside the room
- In bays with chain fence separating the capacitor banks
- As individual installation with chain fence for operational safety

8nos. Indoor 36kV, 5MVAr @ 33kV,capacitor banks with air core series reactors in 220kV/33kV substation.

Outdoor 36kV, 20MVAr @ 33 kV, capacitor bank with air core series reactors in 132kV/33kV substation

Outdoor capacitor banks for rural electricity distribution

General specification

These designs are outdoor installation and are well suitable for small to medium capacity reactive power compensation for rural distribution lines. These simpler and cost effective designs can be of either pole mounted or pad mounted type.

The pole mounted solutions are factory assembled and can be installed on single or H pole of wood, concrete or steel material and are associated with drop-out fuses and automatic power factor controller.

Pad mounted capacitor banks can also be of medium capacity and are factory assembled. Being on ground they are easy to access for installation, operation and maintenance purpose. Also for higher ratings they can be provided with dedicated over-current and neutral unbalance protections along with remote communication equipment.

Padmounted 12kV, 0.75MVAr @ 11kV, switched capacitor bank in overhead line distribution network

Pole mounted 12kV/900KVAr @ 11kV switched capacitor bank in overhead line distribution network

Air core reactors

Air core reactors are suitable for indoor/outdoor installation. Reactor coils are braced between top and bottom aluminium spiders. These reactors are mounted on porcelain post insulators. These are single phase units, which can arranged in stacked or trefoil layout to make 3-phase reactors.

Inrush current limiting type reactors are also air core type with installation on epoxy resin cast/Porcelain insulators and are suitable for indoor/outdoor installation.

Applications of air core reactors

- Detuning reactors
- Neutral grounding reactors
- Inrush current limiting reactors
- Low capacity shunt reactors

Technical particulars	
Rated Voltage	3.6kV to 36kV
Rated frequency	50Hz/60Hz
Power frequency withstand voltage	20kVrms up to 95kVrms
Lightning Impulse withstand voltage	60kV peak to 250kV peak
Design ambient temperature	35°C to 55°C
Conductor	Copper/Aluminium
Insulation	Polyester/Fibre Glass
Encapsulation	Epoxy resin/Polyrethane

Detunning reactors

Inrush current limiting reactors

Iron core reactors

Iron core reactors can be installed on floor or inside the enclosure of capacitor bank. High grade magnetic material laminates are used to prepare core material, which is then assembled in 3-phase magnetic circuit. Prewound single phase poles are then installed to make 3-phase reactors. Polyester film coated copper/Aluminium conductors are used to prepare winding. After coil testing, these are finished with varnish and painted before final tests.

All reactor designs are verified by type testing impulse voltage withstand and temperature rise. All manufatured reactors are subject to routine tests as required by applicable IEC standards.

Technical particulars	
Rated Voltage	3.6kV to 12kV
Rated frequency	50Hz/60Hz
Power frequency withstand voltage	20kVrms upto 38kVrms
Lightning Impulse withstand voltage	60kV peak to 95kV peak
Design ambient temperature	35°C to 40°C
Conductor	Copper
Insulation	Polyester/Fibre Glass
Encapsulation	Epoxy resin/Polyrethane

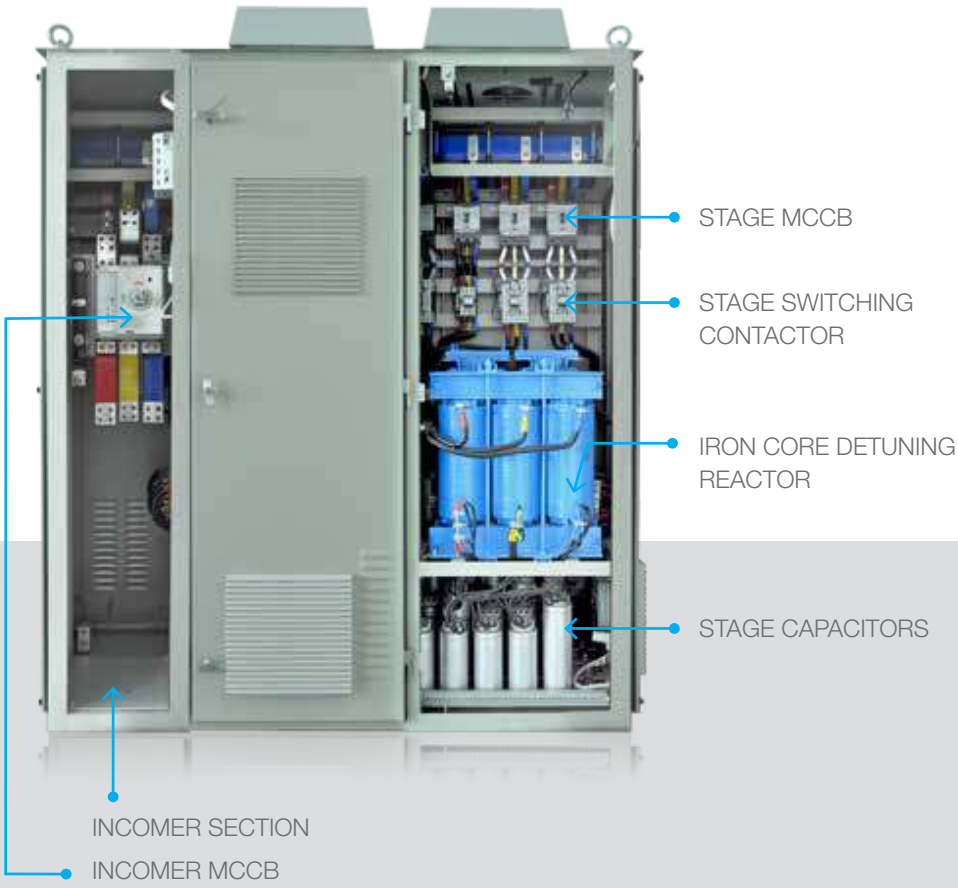

REACTOR
STORAGE

Indoor metal enclosed automatic LV capacitor bank

These designs are of indoor installation and are well suitable for small to medium capacity reactive power compensation for low voltage distribution substations. Steady state reactive power compensation solutions are provided with contactor for stage switching and also MCCB is used for short circuit and over-current protection. Thryristor switching is used for dynamic reactive power compensation type capacitor banks.

Both the above designs can be of multiple stages with detuning series reactors of iron core design. Incoming to the capacitor bank can be either cable or busduct. MCCB and Isolator are provided on incoming supply for protection and isolation purpose.

Low voltage contactor switched 500kVAr, 6 stage capacitor bank with iron core detuning reactors



Low voltage thyristor switched 1500kVAr, 14 stage capacitor bank with iron core detuning reactors

Site Support

Power Economy offers a broad range of field support services. As a customer you may have diverse needs on site service, based on the type and size of your electrical installation. These are well addressed by Power Economy's SITE SUPPORT team.

We have a team of committed and competent engineers who can offer quality service and value through proper analysis and requirement within your framework.

The host of services offered are well tailored to customer needs and their equipment lifecycle phase.

- 24/7 Support
- Corrective & Preventive Maintenance outsourcing
- Site Appraisal
- Spares Management
- Training
- Telephonic Support
- Site inspections
- Power quality and verification services with harmonic analysis and recommendation for improvement
- Upgradation, revamping, retrofitting and modification of the existing system.
- Extensions and adaptations to the existing system
- Replacements
- Service Agreements to ensure uninterrupted operations
- Trainings programs customized to your needs
- Reduce operation costs by outsourcing corrective and preventive maintenance to us
- System improvement and equipment performance study
- Extension, Upgrades and Retrofits
- Site installation and Testing & Commissioning
- Emergency on-site repairs

Gallery

Outdoor metal enclosed, 6MVAr @ 11kV detuned capacitor bank for ADPC, UAE

Outdoor metal enclosed, 6MVAr @ 11kV detuned capacitor bank for ADDC, UAE

Indoor metal enclosed, 1500kVAr, Thyristor switched, LV detuned capacitor bank for Sohar Steel, Oman

Outdoor metal enclosed, 5MVAr @ 11kV detuned capacitor bank for MZEC, Oman

Outdoor 36kV air core detuning reactors for SEWA, UAE

Outdoor metal enclosed, 20MVAr @ 33kV detuned capacitor bank for OETC, Oman

Pole mounted, 600kVAr @ 11kV capacitor bank for AADC, UAE

Outdoor metal enclosed, 20MVAr @ 33kV detuned capacitor bank for SEWA, UAE

Outdoor metal enclosed, 6MVAr @ 11kV detuned capacitor bank for ADWEA, UAE

Open execution, 7MVAr @ 13.8kV detuned capacitor bank for SEC, KSA

Outdoor metal enclosed, 12MVAr @ 11kV detuned capacitor bank for ADWEA, UAE

Customers

Utilities

Abu dhabi Water & Electricity Authority (ADWEA), UAE

Abu dhabi Distribution Co (ADDC), UAE

Al-ain Distribution Co (AADC), UAE

Abu dhabi Transmission & despatch Company (TRANSCO), UAE

Sharjah Electricity & Water Authority (SEWA), UAE

Federal Electricity & Water Authority (FEWA), UAE

Muscat Electricity and Distribution Co (MEDC), Oman

Mazoon Electricity and Distribution Co, Oman

Majan Electricity and Distribution Co, Oman

Oman Electricity Transmission Company, (OETC), Oman

Rural areas Electricity Company (RAECO), Oman

Dhofar Power Company (DPC), Oman

Kahramaa, Qatar

Saudi electricity Co, K.S.A.

National Electricity Corporation, Sudan

Abu dhabi Ports (ADPC), UAE

Kenya Power and Lighting Company, Kenya

Kenya Electricity Transmission Co.Ltd. (KETRACO), Kenya

Ministry of Electricity, IRAQ

Dubai Electricity & Water Authority (DEWA), Dubai

Emirates Nuclear Energy Corporation (ENEC), UAE

Ministry of Electricity and Water (MEW), Kuwait

Tenaga Nasional Berhad

Industries

- Petro chemical units
- Cement production units
- Aluminium production units
- Sugar manufacturers
- Steel melt shops & rolling mills
- District Cooling
- Water pumping stations

OIL & GAS

Abu Dhabi Company for onshore Oil Operation (ADCO), Abu Dhabi

GASCO, Abu Dhabi

NPCC, Abu Dhabi

Occidental Petroleum Corporation

Petroleum Development, Oman

Oman Oil refineries & Petroleum Industries (ORPIC), Oman

Egyptian Petrochemicals co., Egypt

Formosa Petrochemicals Corporation, Taiwan

Abu dhabi National Oil Company(ADNOC), Abu Dhabi

Abu dhabi Oil refining Company(Takreer), UAE

Borouge, Abu Dhabi

Kuwait oil company, Kuwait

Contractors

Larsen & Toubro (L&T)

ETA GROUP

Bahwan Engineering Group

Galfar Engineering & Contracting SAOG

Ghantoot Group

Aljaber Group

National Contracting Company (NCC)

Siemens

ABB

Alstom

Inabensa

Hyundai

Commercial

- Hotel complexes
- Office complexes
- Residential complexes
- Shopping malls

Our Offices

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Muscat, Sultanate of Oman

POWER ECONOMY USA LLC
Allentown, USA

PEI MALAYSIA SDN.BHD
Negeri Sembilan, Malaysia

Our Group Companies

UAE

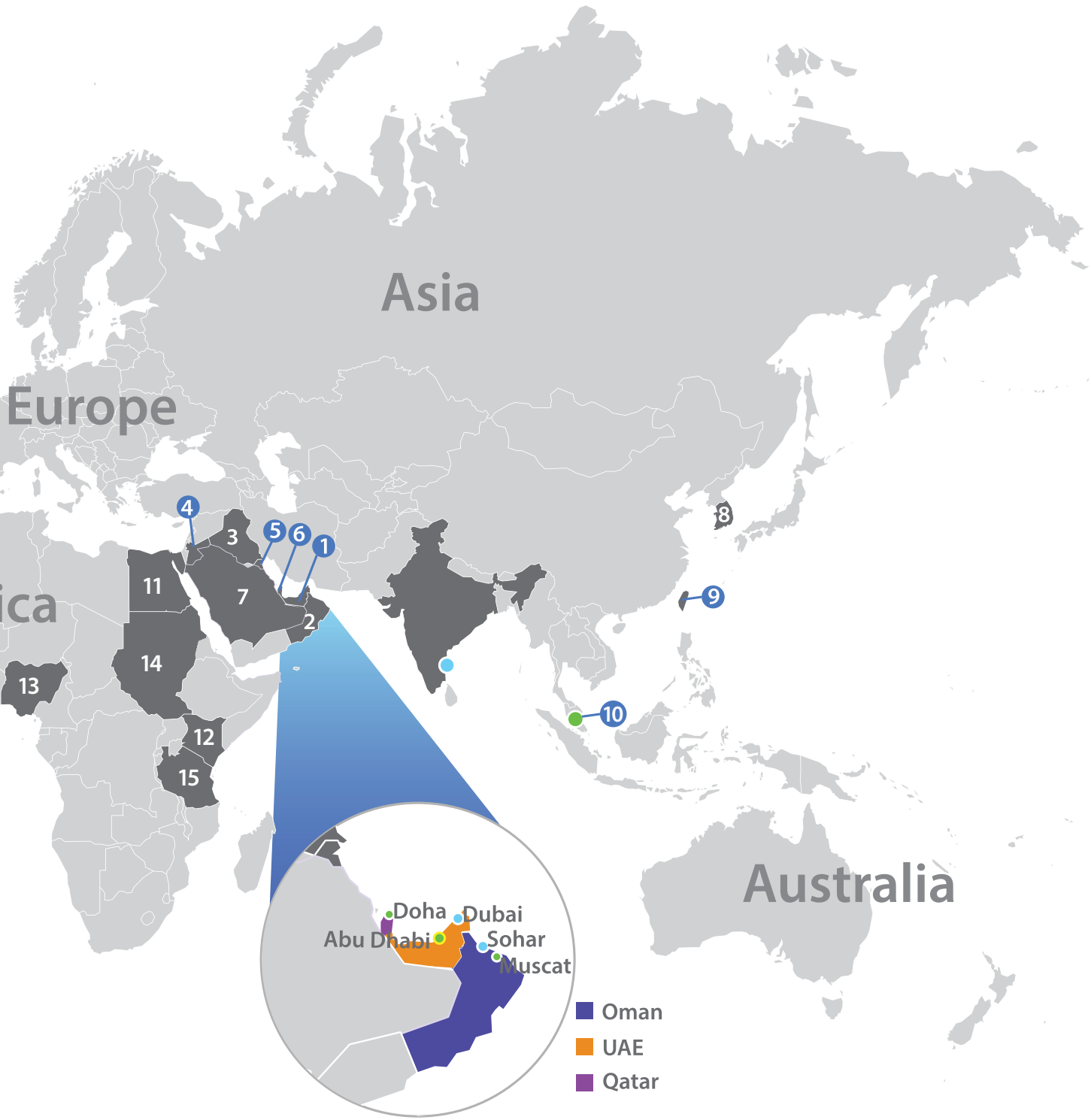
MUSANDAM ELECTRICAL EQUIPMENT CO. L.L.C.
Abu Dhabi

ELECTRICAL SUPPLIES EST.
Abu Dhabi

Sultanate of Oman

MAJAN SWITCHGEAR CO. L.L.C.
Sohar

AL MURAD INTERNATIONAL CO. L.L.C.
Muscat



Our Presence

USA
UNITED ELECTRIC SYSTEMS INC.
Allentown

India
OHM ENERGY MANAGEMENT SYSTEM PVT. LTD.
Chennai

DEUTSCHLAND TRANSFORMERS PVT. LTD.
Chennai

POWER ECONOMY ELECTRICAL ENGG. PVT. LTD.
Chennai

Asia
1. UAE
2. Oman
3. Iraq
4. Jordan
5. Kuwait
6. Qatar
7. Saudi Arabia
8. South Korea
9. Taiwan
10. Malaysia

Africa
11. Egypt
12. Kenya
13. Nigeria
14. Sudan
15. Tanzania

North America
16. USA

South America
17. Suriname

POWER ECONOMY MIDDLE EAST CO. L.L.C

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E-mail: oman@powereconomy.net

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Cell: +1-610 216 6626
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Tel : +60-6794 0200
Fax : +60-6794 0818
Email: sales@powereconomy.my

PREDICTIVE ENERGY INSTRUMENTS PVT. LTD.
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Tamil Nadu, India
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Email: info@predictiveenergy.in

www.powereconomy.net

Control & Protection Panels

Enhancing Power Quality

Who We are?

POWER ECONOMY is one of the market leaders in the Middle-East region for more than a decade in design, manufacture and supply of a wide range of low, medium and high voltage products & solutions that enhance the quality & reliability of power from LV to EHV sytems.

Our Reactive Power Compensation, Distribution, Control, Protection, Automation & Metering solutions are developed through constant research and market innovation and cater to the needs of power transmission and distribution networks in the Middle-East and Africa.

Today the company is offering its solutions for both conventional & smart power networks in the domestic and international T&D business.

At Power Economy, we strongly believe that our success and growth are direct derivatives of 'Customer Satisfaction' through quality products delivered on time and on budget.

Our solutions, developed through constant innovation and research, benefit our customers by cutting down cost, improving efficiency and help them to achieve almost nil downtime.

We always ensure our innovation leads to environmental protection through our energy-efficient products along with long term corporate responsibility efforts.

Reactive power compensation

LV Power distribution

MV Power distribution

Control &

Products & Solutions

Our motto is 'Customised solutions through Engineering & Design'.

Our products and solutions are designed and manufactured by a team of highly experienced technocrats and developed with components sourced mainly from manufacturers in Europe and US & also reputed firms from rest of the world. This ensures not just quality and reliable power distribution but sets the benchmark for overall power quality in any region we work with.

Protection

Substation Automation

Advanced Metering

Site Support

Control and Protection Panels

Power Economy's state of the art control & protection panels are engineered to meet the ever-changing needs of the power industry. We offer reliable, efficient and intelligence solutions for control and protection needed for Utility sector covering Generation, Transmission and Distribution network, Heavy and medium power industries, oil and Gas sector, primary and secondary distribution systems etc.

We design, engineer, manufacture, conduct factory routine tests on C&R panels, conduct site test and commissioning services, undertake special engineering services to meet clients/ engineers needs.

Product Range

- Protection control and relay panels, for MV/HV/EHV system up to 400kV & above
- Process control Instrumentation panels for Process Industries, Pumping Stations and Oil & Gas fields
- Under Frequency load shedding panel
- Mosaic panels, control desks with large screen projection system
- Local control cubicles for GIS switchgears
- SCADA marshalling Panels and local interface panels for RTU, SCS, SCMS
- RTCC (remote tap change control cubicle)
- Pilot wire marshalling and Isolation transformer marshalling cubicles
- Sequence control and annunciator panels
- Generator control, monitoring and protection panels and control desks with single slope or double slope type
- Specific tailor made and non-standard panels for retrofitting and matching for existing S/S
- Demo unit panels with various protection IED and bus system, to train utility and contractors application and T&C engineers.

Services

- Engineering services covering C.T. sizing calculations for protection relays, preparation of engineering drawings like General arrangement drawings, Schematic drawings, Cable/terminal schedules, and substation engineering services
- Protection setting calculations both unit and graded protection calculations
- S/S fault level calculations using internationally recognised software in accordance with IEC regulations
- Erection, testing and commissioning services
- Retrofitting engineering services including supplies

Construction/Packaging

- Combined Control and Relay Panels with fixed 19" relay mounting frame with front viewing door for relay portion
- Protection Relay Panels with fixed/ swing type relay mounting frame with front and rear doors.
- Pullout cum swing type panels for Synchronizing equipment
- Cubicles manufactured from Electro-Galvanized Phosphated and Chromated sheet steel, and painted with powder coating to required color shade
- Panels can be supplied with IP42 to IP55 ingress protection class
- Panels for Indoor and outdoor applications
- Dead front end panels/ Single slop/Double slope control panels/ Simplex and duplex type panel Tailor made panels for retrofit work

Features

- Panels built with protective relays and systems as per approved component for 400kV/220kV/132kV/33kV systems
- Use of approved control and auxiliary component to meet the highest standards and internal wiring as per international standards using color coded wires, with ferrule systems as per utility requirement
- Approved terminals for CT/VT circuits, CT circuit shorting facility, isolation, test sockets for external testing, disconnect type control terminals for SCADA circuits
- Mimic layout diagram with computerized mimic symbols with PVC strips
- Systematic labels for circuits bays, front and rear mounted equipment
- 100% testing including IR/HV/IR, functional tests on relays and circuits

Cliental Approvals:

- Approved C&R products supplier to UAE utility sector for TAQA/ADWEA (TRANSCO, ADDC. AADC), ETIHAD WE (FEWA) SEWA and executed several 400 kV/220kV/132kV/33kV projects.
- Approved C&R product supplier in Oman for OETC, MEDC, Mazoon, RAECO, PDO, DPC & MAJAN
- Approved panel integrator for MNC companies like Siemens, ALSTOM Grid, ABB, Schneider Electric and other leading OEMs.
- Approved suppliers of C&R panels up to 400kV system
- Preferred C&R product suppliers to Major EPC'S like Hyundai, Samsung, LnT, Toshiba, Galfar (Oman), BEC (Oman), NCC etc.

Technical Details	
Degree of protection for enclosure	IP42 to IP55
Design ambient temperature	35°C to 55°C
Overhead lines, Cable Feeder, Transformer, Bus Section & Bus Coupler Schemes.	
Busbar protection schemes	
Under frequency and loading shedding schemes	
Generator protection schemes	

Floor Mounted Enclosures

- Designed to provide IP 55
- Sizes ranging from 1600mm height to 2000mm height
- Removable concealed hinges with 120 degree openability
- Welded earth stud
- Wide bottom gland opening for cable entry
- Metal reinforcement stiffener on the inside of the door also serves
- effective gasketting for ingress protection
- 3 point locking system with swing handle (optional)
- Base channel for floor mounting and canopy (optional)

Colour

- Body: Powder coated RAL 7032 matt texture finish. Mounting
- Plate: Powder coated RAL 2000 semi glossy finish

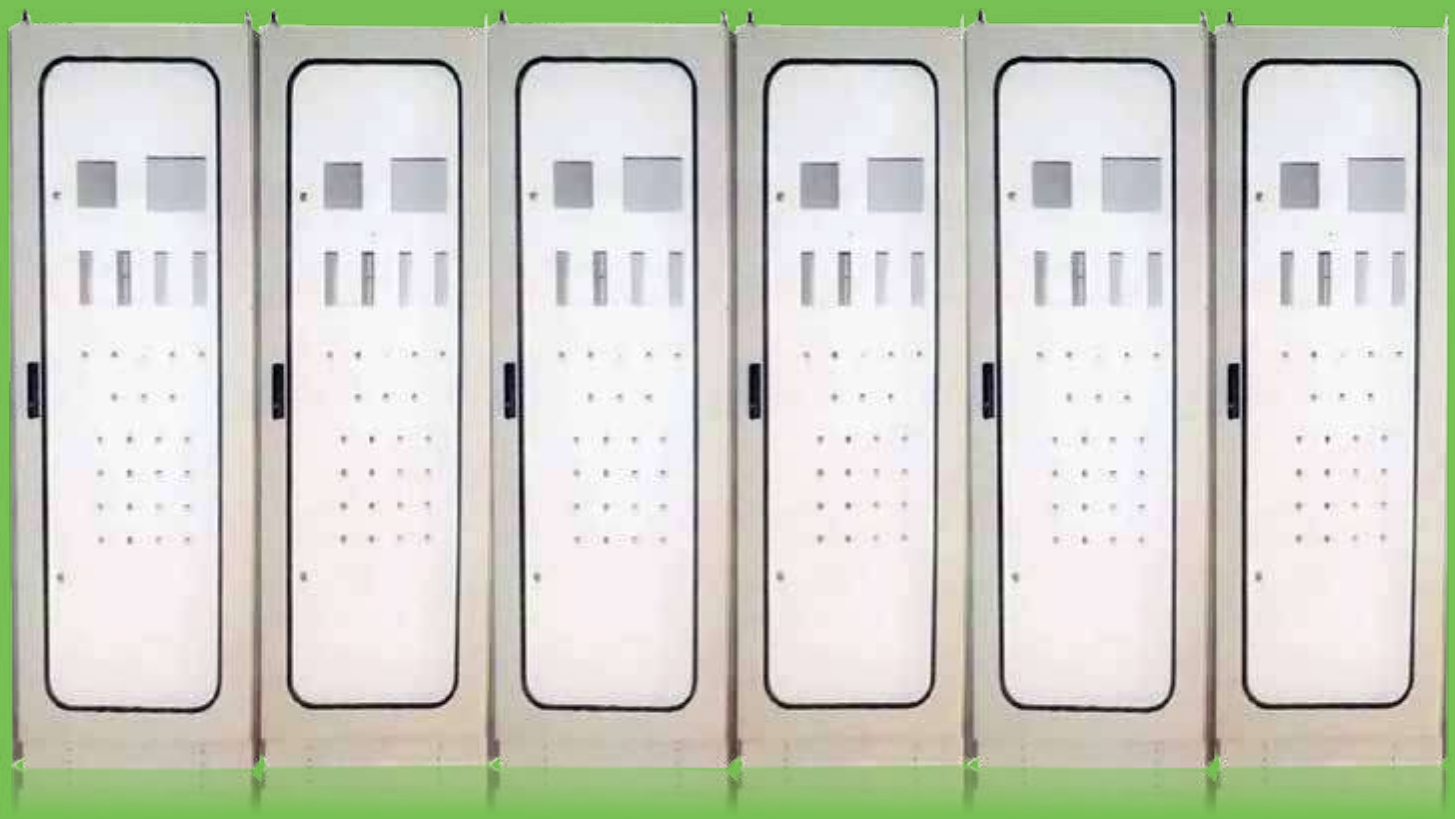
Extendable type Enclosures for Control & Protection Panels

- Designed to provide IP51 to IP55
- Frame, front cover/door, rear cover/door, top cover - 2.5mm sheet steel; Mounting plate / plinth - 3mm sheet steel
- Rigid doors with special hinges ensuring 120 degree openability
- 3 Point locking system with swing handle and padlock provision (optional)
- EPDM gaskets provided all round the door
- Door limit switch bracket provided on rear door
- Lamp fixing bracket provided on top cover
- Vermin proof louvers provided on rear door
- M12 eyebolts provided for lifting

- Type 1: Dead Front
- Type 2: Rear Door or removable Cover
- Type 3: Glazed front door with toughened glass
- Type 4: 19" sub rack frame - fixed and swing type
- Type 5: Front inner cover
- Type 6: Side mounting plates
- Type 7: 19" blanking plates and rack plates (1U, 2U, 3U, 4U and 5U)

Colour

- Powder coated RAL 7032 matt texture finish.
- Mounting plate: Powder coated RAL 7032 / RAL 9003 / RAL 9010 (as per customer requirement)
- Plinth: Black
- Customized designs and colours available on request



Out door marshaling panel

Relay panels with swing type relay frame

Server and SCS panels

Relay panel with fixed frame with rear doors

We at power economy have the in-house capability to provide you with a wide array of standard or customized control and protection panel enclosures based on your requirement.

Innovative and indigenous computer aided designing supplemented with traditional expertise and rich experience make our enclosures superior and unique. Apart from that all our enclosures are fabricated using superior quality sheet steel through a stringent quality and system driven manufacturing process to ensure global electro-safety standards.

Single slope special control desk

Gallery

33kV Combined Control & Relay Panels at Aziaba North-3 Primary Station for MEDC, Oman

12MVAR, 22kV Capacitor Bank Control & Protection Panel SAT testing for ADWEA, UAE

400kV Protection Panels at Ajman Grid Station for ADWEA, UAE.

Customers

شركة كهرباء مزون ش.م.ع.م
Mazoon Electricity Company S.A.O.C

شركة أبوظبي للتوزيع
Abu Dhabi Distribution Co.

أدنوك
ADNOC
شركة بترول أبوظبي الوطنية

شركة أبوظبي للعمليات البترولية البرية (أدكو)
Abu Dhabi Company for Onshore Oil Operations (ADCO)

الشركة العمانية لنقل الكهرباء ش.م.ع.م
OMAN ELECTRICITY TRANSMISSION COMPANY S.A.O.C

TAQA

دولة الإمارات العربية المتحدة
الهيئة الاتحادية للكهرباء والماء
Federal Electricity & Water Authority

شركة ظفار للطاقة ش.م.ع.ع
Dhofar Power Company S.A.O.G

شركة مسقط لتوزيع الكهرباء
Muscat Electricity Distribution Co.

مؤسسة الإمارات للطاقة النووية
Emirates Nuclear Energy Corporation

ADPC
شركة أبوظبي للموانئ

شركة تنمية نفط عمان
Petroleum Development Oman

تكرير
TAKREER
شركة أبوظبي لتكرير النفط

شركة العين للتوزيع
Al Ain Distribution Company

ME
وزارة الكهرباء

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority

هيئة مياه وكهرباء أبوظبي
Abu Dhabi Water & Electricity Authority

KAHRAMAA
كهرماء
المؤسسة العامة القطرية للكهرباء والماء
Qatar General Electricity & Water Corpotation

بروج
Borouge

الشركة السعودية للكهرباء
Saudi Electricity Company
Empowering Energy

TENAGA NASIONAL

هيئة كهرباء ومياه الشارقة
Sharjah Electricity & Water Authority

شركة كهرباء مجان (ش.م.ع.م)
Majan Electricity Company (SAOC)

TRANSCO
شركة أبوظبي للنقل و التحكم
Abu Dhabi Transmission & Despatch Company

Rural Areas Electricity Company s.a.o.c
شركة كهرباء المناطق الريفية ش.م.ع.م

UTILITIES SERVED:

TAQA/ADWEA (ADDC, AADC & TRANSCO), UAE
SEWA, UAE
ETIHAD WE (FEWA), UAE
DEWA, UAE
Muscat Electricity and distribution Co., Oman
Mazoon Electricity Distribution Co., Oman
Majan Electricity and Distribution Co., Oman
OETC, Oman
RAECO, Oman
DPC, Oman
KharaMaa, QATAR
Saudi Electricity Co, K.S.A
National Electricity Corporation, SUDAN
MEW IRAQ
Nigerian utility
TNB Malaysia

COMMERCIAL SEGMENTS SERVED:

Hotels complexes
Office complexes
Residential complexes
Shopping malls

OIL & GAS:

Abu Dhabi company for onshore oil operation
GASCO, Abu Dhabi
ADCO, Abu Dhbai
NPCC, Abu Dhabi
Petroleum development, Oman
Occidental, Oman
ORPC, Oman
Egyptian petrochemicals co., Egypt
FPCC refinery project, Taiwan

INDUSTRIES SERVED:

Cement production
District cooling
Aluminium production
Steel melt shops
Steel rolling mills
Sugar production
Water pumping stations

RENEWABLE SECTOR:

ENEC, UAE

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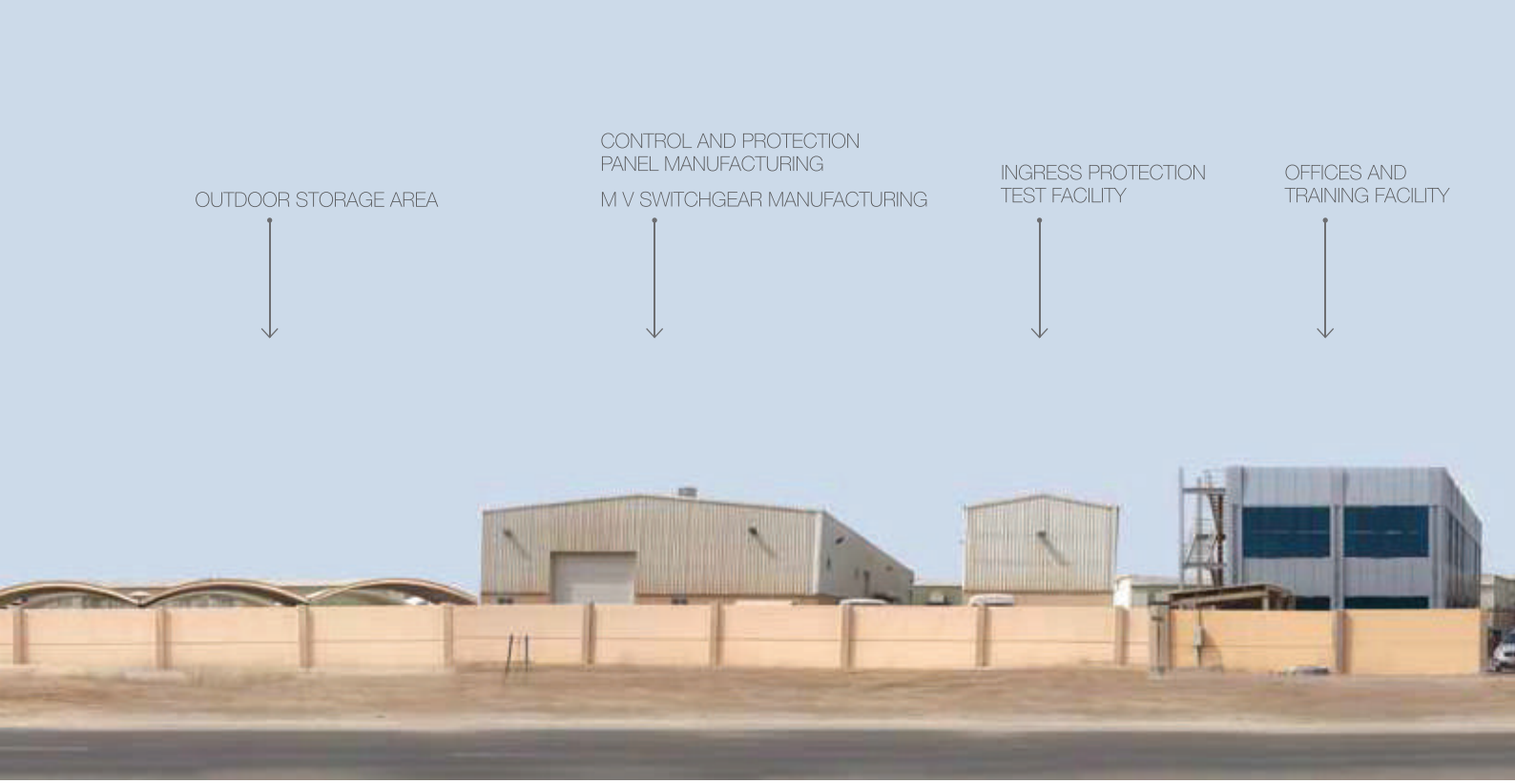
Tamil Nadu, India
Tel: +91 44-4559 0118
Email: info@predictiveenergy.in

www.powereconomy.net

Automation - Power Systems

(SCADA/DMS/RTU/SAS)

Enhancing Power Quality



Who we are?

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Our Reactive Power Compensation, Distribution, Control and Protection, Automation & Metering solutions are developed through constant research and market innovation and cater to the needs of power transmission and distribution networks in the Middle-East and Africa.

Today the company is offering its solutions for both conventional & smart power networks in the domestic and international T&D business.

At Power Economy, we strongly believe that our success and growth are direct derivatives of 'Customer Satisfaction' through quality products delivered on time and on budget.

Our solutions, developed through constant innovation and research, benefit our customers by cutting down cost, improving efficiency and help them to achieve almost nil downtime.

We always ensure our innovation leads to environmental protection through our energy-efficient products along with long term corporate responsibility efforts.

Power Economy assures quality of all its products and services. Business process of Power Economy is certified for ISO: 9001-2008 by TUV NORD.

TÜV NORD
ISO: 9001-2008

Manufacturing facility

- 16000 sq.m. State-of-the-art manufacturing facility in the industrial city of AbuDhabi, UAE
- ERP system for work flow control and project management

People

- Core design team with more than 300 man-years of experience in the power sector across all the
- 3 continents -Asia, Europe and North America.
- 150+ qualified workforce with more than 75 engineers.

Design

- PSCAD, ASPEN, ETAP for switching, harmonic and power system studies
- ELEC DES & AUTOCAD for Drawings & BOM preparation
- Maxwell 2D for magnetic field plots

Products & solutions

Our motto is 'Customised solutions through Engineering & Design'.

Our products and solutions are designed and manufactured by a team of highly experienced technocrats and developed with components sourced mainly from manufacturers in Europe, Japan and US & also reputed firms from rest of the world. This ensures not just quality and reliable power distribution but sets the benchmark for overall power quality in any region we work with.

- Reactive power compensation
- LV power distribution
- MV power distribution
- Control & protection
- Substation automation
- Advanced metering
- Site support

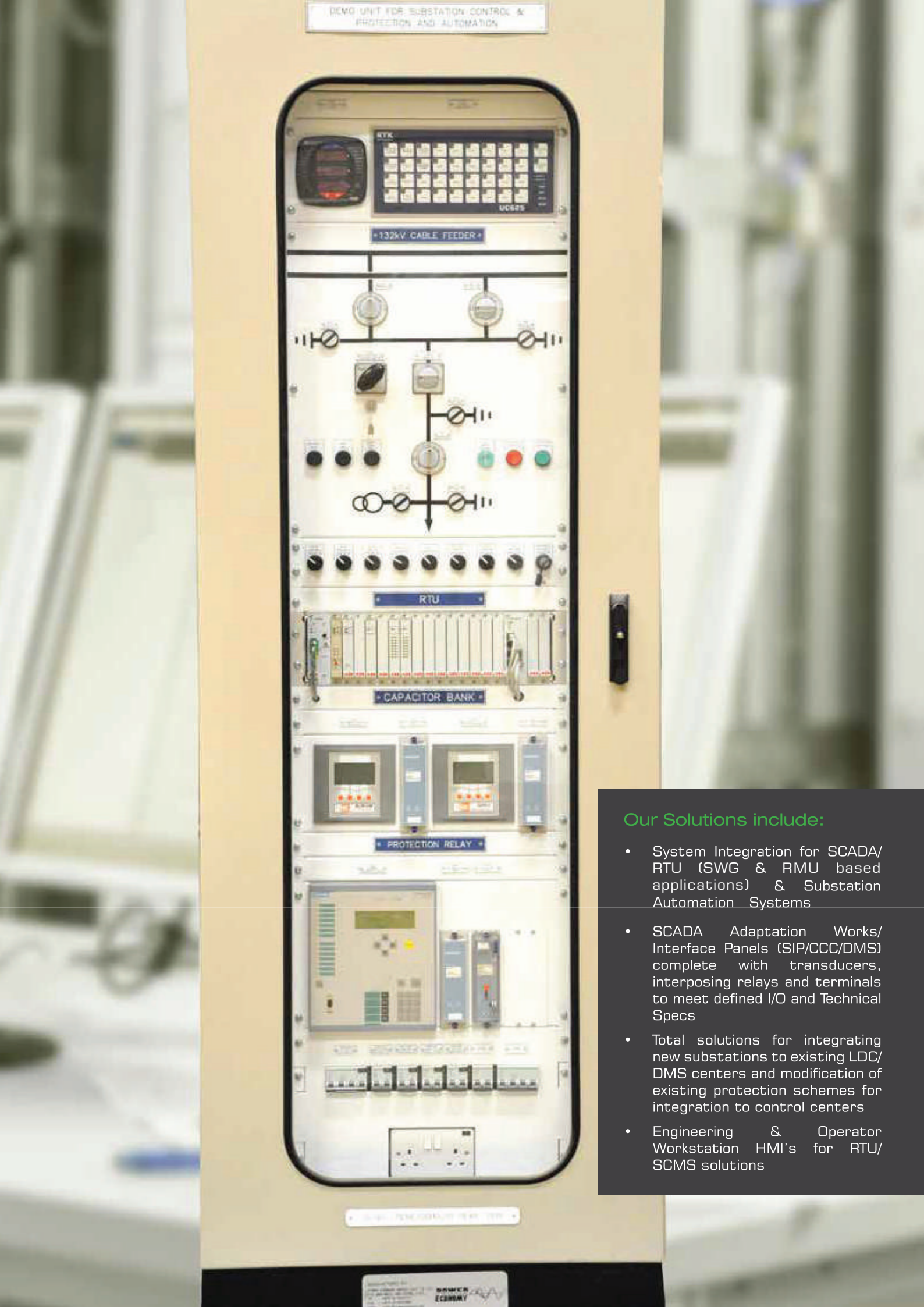
Automation - Power Systems (SCADA/DMS/ RTU/SAS)

At Power Economy, our solutions are driven by innovation. We realize what it takes to build a solution that is a good investment today and that supports the roadmap towards effective long-term Asset Management & Grid Control.

Working closely with Power Utilities and EPC Contractors in the region, Power Economy offers turnkey automation solutions based on latest technologies and standards for transmission and distribution networks.

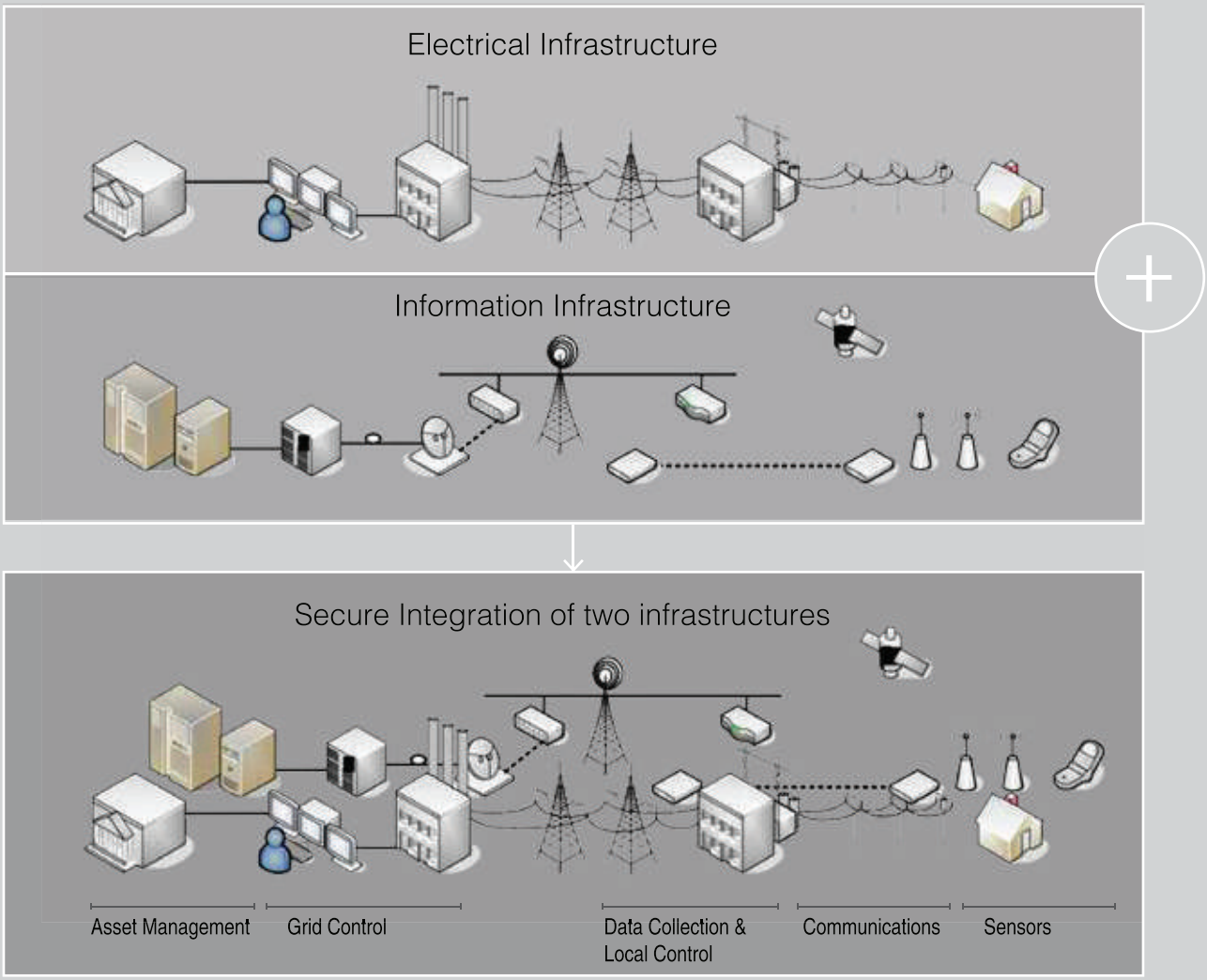
Our solutions, adopting latest digital technologies for Substation Control, Protection & Automation provide a means for effective monitoring and utilization of critical and valuable assets of power utilities. This detailed insight helps every Utility Company to focus better on their primary business function of delivering power in a reliable, safe and efficient manner.

Our local presence, combined with an experienced and dedicated team, provide our Client/Customers a one-stop-facility for all their generation, transmission and distribution needs related to automation, controls, metering and power quality enhancement.



Our Solutions include:

- System Integration for SCADA/ RTU (SWG & RMU based applications) & Substation Automation Systems
- SCADA Adaptation Works/ Interface Panels (SIP/CCC/DMS) complete with transducers, interposing relays and terminals to meet defined I/O and Technical Specs
- Total solutions for integrating new substations to existing LDC/ DMS centers and modification of existing protection schemes for integration to control centers
- Engineering & Operator Workstation HMI's for RTU/ SCMS solutions



- Substation bay level control, metering & monitoring systems
- SDH/PDH, MPLS telecommunication networks
- Engineering of SCADA/RTU/SCMS automation projects including CAD facility
- State-of-the-art testing facilities including in-house Ingress Protection (IP), Impulse, Power Frequency & Temperature Rise Test Labs
- In-house manufacturing of cubicles and racks for all automation applications as per IEC and other relevant standards
- Upgrading/Replacement of Control Systems for Standby Generators at Critical Locations – RGCP, AMF, LMS, RGMS & ATS equipment.
- Maintenance & retrofits for legacy substation control systems

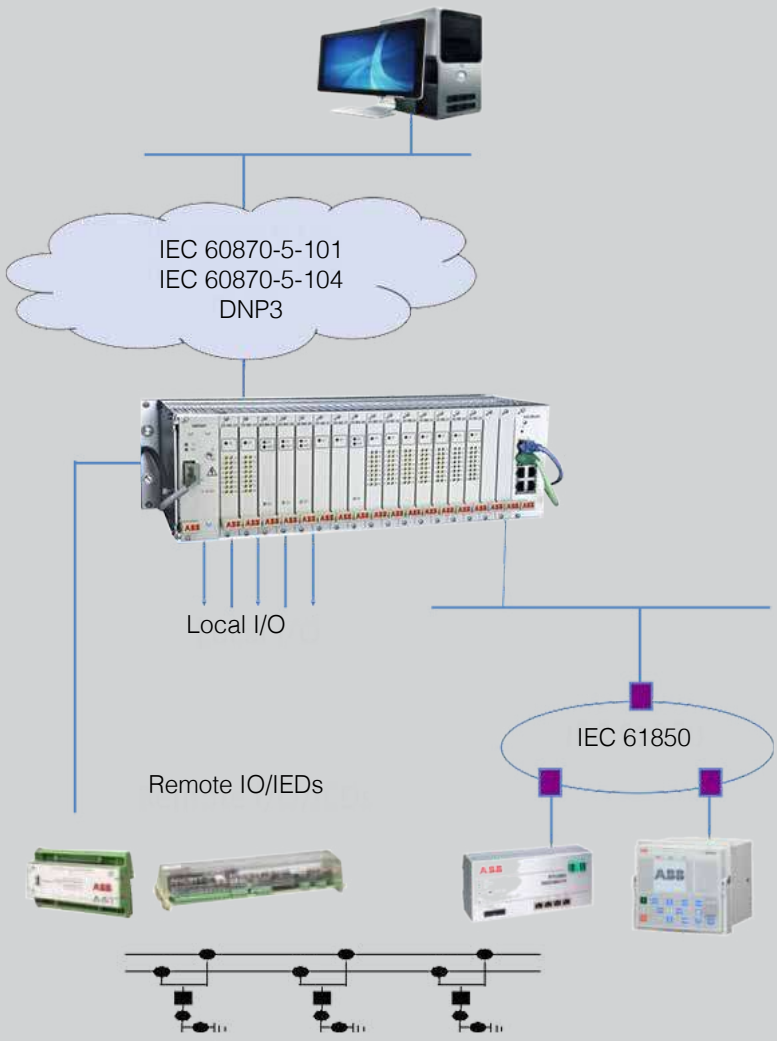
Our engineering expertise:

- Turnkey solutions for RTU projects, including site services
- HMI configuration and SAS engineering
- Control Systems for critical power installations
- Retrofit works on SAS/RTU Systems
- Multifunction IEDs
- Bay controllers
- Software platforms
- IEC61850 inter-substation communication

We specialize in IEC-61850 based automation and protection relay systems and have developed an in-house simulator for testing communication and inter-operability of IED devices & for training purposes.

Features:

- Simulate CT & VT
- Simulate Breakers, Switches & Events
- Multiple Vendor IEDs
- Explore Multifunctional IED features
- IEC based automation scheme
- Advanced 1 Gbit/s Fiber Ethernet Network
- Validate Network Communication
- Perform point-to-point tests
- Commission HMI



Protocol Expertise:

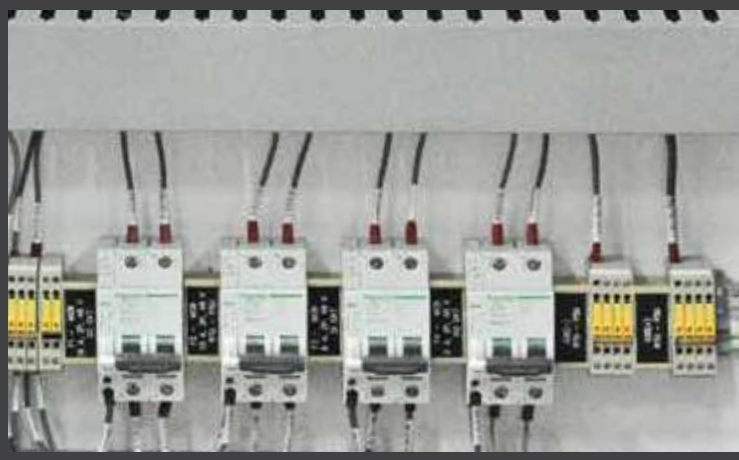
- DNP3
- Modbus
- IEC61850
- IEC60870-5-101, 104
- GOOSE - inter device
- SCADA byte protocols
- SCADA bit protocols

Training

- In-depth training on Automation systems
- State-of-the-art training facility at factory
- Hands-on training laboratory with demo equipment

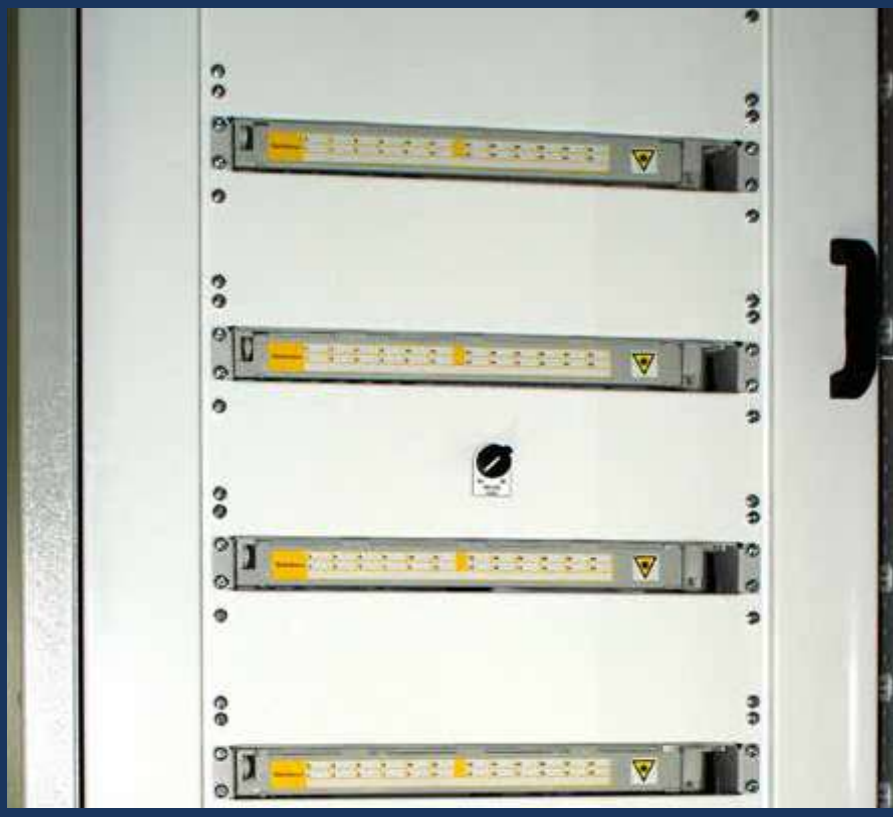
Gallery

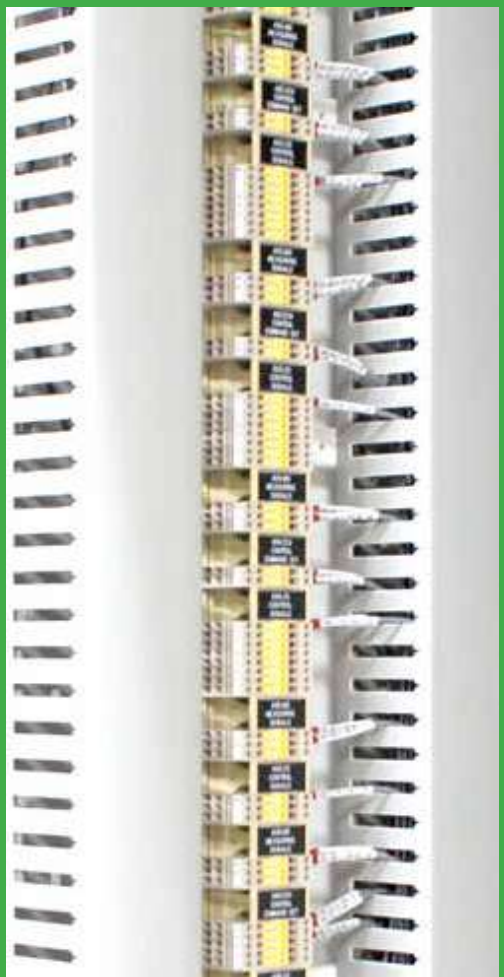
RTU Panels

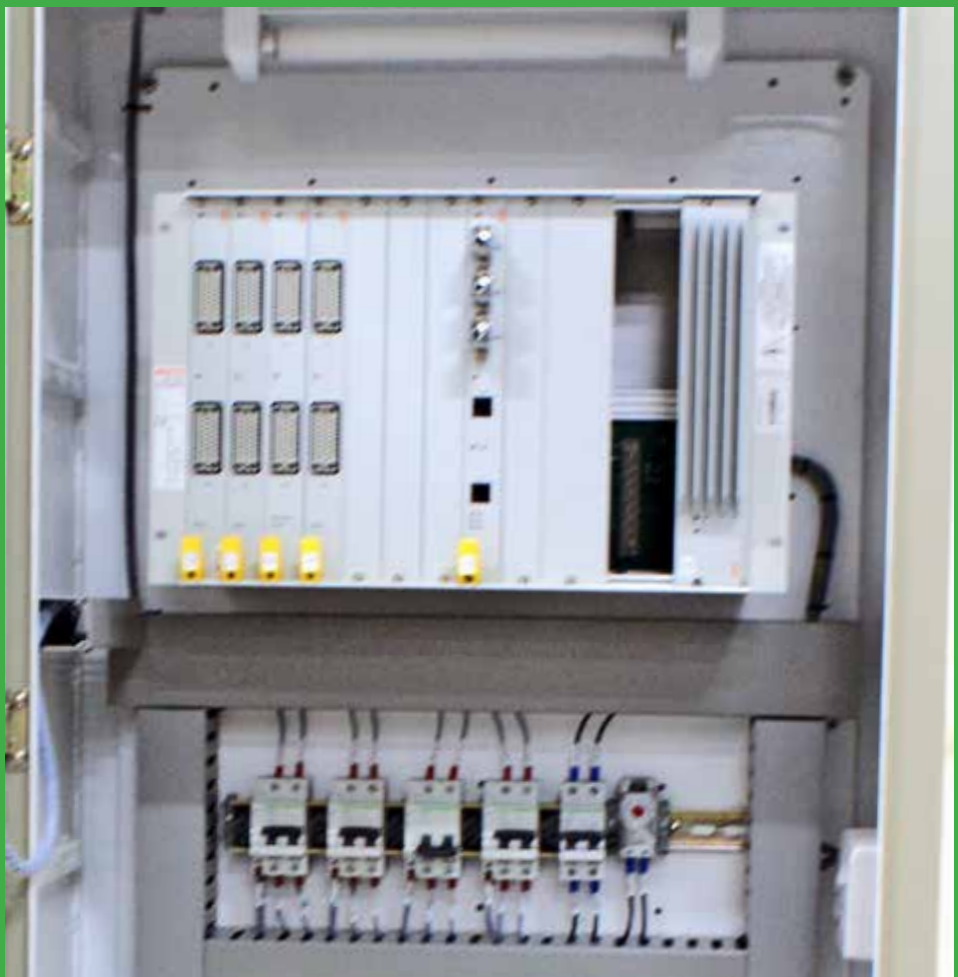


Substation Automation Panels

Automation Panels



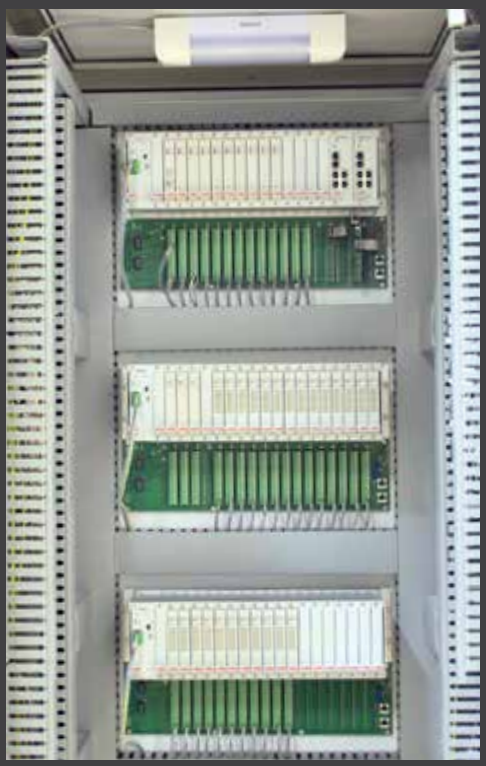





SEL

SAS/Metering/Training Panels

Telecom/RTU Panels



Customers

شركة كهرباء مزون ش.م.ع.م
Mazoon Electricity Company S.A.O.C

شركة أبوظبي للتوزيع
Abu Dhabi Distribution Co.

أدنوك
ADNOC
شركة بترول أبوظبي الوطنية

شركة أبوظبي للعمليات البترولية البرية (أدكو)
Abu Dhabi Company for Onshore Oil Operations (ADCO)

الشركة العمانية لنقل الكهرباء ش.م.ع.م
OMAN ELECTRICITY TRANSMISSION COMPANY S.A.O.C

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority

مؤسسة الإمارات للطاقة النووية
Emirates Nuclear Energy Corporation

دولة الإمارات العربية المتحدة
الهيئة الاتحادية للكهرباء والماء
Federal Electricity & Water Authority

شركة ظفار للطاقة ش.م.ع.ع
Dhofar Power Company S.A.O.G

شركة مسقط للتوزيع الكهرباء
Muscat Electricity Distribution Co.

ADPC
شركة أبوظبي للموانئ

شركة تنمية نفط عمان
Petroleum Development Oman

تكرير
TAKREER
شركة أبوظبي لتكرير النفط

شركة العين للتوزيع
Al Ain Distribution Company

وزارة الكهرباء

TAQA

هيئة مياه وكهرباء أبوظبي
Abu Dhabi Water & Electricity Authority

KAHRAMAA
كهرماء
المؤسسة العامة القطرية للكهرباء والماء
Qatar General Electricity & Water Corpotation

بروج
Borouge

الشركة السعودية للكهرباء
Saudi Electricity Company
Empowering Energy

TENAGA NASIONAL

هيئة كهرباء ومياه الشارقة
Sharjah Electricity & Water Authority

شركة كهرباء مجان (ش.م.ع.م)
Majan Electricity Company (SAOC)

TRANSCO
شركة أبوظبي للنقل و التحكم
Abu Dhabi Transmission & Despatch Company

Rural Areas Electricity Company s.a.o.c
شركة كهرباء المناطق الريفية ش.م.ع.م

UTILITIES SERVED:

TAQA/ADWEA (ADDC, AADC & TRANSCO), UAE
SEWA, UAE
ETIHAD WE (FEWA), UAE
DEWA, UAE
OETC, Oman
Muscat Electricity and Distribution Co., Oman (MEDC)
Mazoon Electricity Distribution Co., Oman (MZEC)
Majan Electricity and Distribution Co., Oman (MJEC)
RAECO, Oman
DPC, Oman
KharaMaa, QATAR
Saudi Electricity Co, (SEC), KSA
National Electricity Corporation, SUDAN
MEW IRAQ
Nigerian utility
ORPC, Oman
FPCC refinery project, Taiwan

COMMERCIAL SEGMENTS SERVED:

Hotel complexes
Office complexes
Public & Residential complexes
Shopping malls
Hospital / Healthcare

OIL & GAS:

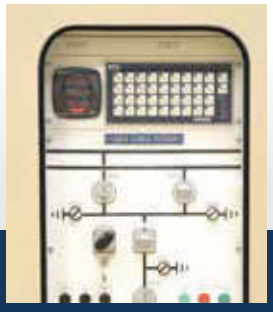
GASCO, Abu Dhabi
ADCO, Abu Dhbai
NPCC, Abu Dhabi
Petroleum Development, Oman
Occidental, Oman
Egyptian petrochemicals co., Egypt

INDUSTRIES SERVED:

Cement production
District cooling
Aluminium production
Steel melt shops
Steel rolling mills
Sugar production
Water pumping stations

RENEWABLE SECTOR:

ENEC, UAE





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