



# **Bharat Heavy Electricals Ltd.**

## **Business & Strategy Overview**

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**Morgan Stanley India Summit 2011**

**2<sup>nd</sup> June 2011**

**Mumbai**

# Our Credentials

- ▶ A US\$9.6 billion Engineering & Manufacturing enterprise of its kind in India
- ▶ A 'Navaratna' company and a Major Integrated Power Plant Equipment Manufacturer in the World
- ▶ Profit Making Company since 1971-72
- ▶ Consistent Dividend Paying Company for over thirty years (FY 1976-77 onwards)
- ▶ References in over 72 countries
- ▶ Installed base of more than 1,15,000 MW
- ▶ 15 Manufacturing Units+ 2 Subsidiaries+ 7 JVs+ Infrastructure to deal with 150+ project sites



# We are Single Source with Multiple Solutions for Infrastructure & Industrial Sectors



**Power**



**Industry**



**Oil & Gas**



**Transmission**

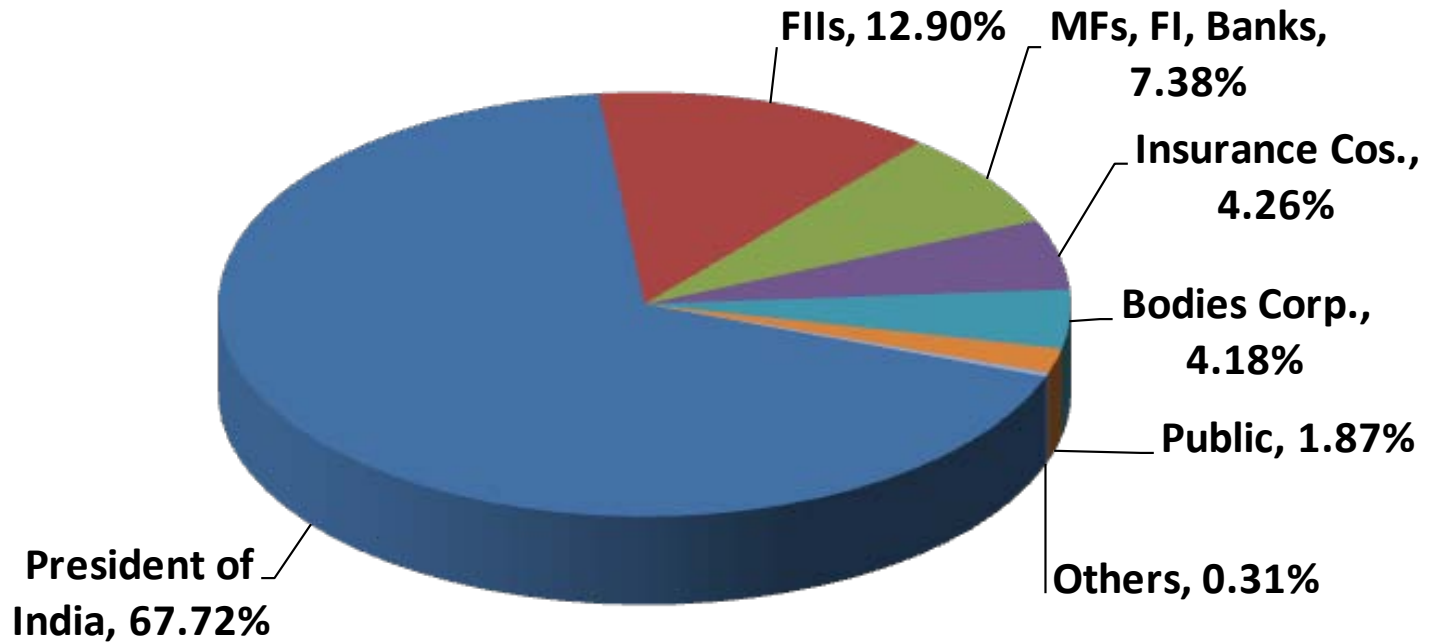


**Transportation**



**NCES (Solar)**

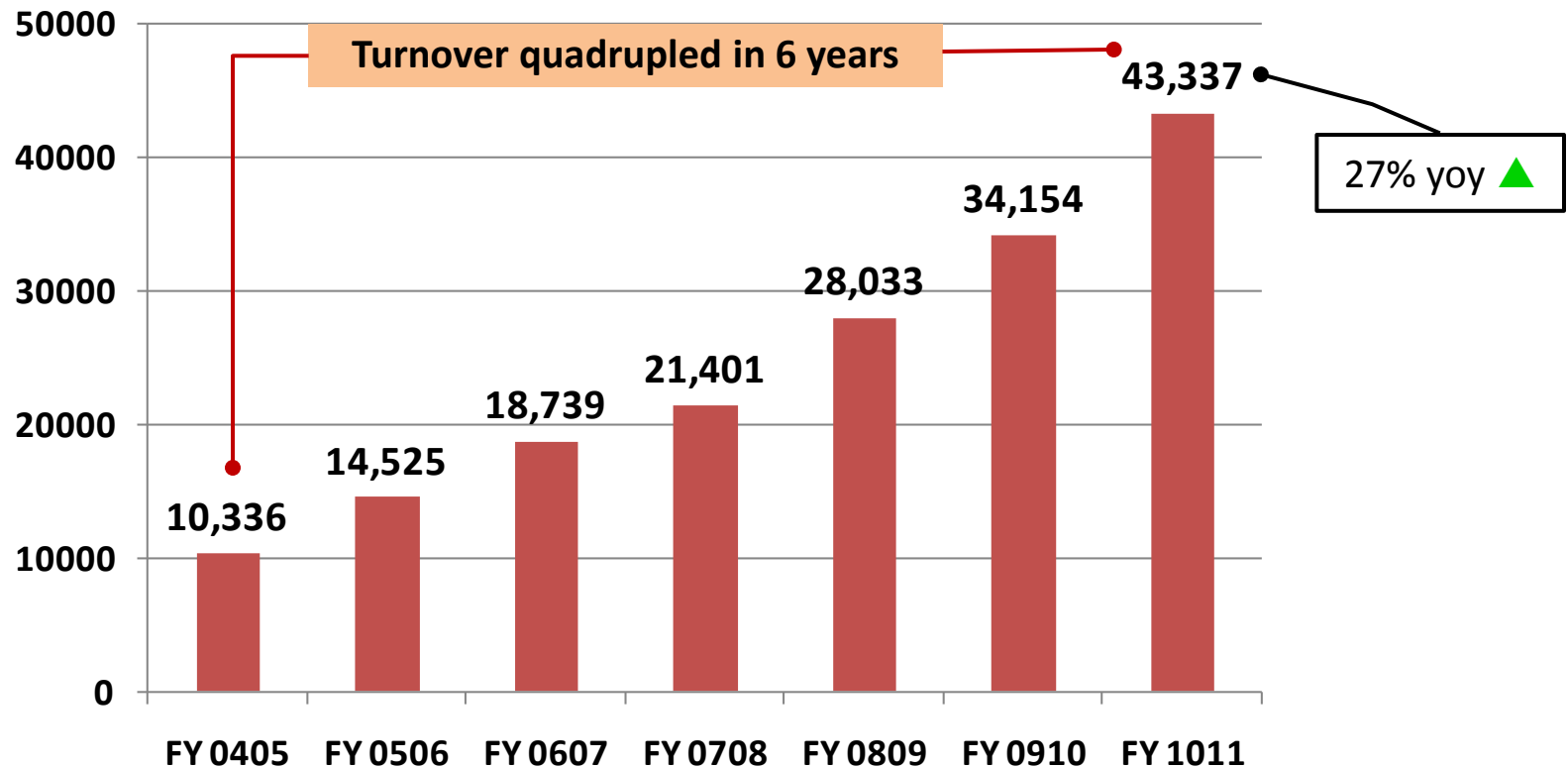
# Our Shareholding Pattern



( As on 31<sup>st</sup> Mar 2011 )

# Our Performance: *Strong & Sustainable*

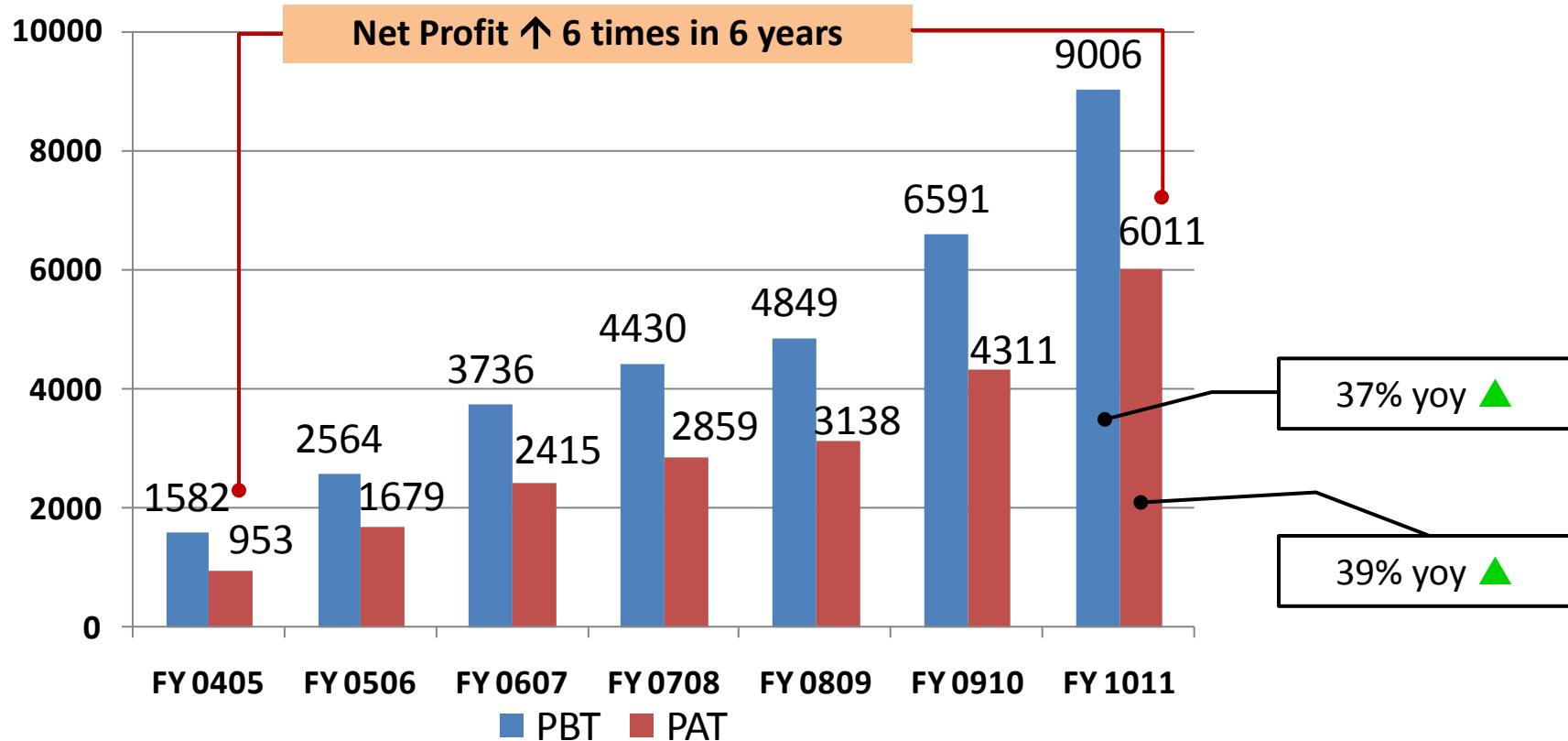
## Turnover (Rs Crore)



During 2010-11, increase in Turnover due to change in accounting policy wrt Warranty Obligations: Rs 2772.8 Cr

# Our Performance: *Strong & Sustainable*

## Profitability (Rs Crore)

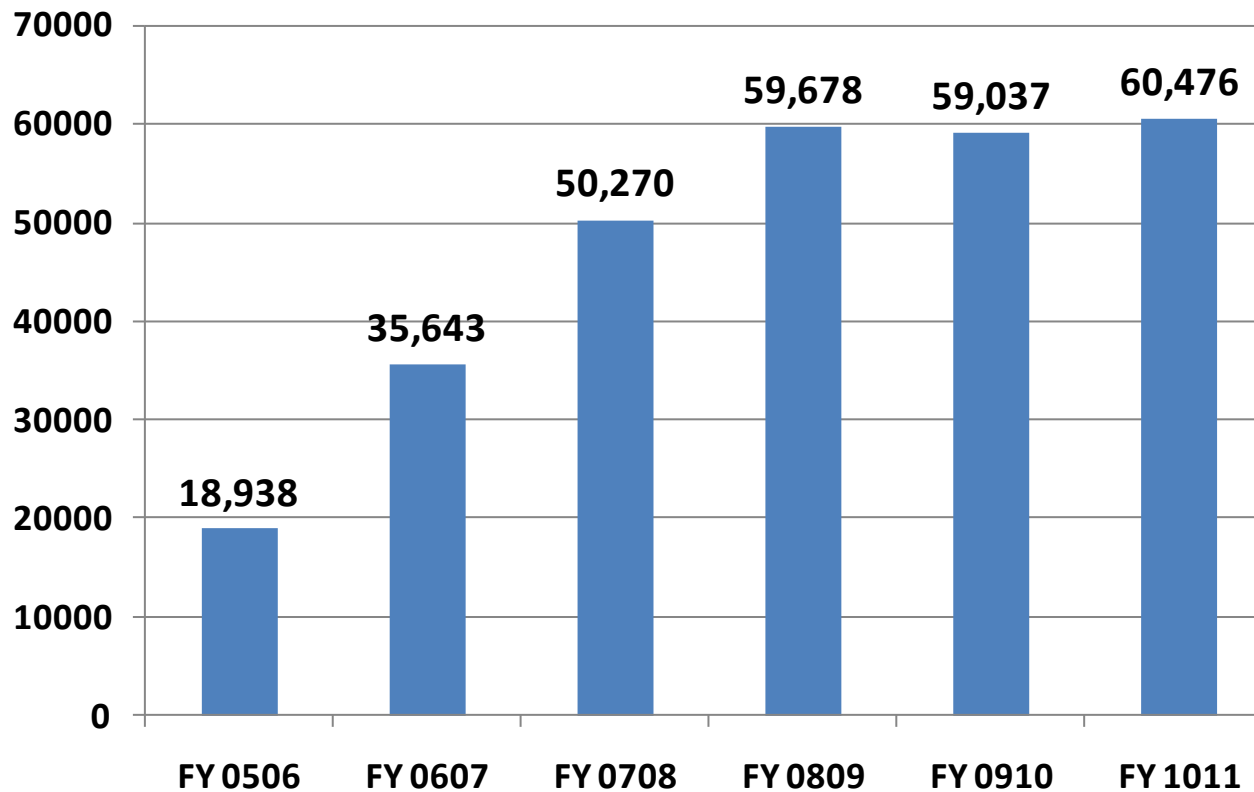


During 2010-11, increase in PBT due to change in accounting policy:  
Rs 695.5 Crore (Warranty obligations) + Rs 240.8 Crore (Employee benefits) + Rs 46.8 Crore (Cranes)

**Excluding impact of accounting policy changes: PBT = Rs 8023 Cr. (22% yoy)**

# Our Performance: *Strong & Sustainable*

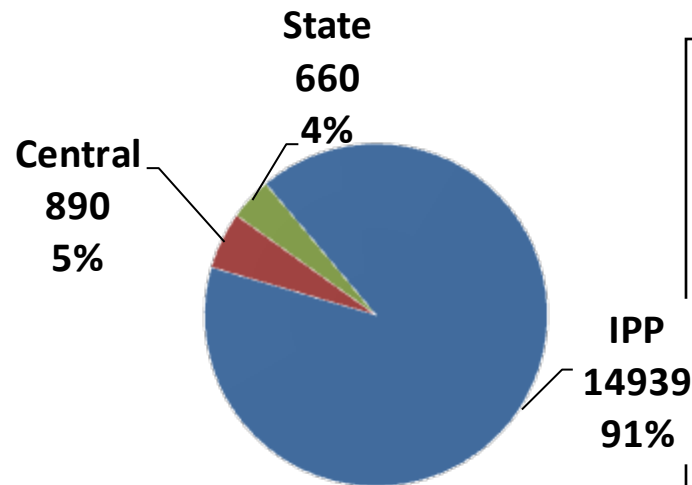
## Order Book (Rs Crore)



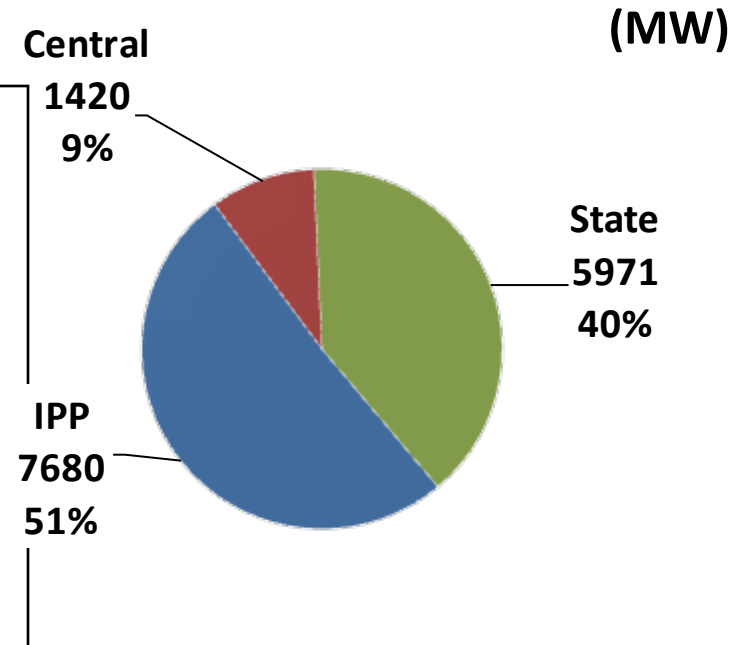
**Total Order Book as on Mar 31, 2011: Rs 1,64,145 Crore**

# Our Customer Profile: *Diverse, Loyal & Satisfied*

## Orders Received in FY10



## Orders Received in FY11



Abhijit  
ACC  
Adhunik  
Avantha  
Bajaj Hind.  
Hindalco  
India Bulls  
Jaypee Gr  
Jindal Power  
Sterlite  
Tata  
Videocon

Our performance edge is driven by

- ▶ Lower Auxiliary Power Consumption
- ▶ Boiler Efficiency
- ▶ Lower Design Heat Rate
- ▶ Better PLF
- ▶ Lower Life Cycle Cost

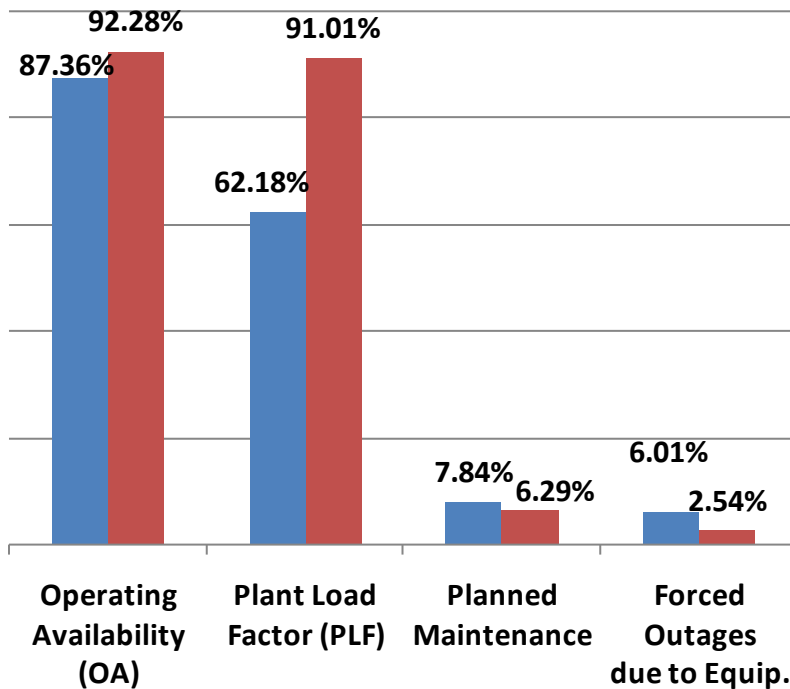
Confidence reposed by IPPs indicate our

- ▶ Product Quality
- ▶ Execution Capability
- ▶ Service Reliability
- ▶ Engineering Excellence

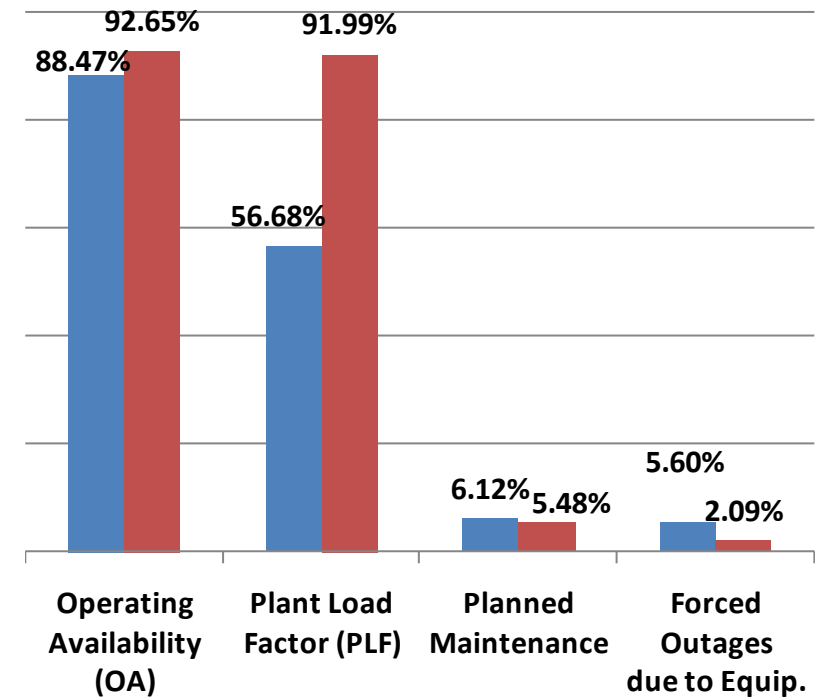


# Our Equipments' Performance: *Setting Global Benchmarks*

## Performance of 475-525 MW Sets



## Performance of 190-220 MW Sets



■ NERC member countries (North America, Canada, Europe part)

■ BHEL Sets

Source: North American Electric Reliability Council (NERC); 2010

Performance Data pertains to BHEL sets supplied to NTPC

# Our Order Book:

## *Growing despite Competition*

### Order Book during FY11

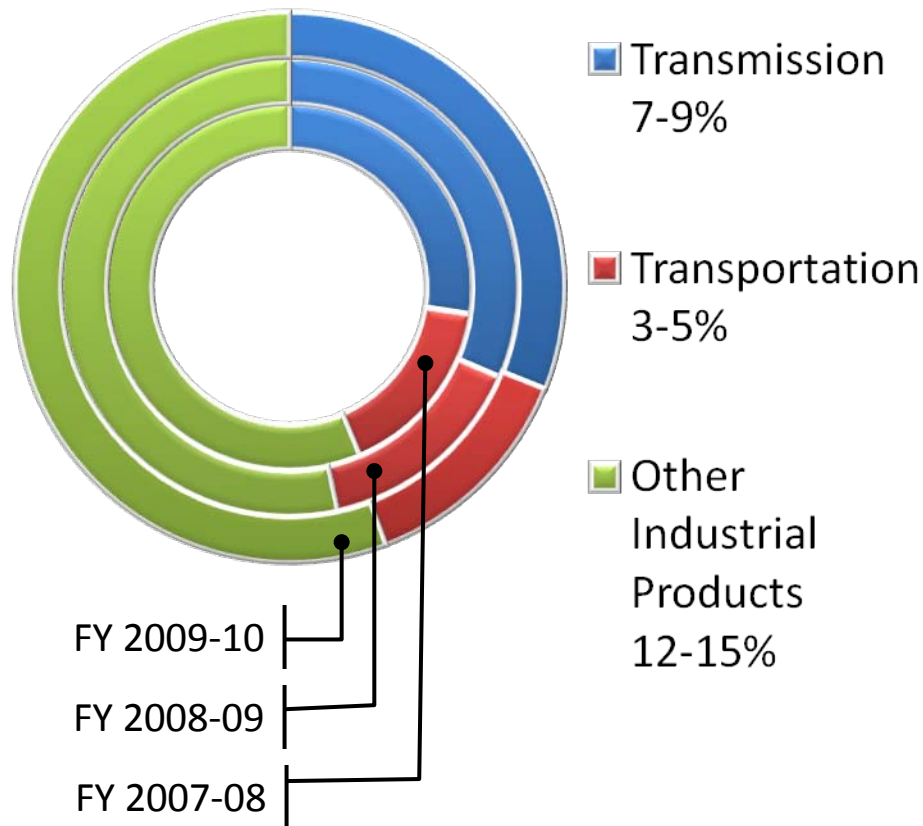
| Sector          | Power  | Industry | Exports | Total         |
|-----------------|--------|----------|---------|---------------|
| <b>MW</b>       | 15,071 | 1,845    | 1,046   | <b>17,962</b> |
| <b>Rs Crore</b> | 46,393 | 11,374   | 3,738   | <b>60,476</b> |

### Major Orders Received

| Project                                                        | MW     | Rs Cr |
|----------------------------------------------------------------|--------|-------|
| RPCL / Yeramarus TPS (BTG+ Elec+Civil+ Sw yard)                | 2x800  | 6300  |
| RPCL / Edlapur TPS (BTG+ Elec+Civil+ Sw yard)                  | 1x800  | 3601  |
| KPCL / Bellary # 3 (EPC)                                       | 1x700  | 3700  |
| NTPC / Mouda –TG                                               | 2x660  | 1567  |
| Bajaj Hindusthan / Lalitpur-BTG                                | 3x660  | 5567  |
| APGENCO / Rayalseema # 6 (Stg IV) (BTG+Sw yard+Stn. C&I+GCB)   | 1x600  | 1445  |
| India Bulls/ Nasik PhII & EPIL Amravati (BTG+ Trfns + Stn C&I) | 10x270 | 2700  |
| SIDCL for Dishergarh Power-BTG                                 | 2x270  | 1258  |

# Our Industry Sector Business

Contribution to total Turnover: 22-28%



## Transmission

- Transformers
- Switchgear
- Indl. Control Gear / Control Panels
- Capacitors
- Insulators
- HVDC/ Transmission Projects etc

## Transportation

- Traction machines
- Traction Control gears
- DESL
- AC Locos / DG Sets / etc

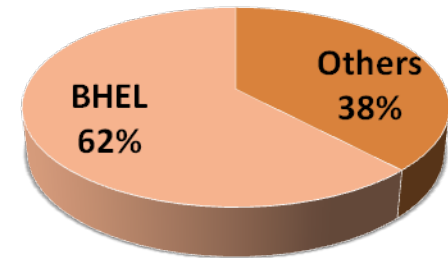
## Other Industrial Products

- Industrial Machines
- Indl. TG / Boiler Sets
- Compressors
- Oil Field Equipment
- Valves etc

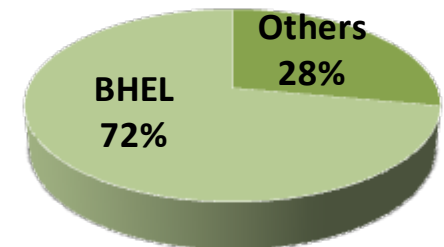
# Our Contribution in Power Sector

- ▶ A major manufacturer of power plant equipment for various fuels
- ▶ Fully indigenized technology up to 600 MW from world leaders
- ▶ Supplies Steam turbines, generators, boilers and matching auxiliaries up to 800 MW ratings including supercritical sets of 660/ 700/ 800 MW
- ▶ 330 coal based sets installed, including 45 sets of 500 MW rating
- ▶ 374 nos. BHEL make Hydro Utility sets installed in the country

**India's Installed Capacity (Utility)**  
1,59,911 MW (31.03.11)

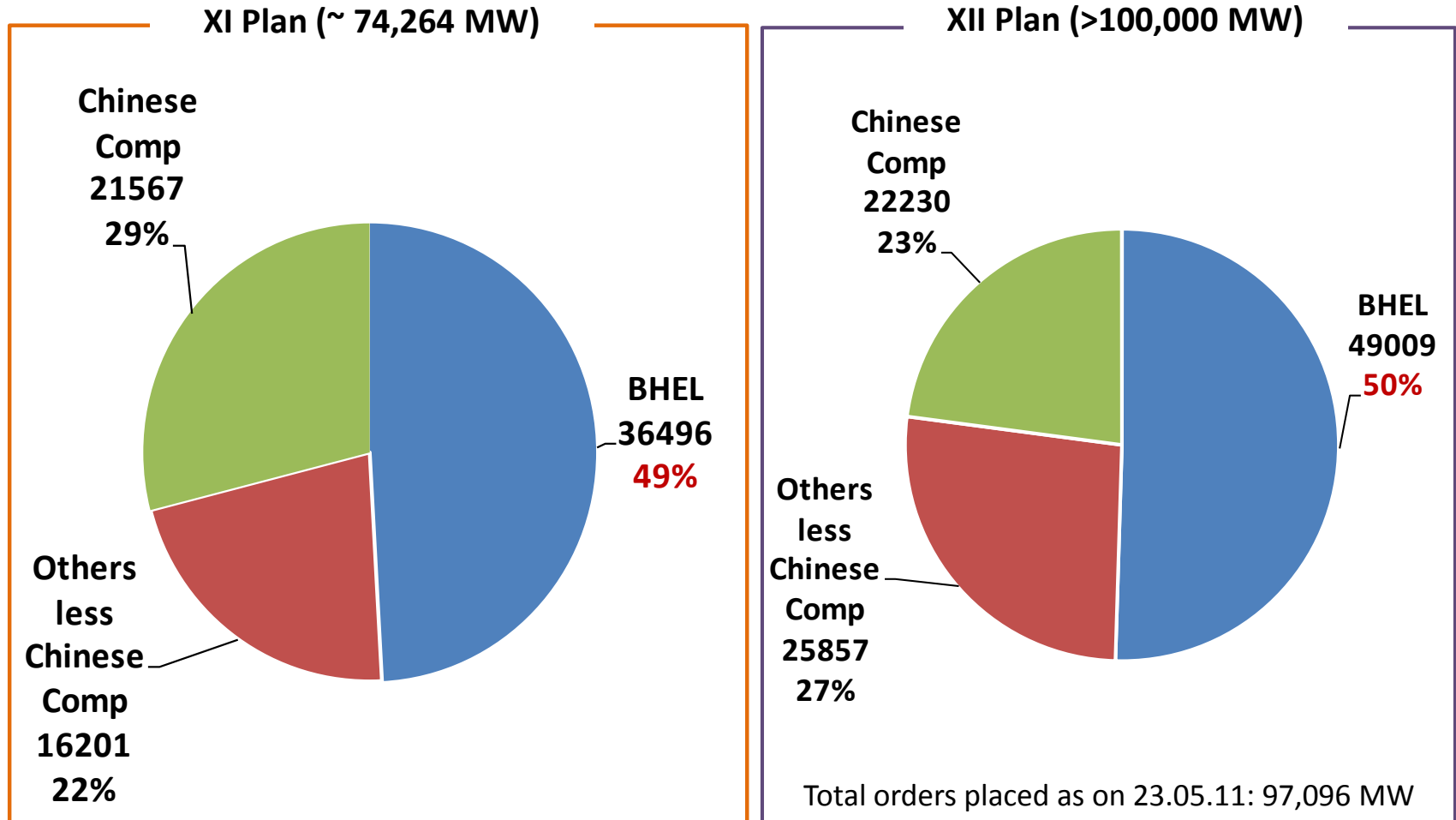


**India's Generation Coal Sets (Utility)**  
6,98,163 million Units (2010-11)



# Our Leadership in Power Sector

## Plan Capacity Addition Program (Utility Sets): Status of ordering

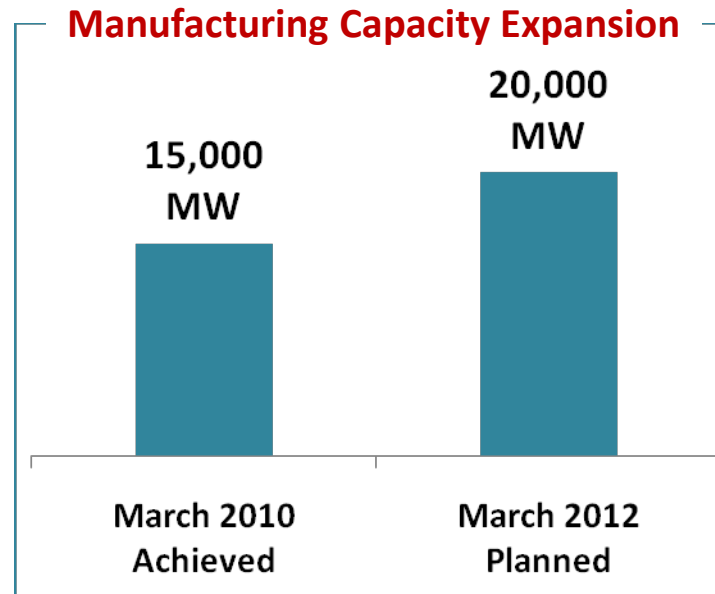


# ***Our Strategy: To Sustain Leadership in Power Sector & Capture Emerging Growth Areas***

- ①** Capacity Enhancement
- ②** Accelerated Project Execution
- ③** Product Cost Competitiveness
- ④** Diversification
- ⑤** Engineering & Technology

# Our Capacity Enhancement Program:

## *Timely, Planned & Scalable to meet Market Demand*



### **Inorganic Growth**

- ▶ Acquired **BHPV** Vizag as 100% subsidiary in 2008. Slated to enhance our capabilities in design, fabrication, supply and erection of custom built process plant equipments. Turnaround in 2010-11
- ▶ **BHEL Electrical Machines Ltd.** (JVC between BHEL & KEL (Kasargod)/ GoK) for manufacturing of products for Railways and Industries. Strategic move to enhance our presence in Transportation, Industrial and Renewable Energy Sectors.

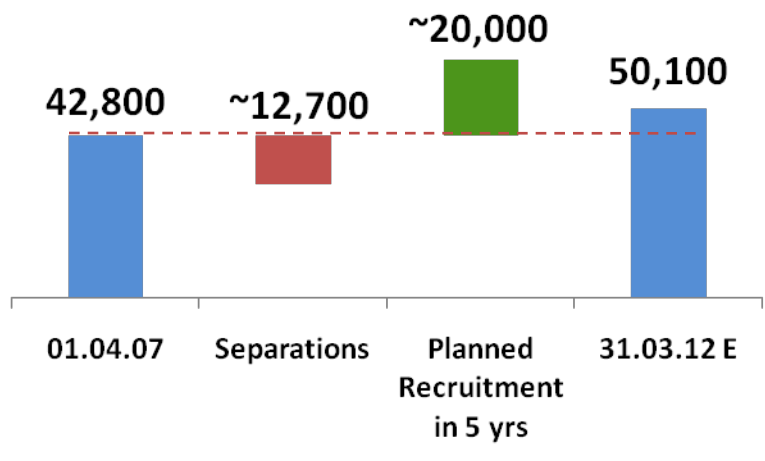
# Strategic Focus & Execution Drive: *Positioned to Sustain Competitive Edge*

## Bridging Skill Deficit

- ▶ Skill enhancement at ITIs in JV/PPP mode: Kabiguru (WB), Latur (Mah),...
- ▶ Leveraging WRI Trichy to train high pressure welders
- ▶ Extensive training to Act Apprentices & Customers
- ▶ Lateral/ Campus/ Special/ FTA Recruitment
- ▶ Retired Specialists as Consultants, Re-Employment

## Human Capital

Manpower as on March 31, 2011: 46,748



## Site Capability Enhancement

- ▶ Greater empowerment of Project Managers
- ▶ Deploying additional Tools & Plants like heavy cranes suitable for erection of sets up to 800 MW.
- ▶ 18 Cranes added in 2010-11
- ▶ Total Cranes as on March 2011: 126
- ▶ Several process improvements to reduce PI to PO conversion time

# We are making our Supply Chain Agile to Accelerate Project Execution

## ***Vendor Base Expansion***

- ▶ 1141 new Vendors added in 2010-11 & Vendor base reaches 25,347.
- ▶ Developing BoP vendors: 40 (2008-09) + 84 (2009-10) + 42 (2010-11)
- ▶ Procurement Office opened in Shanghai, China

## ***AMA***

- ▶ Advanced Manufacturing Action for long lead items

## ***TCA***

- ▶ Technology Collaboration Agreement with Sheffield Forgemasters UK for large size forgings (up to 1000 MW)

## ***IT***

- ▶ e-Procurement , Reverse Auction (~20%)

## ***Rate Contracts***

- ▶ Long term Rate Contracts for Steel, Copper, CRGO, Transformer Oil (contribution to total purchase ~25%)

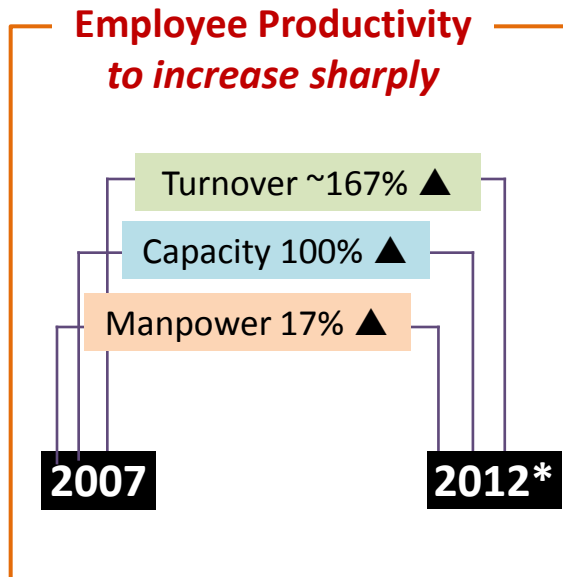
## ***Outsourcing***

- ▶ Enhanced thrust is being given for outsourcing of low tech/ non-core manufacturing

## ***ACF***

- ▶ 'Away Center Fabrication' adopted by Trichy & Ranipet Units

# Positioning ourselves for Steady Profitable Growth: *Product Cost Competitiveness Strategies*



\* Estimate as per Company's  
Strategy Plan 2012

## Material Cost Reduction Efforts

### *Vendor Base Expansion*

- ▶ To reduce Risk & Cost

### *Global Sourcing*

- ▶ Leveraging low cost China Manufacturing for high value forgings

### *Indigenization*

- ▶ Efforts on to form JV with domestic steel manufacturers for indigenization of critical steel materials like CRGO

### *Integrated Operations Improvement*

- ▶ Lean, DTC, PSM
- ▶ ERP/SAP

# Our Diversification Strategies:

## *Expanding our Offerings in New Growth Areas*

### Solar



- ▶ Strategic Alliance with BEL for formation of JV for setting up manufacturing facility (250 MW) for silicon wafers, solar cells & modules
- ▶ Joint Working Arrangement with Abengoa Spain for Concentrated Solar Power Plant (CSP)

### Nuclear



- ▶ Steam generators for new rating 700 MWe Nuclear sets
- ▶ Tripartite JV with NPCIL & Alstom in process for conventional island of Nuclear Projects for 700 MWe & above
- ▶ MoU with GE-Hitachi for cooperation in Nuclear island equipment for Power plants to be set up by NPCIL

### Transportation



- ▶ MoUs with Alstom and GE for participating in the tender for setting up a factory for Electric Loco components at Dankuni, West Bengal and Diesel Loco factory at Marhowra, Bihar respectively.
- ▶ Breakthrough orders for State-of-the-art propulsion equipment for 6000 HP Electric Locomotives and 1400 HP AC EMUs (IGBT based)
- ▶ Executing an order for 200 numbers of 5,000 HP 25 kV AC Mainline Electric Locomotives (Type WAG -7) for Indian Railways.

# Our Diversification Strategies:

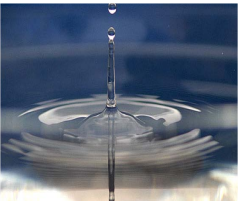
## *Expanding our Offerings in New Growth Areas*

### T&D



- ▶ Strategic Alliance with Toshiba, Japan to establish a JVC to address T&D business in India and other mutually agreed countries. The JVC will cover equipments and projects in EHVAC & UHVAC range including 765 kV transformers and reactors & GIS, in addition to other products and systems.

### Water



- ▶ Manufacturing Associate Agreement with GE India Industrial Private Limited (GEIPL), for Water Treatment Equipment.
- ▶ BHEL will be able to provide more cost-effective membrane-based water treatment systems for power plants and industrial sector for all type of input water like sea water, brackish water and waste water.

### NBFC

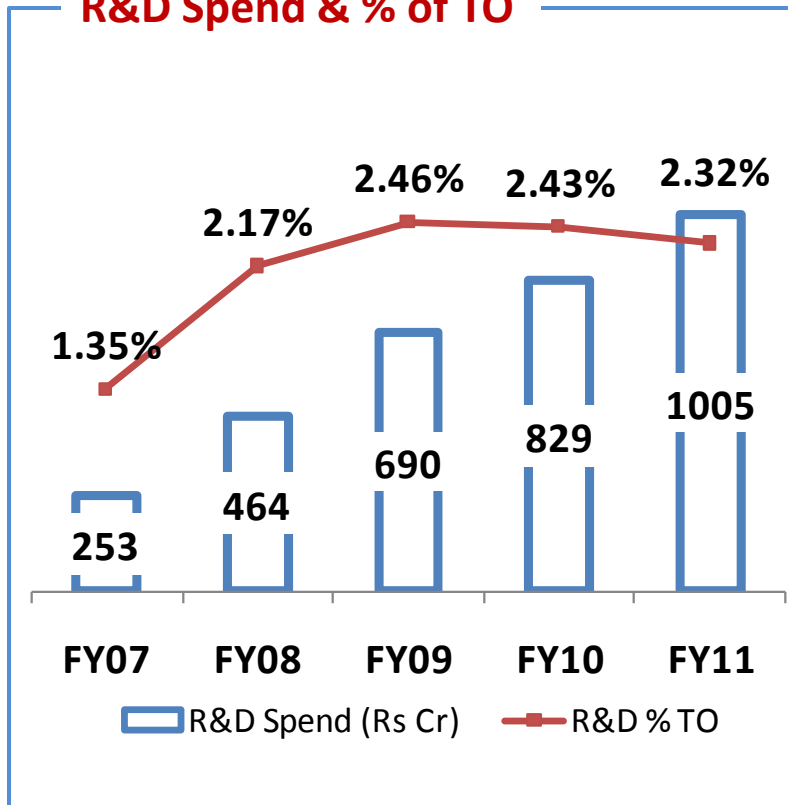


- ▶ Total Solution provider in power generation
- ▶ To finance power projects by providing funding support to attract potential customers & optimize returns on our huge cash reserves.
- ▶ May also expand to other segments like Renewables where funding support is critical

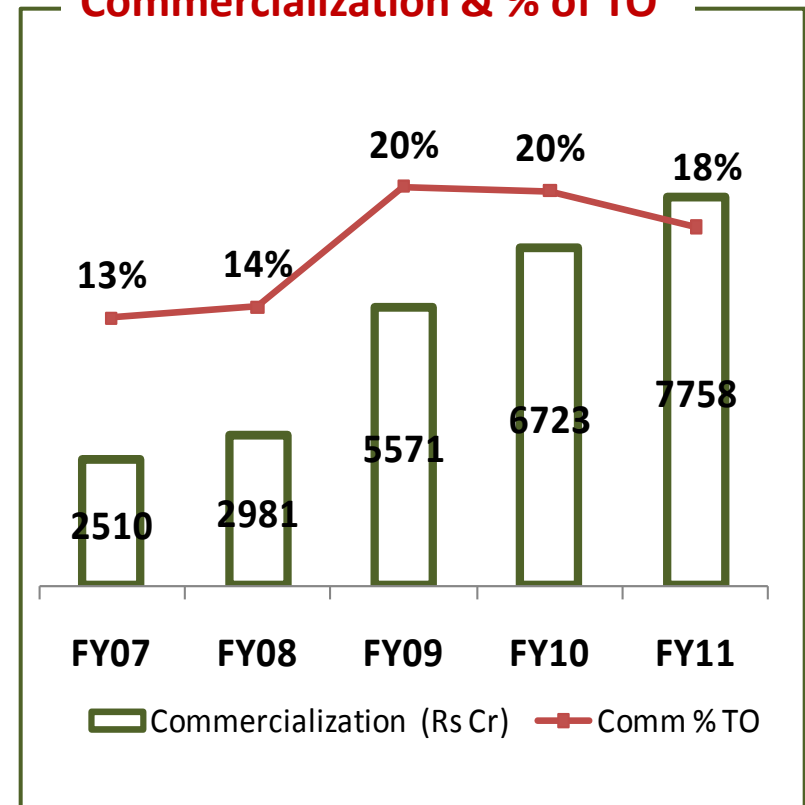
# Engineering & Technology:

## *Investing Heavily to Strengthen our Core Capability*

**R&D Spend & % of TO**



**Commercialization & % of TO**



- ▶ We are No. 2 in R&D spend in India.
- ▶ Today our R&D focus is globally recognized (CII-Thompson Reuters Innovation Award 2010)

# Our R&D focus:

*Ensuring today's requirements while meeting tomorrow's demand*

## Products Development

- ▶ 270/525/600 MW sub-critical sets introduced
  - ▶ Advance Class Gas Turbines tech in place
  - ▶ 765 & 1200 KV UHVAC Transformer developed
  - ▶ IGCC development
  - ▶ Transportation-IGBT technology being pursued
  - ▶ Sole supplier in world for 420 kN/320 kN porcelain insulators for  $\pm 800$  kV HVDC lines
- 
- ▶ We are slated to play a key role in RDD&D in India's first coal fired Advanced Ultra Supercritical (AUSC) power plant in association with Indira Gandhi Centre for Atomic Research (IGCAR) and NTPC.
  - ▶ AUSC: 5% more efficiency; 12% savings in coal; Less GHG emissions

## Supercritical Domain

- ▶ Introduced Supercritical Technology with Technology tie-ups with Alstom (Boiler), Siemens (TG) & MHI (Pumps)
- ▶ Rapid technology absorption in partnerships with customers
- ▶ SC Orders' basket:
  - ▶ 2X660 MW Barh (SG & TG)
  - ▶ 3X660 MW Bara (SG & TG)
  - ▶ 2X800 MW Krishnapatnam (SG)
  - ▶ 2X800 MW Yermarus (SG & TG)
  - ▶ 1X800 MW Edlapur (SG & TG)
  - ▶ 1X700 MW Bellary #3 KPCL (EPC)
  - ▶ 2x660 MW NTPC Bulk Tender (TG)
  - ▶ 3x660 MW Bajaj Hindustan (SG & TG)

Total Supercritical orders:  
**14 TGs and 14 SGs**

## ► Cautionary Statement

*Statements in this “presentation” describing the company’s objectives, estimates, expectations or predictions may be “forward looking statements” within the meaning of applicable securities laws and regulations. Actual results could differ materially from those expressed or implied. Important factors that could make a difference to the company’s operations include global and Indian demand supply conditions, finished goods prices, cyclical demand and pricing in the company’s principal markets, changes in government regulations, tax regimes, economic developments within India and the countries within which the company conducts business and other factors such as litigation and labour negotiations. The company assumes no responsibility to publicly amend, modify or revise any forward looking statement, on the basis of any subsequent development, information or events, or otherwise.*



**Thank You**