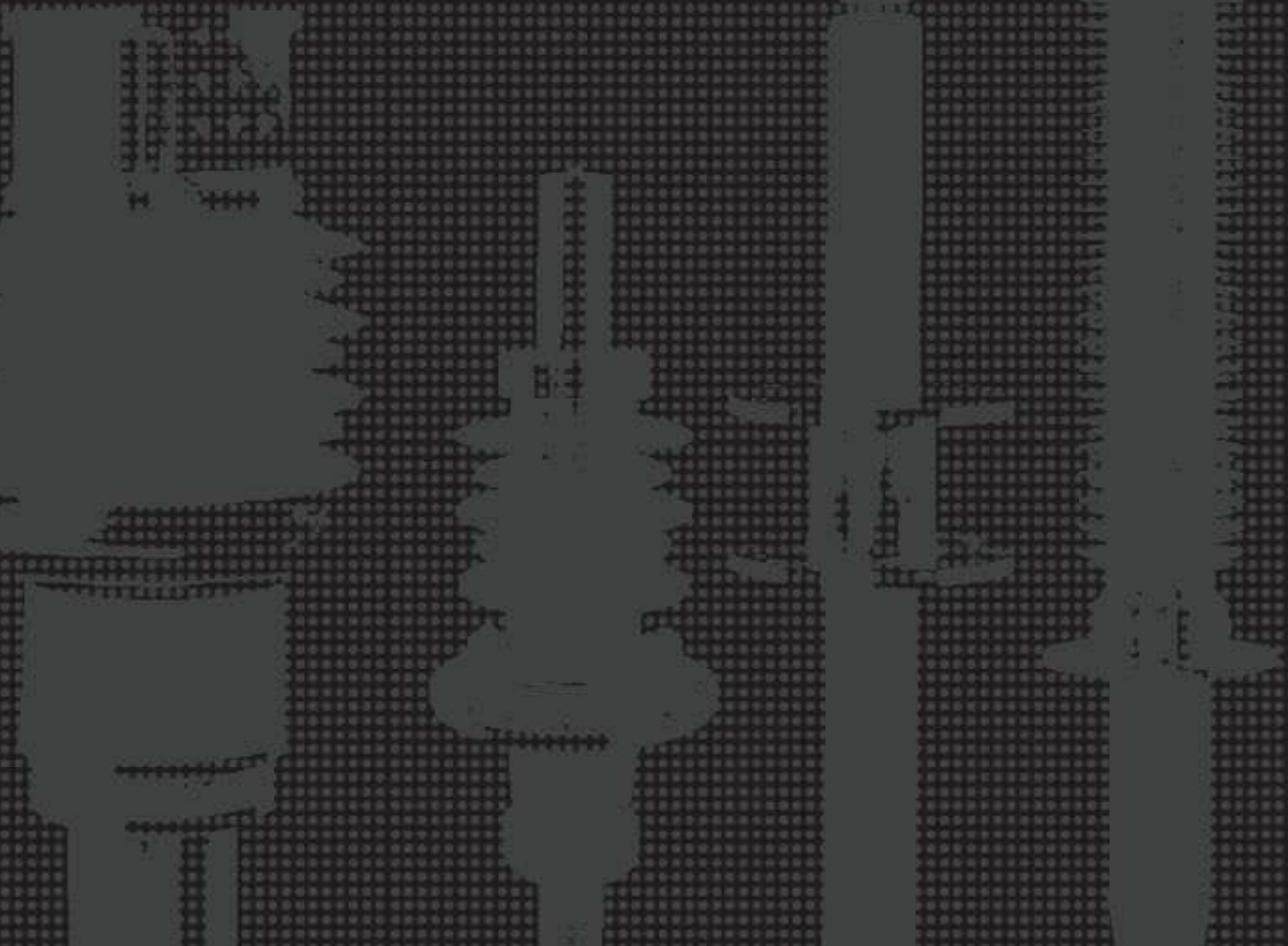


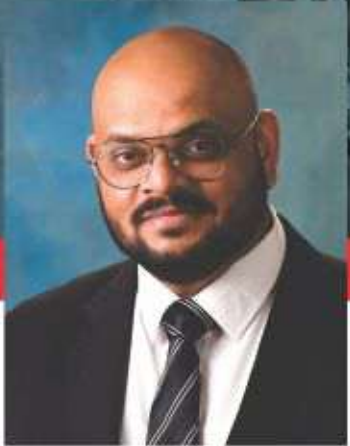
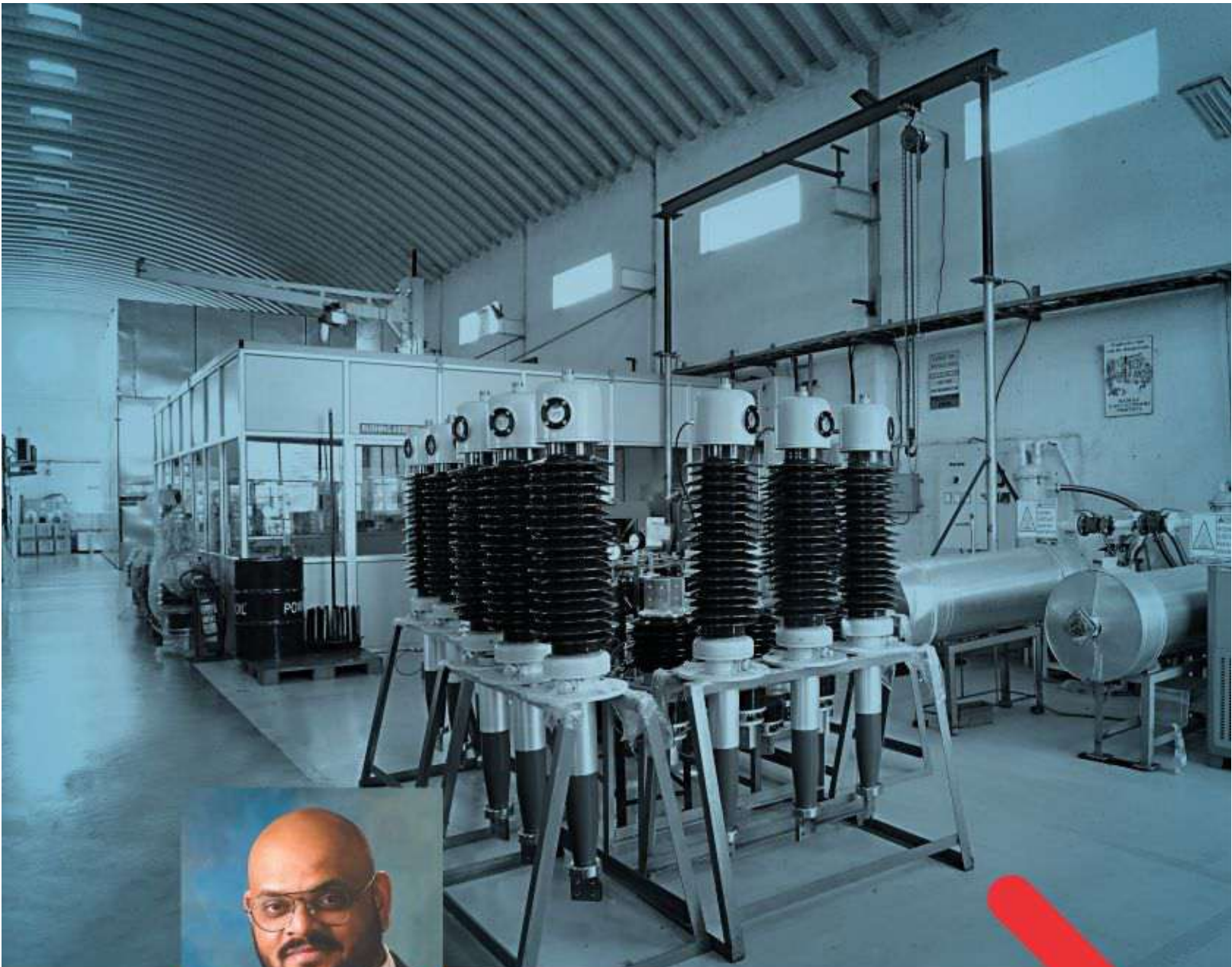
www.yashhv.com



Powered by Innovation, Led by Conviction

Transformer Bushings & FRP products





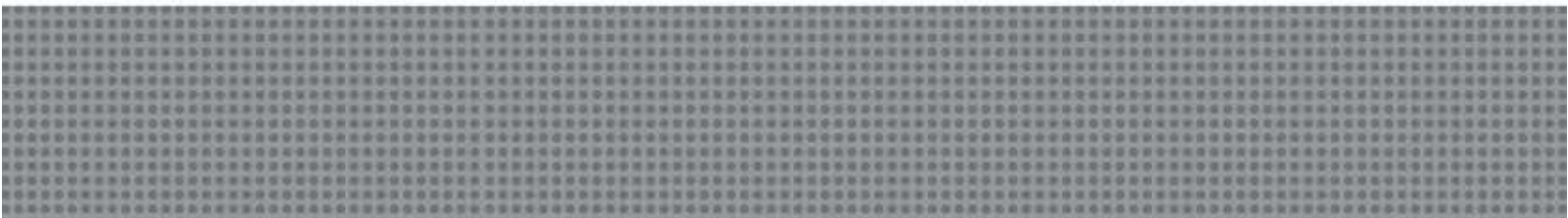
Mr. Keyur Shah
MD - YASH HIGHVOLTAGE LIMITED

Transformer Bushings
and FRP products



Critical Components Designed with Great Care

YASH HIGHVOLTAGE is a renowned specialist and manufacturer of Power transformer bushings and FRP cylinders. We are your reliable partners when it comes to delivering specialized, custom engineered solutions in a timely, professional and cost-effective manner.





We Deliver The Perfect Three:

Quality

Cost

Speed

Bushings and FRP cylinders have been our core focus areas since we began operations. Over the years we have leveraged our capabilities to power innovation – resulting in cost-effective, efficient and high-performance products with minimal turnaround time. Not surprisingly, Yash is today the preferred partner across the power transformer industry.

Even though they are a small component of the power transformer, Bushings play a key role in its working. The cost of a transformer bushing is significantly lesser than the Power transformer, yet a bushing failure can cause catastrophic damage to the transformer, the surrounding equipment, and also human lives.

That is why we dedicate our best resources, research and innovation into ensuring the highest reliability of these critical components in the overall operations of a transformer. Our manufacturing techniques and technology are fine-tuned in a way to deliver robust performance and dependability.



→ RIP Bushings launch -
Shri Piyush Goyal
(Minister of Railways and
Coal & Former MoS - Power)



→ Yash-MGC team being awarded for Outstanding
Product Development at SWITCH Global Expo 2016

Yash Highvoltage Ltd. is an independent, indigenous manufacturer of import substitute transformer bushings and Fibre glass cylinders. Established in 2002, YASH has emerged as a preferred solution provider in a short span of 15 years, catering to the upper segment of the power transformer industry with many benefits like swift product development, completion of long drawn type testing in record lead time, expeditious end user approvals, continuous investment in infrastructure and supply chain development and industry best after-sales support, backed by a very competent team.

At Yash, we believe that the key to delivering superior quality products for our customers is to understand their expectations since initial stage. YASH offers to its customers highly effective yet flexible solutions in record turnaround time at very competitive costs.

YASH is on the approved vendor list of most utilities, power producers, EPCs and OEMs in India and abroad, and has supplied more than 10,000 bushings which have been successfully installed globally.

Yash is amongst few companies globally to develop and supply OIP bushings with Silicone / Polymeric insulators.

In an industry dominated by MNCs, Yash has carved a niche for itself as an independent player purely because of its very high quality standards and aggressive approach. This independence also helps offer many advantages to our clients such as:

- Efficient production / process / design management
- Immense flexibility in terms of designs / solutions
- Lower overheads
- Industry best turnaround time for new developments
- Competitive pricing



→ Dust-free Core winding bay

From Development to Delivery **Quality Focus**

The critical operation requirements for transformer bushings also warrant an utmost attention to detail towards quality management system. Our state-of-the-art 400kV Test laboratory is equipped and capable of performing all routine electrical tests as per IEC 60137:2017 standard.

YASH bushings have proven their mettle during various short circuit and other type tests and special tests of power transformers at internationally reputed test laboratories such as KEMA, the Netherlands.

With the vast experience brought on board by our technology experts, and state-of-the-art design tools and software, YASH is prepared to comply with special and stringent customer specifications.



1200kV Impulse Test Laboratory



Shielded HV test lab capable of all routine tests as per IEC '137



State-of-the-art oil test lab capable of testing oil PPM, BDV, Tan & IR



→ Automatic helium tightness test facility

1

At YASH, active part / condenser core winding is a highly-controlled process in clean, dust-free winding bay, where each winding step for every core is monitored and recorded. Bushing assembly is carried out in enclosed, dust-free ambient controlled rooms.



2

The oil processing and filling of bushings is controlled through a series of tests and checks before active part impregnation and flooding in bushing.

At YASH, we have set the quality benchmarks high. From the stage one of product development to delivery, we leave nothing to chance.

3

The HV test lab has a Partial Discharge (PD) background of < 1pC, ensured by double wall electromagnetic shielding, and imported EMI filters. This facilitates highly accurate PD testing for all products, which is a key parameter for determining insulation health and quality of the bushings.

4

The strength of quality management and quality assurance is reflected in less than 1% Test Bed Rejection (TBR) for products in final electrical testing.

5

State-of-the-art ERP system and Process Route card for each bushing establish an unmistakable traceability from raw material phase till dispatch stage for each manufacturing step, whereby the quality record of every CTQ (critical to quality) assembly-part or in-process parameter is traceable using the unique identification Serial for each bushing.

Testing Capabilities

In house Test Capability - Electrical

- High voltage (Dry Power Frequency) testing (400kV)
- Impulse testing (1200 kVp)
- Partial discharge testing
- Tangent delta (Dissipation factor) testing
- Capacitance testing
- Oil testing:
 - PPM (Moisture content) measurement
 - BDV (Break down value) measurement
 - Tangent delta (Dissipation factor)
 - Oil Resistivity

In house Test Capability - Mechanical & Physical

- Helium leakage testing for dry RIP bushings and metal components
- Hardness testing of metallic Alloys
- Hydro testing for castings/metallic components
- Electrical Conductivity measurement for high conductivity Alloys
- Tightness test on Liquid filled bushings
- Tightness test at flange

Additionally we are equipped for carrying out in-house Type tests such as Cantilever Test and Temperature rise test of Bushings.



→ Products & Services

→ Single Window Solutions

THE COMPREHENSIVE PRODUCT RANGE OF YASH CONSISTS OF

High current bushings up to 36 kV,
20,000 Amperes for Generator
Step-up Transformers

High voltage oil-to-air and air-
to-air type OIP condenser
bushings up to 170 kV

High voltage oil-to-air dry
type RIP/RIS condenser
bushings up to 245 kV

Fibre glass cylinders up to 1.8-
meter diameter for power
transformer winding formers



Rated Voltage
24 kV ~ 36 kV

Rated Current
4000 ~ 20000 A

Standard
IEC-60137:2017

Types
Oil filled /
Communicating /
OIP Condenser

**High
Current
→ Bushings-
Aluminium/
Copper**

Salient Features

- Single solid Aluminium / Copper conductor
- No welding or brazing below mounting flange
- Integral flat bottom terminal, directly milled on solid conductor
- High thermal stability / Short-circuit withstand capability
- High strength Porcelain
- Corrosion resistant metal parts
- Exact interchangeability with global reputed makes
- Shortest lead time.

Approved by





→ 145 kV OIP Bushings of YASH in service at one of the premier transmission utility sites

→ OIP Condenser Bushings



Voltage Ratings
24 kV ~ 170 kV

Current Rating
Upto 4000 A

Standards
IEC-60137:2017/
ANSI/IEEE

Connection
Draw lead/Draw
Rod/Stem type

Housing
Porcelain/Polymer

Salient Features

- Hermetically sealed and self contained
- Low dielectric loss and partial discharge free
- Exact interchangeability with global reputed makes
- Short lead time
- Excellent mechanical strength
- Good seismic and short circuit withstand
- Easy clean alternate sheds
- Explosion proof lower end insulator

Approved by



Technology Collaboration

 **MOSER GLASER**

Switzerland



YASH
HIGH VOLTAGE



→ RIP/RIS Condenser Bushings

Rated Voltage
24 kV ~ 245 kV

Rated Current
Upto 6300 A

Standard
IEC-60137:2017

Connection
Draw lead/Draw
Rod/Stem type

Housing
Composite/Polymeric/
Silicone

Salient Features

- Oil Free / Partial Discharge Free
- Non-flammable, self-extinguishing when exposed to open fire
- Excellent Seismic/Earthquake performance
- High thermal strength (120 °C)
- Mechanically rigid, yet lightweight and compact, 50% of weight of OIP
- Can be transported, stored and installed at any angle
- Can be energized immediately after installation
- Seals the transformer and reduces downtime in the event of major failures
- Shatter-proof, Hydrophobic silicone sheds

Standard
IEC-60137:2017 /
DIN-EN 50180 / IS:3347

Voltage range
12 kV ~ 36 kV

Current range
1250, 2000, 3150A

Housing
Polymeric/Silicone



→ LV Polymeric Bushings

Non-capacitive type

Approved by
POWER GRID



पावरग्रिड



→ Fiberglass Cylinders



Range

- ~ 1800mm Diameter
- ~ 2800mm Height

Material

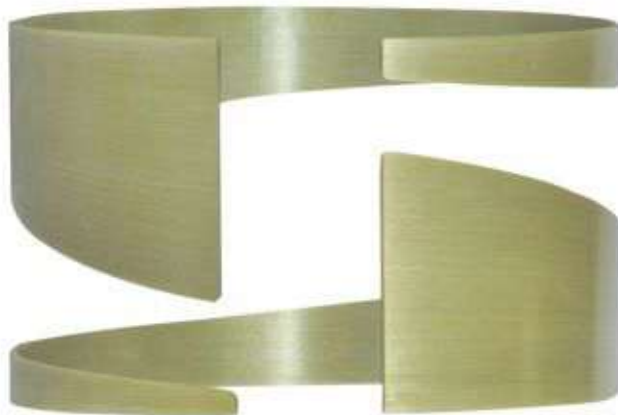
Filament wound cylinders
in epoxy/polyester resin

Application

- Power/Dry type transformers
- EHV test transformers
- Test equipment
- Tap changers

→ Fiberglass End Rings

Guard rings for power transformers



Salient Features

- Excellent performance during Short-Circuit
- Excellent mechanical properties through special winding pattern of glass
- Superior dielectric properties
- Anti Tracking
- Superior hydrophobic properties
- Thermal class F insulation (155°C)
- Very small manufacturing tolerances
- Short lead times
- Wide range of dimension choice



→ **Retrofit Solutions**

We specialize in offering a wide range of solutions to customers who are looking for replacement / refurbishment / retrofit of existing / old transformer bushing fleet which have either deteriorated or reached the end of their life cycle.

Ditto Interchangeable Site Replacements






→ MGC's State-of-the-art
550 kV test laboratory
with 2200 kVp
Impulse test system

Partnering with Swiss Pioneers

Technology Collaboration

 **MOSER GLASER**
Switzerland



 YASH-MGC History in the making

DURESCA*
Busbar Systems
Type: DE/DG
Rated Voltage: upto 170 kV
Rated Current: upto 8000 A

DURESCA*
Transformer Bushings
Insulation: RIP/RIS
Rated Voltage: upto 300 kV
Rated Current: upto 6300 A

DURESCA*
Wall Bushings
Types: Oil-Oil, Oil-SF6
Rated Voltage: upto 245 kV
Rated Current: upto 6300 A

Standard
**IEC-60137:2017/
ANSI/IEEE-C57.19.00/01**

At the core, leaders are a team of innovators. Our innovative bent made the technical collaboration with the 100 year old MGC Moser Glaser AG, Switzerland a natural fit. Founded in Basel in 1914, MGC is a pioneer of RIP (Resin Impregnated Paper) technology since late 1950's.

The RIP technology, developed by Moser Glaser, has been sold under the brand name DURESCA® for busbars and later also for bushings and has made a mark for itself in the world electrical market as supplier to major OEMs and Utilities in Europe and also around the world.

Today, Yash is the only Indian manufacturer on the list of approved suppliers for RIP bushings of Power Grid, amongst other large foreign MNCs.





**The H-J Family
of Companies**

→ Collaborating with The Best

Yash has tied up with H-J Family of Companies, a renowned name in USA, with a state-of-the-art manufacturing facility for IEEE range of Distribution class bushings, small power transformers, MV switchgear and a wide range of transformer components.

H-J has an expansive sales network across Canada, USA and Latin America, and is marketing YASH OIP and High current bushings to their customers in these regions. This has given a boost to exports of Yash products across Brazil, Columbia, Mexico and many other Latin American countries.

Since 1969 H-J continues to be guided by a single principle - "To provide customers with the best products and service in the industry". Today, H-J Family of Companies offers customers a complete package of transformer components and they represents many other respected manufacturers, including its sister company H-J Enterprises, General Electric, Central Moloney, ERMCO, AEM Unicore, MTM and others.

Product Range

- Terminal connectors
- Spade connectors
- Miscellaneous hardware
- LV porcelain & epoxy bushings
- HV porcelain & epoxy bushings
- Porcelain insulators
- Epoxy standoff insulators
- Switchgear wall through bushings
- Instrumentation: Thermometers, PV gauges, LL gauges
- Drain valves: Threaded & flanged, bronze & SS
- Loadbreak switches
- No load tap changers



Performance Highlights



→ Major Customer Approvals

- | | | |
|--------|------------|-----------------|
| PGCIL | RELIANCE | ESSAR |
| NTPC | GMR | MAHAGENCO |
| NPCIL | TATA | ISRAEL ELECTRIC |
| GETCO | JSW | SONGAS |
| MPPTCL | J&K | ENDESA SPAIN |
| GSECL | UPPTCL | RRVPLN |
| MSETCL | AP-TRANSCO | DTL |
| PSPCL | TORRENT | HPPTCL |
| HVPNL | LANCO | HPSEB |
| RDSO | MPPGCL | |
| ADANI | L&T | |

→ Our Patrons

- SIEMENS
- TOSHIBA
- CG - GLOBAL
- GE
- ABB
- BHEL
- T&R
- VOLTAMP
- EMCO
- GE PROLEC
- HYUNDAI
- WEG
- BLUTRAFOS
- IMP POWERS
- ATLANTA
- AL-AHLEIA
- BHARAT BIJLEE
- TECHNICAL ASSOCIATES
- SCHNEIDER
- EQUATRAN
- ECE
- KANOVAR
- SANIL
- ...to name few



Worldwide Installations

INDIA • BRAZIL • URUGUAY • AUSTRALIA • IRAQ • GULF OF OMAN • TAIWAN
SAUDI ARABIA • IRAN • UAE • KENYA • ZIMBABWE • PHILLIPINES • SPAIN
ISRAEL • EQUADOR • QATAR • BANGLADESH • MEXICO • KUWAIT • BULGARIA
INDONESIA • ALBANIA • TURKEY • NIGERIA • TANZANIA • NEPAL



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