



# Bharat Heavy Electricals Ltd.

## Business & Strategy Overview

BoA Merrill Lynch  
15<sup>th</sup> India Investor Conference 2011  
10<sup>th</sup> February 2011  
New Delhi

# Our Credentials

- ▶ A US\$7.3 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 70 countries
- ▶ Installed base of more than 1,00,000 MW
- ▶ 15 Manufacturing Units



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



**Power**



**Industry**



**Oil & Gas**



**Transmission**

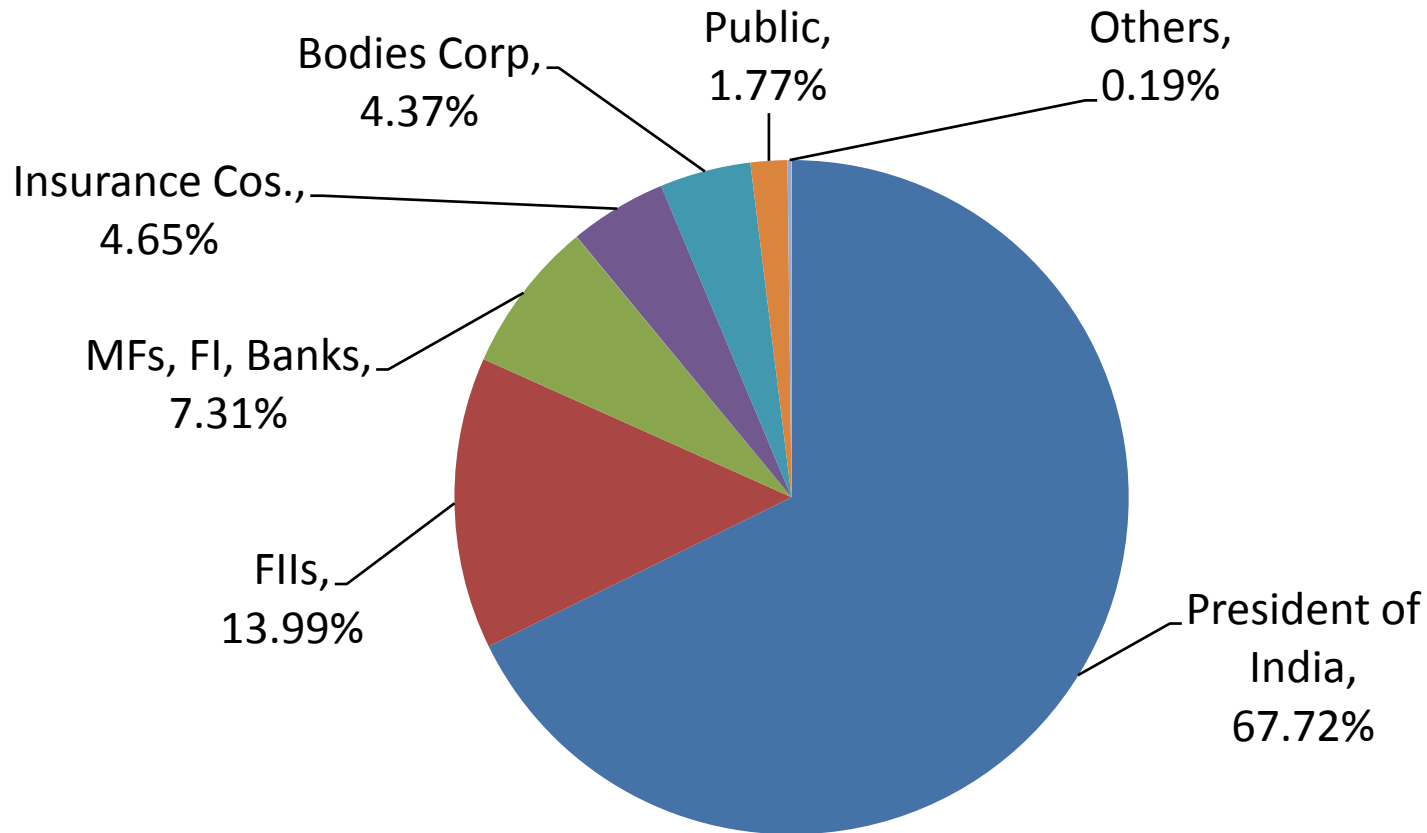


**Transportation**



**NCES (Solar)**

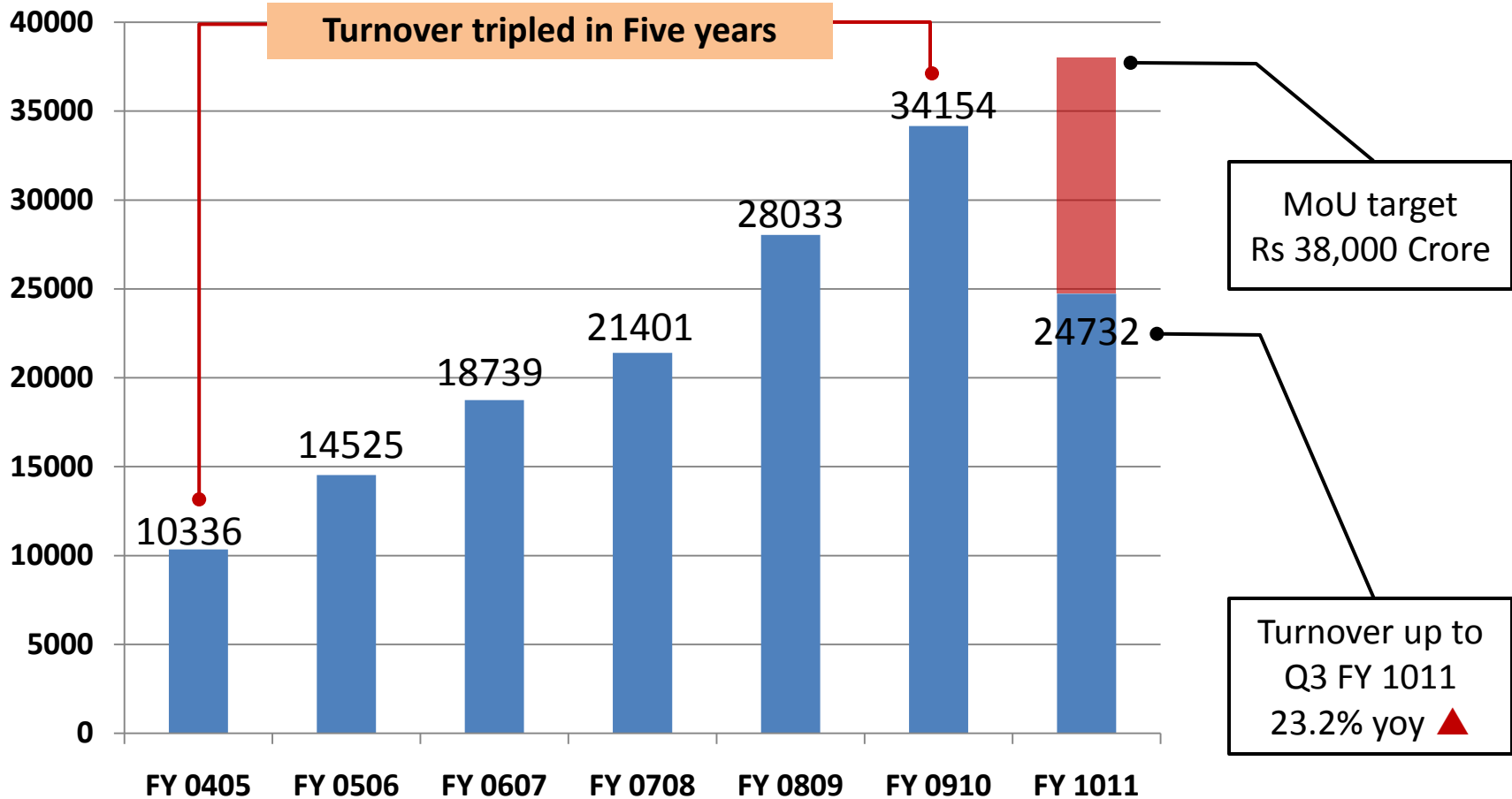
# Our Shareholding Pattern



( As on 31<sup>st</sup> Dec 2010 )

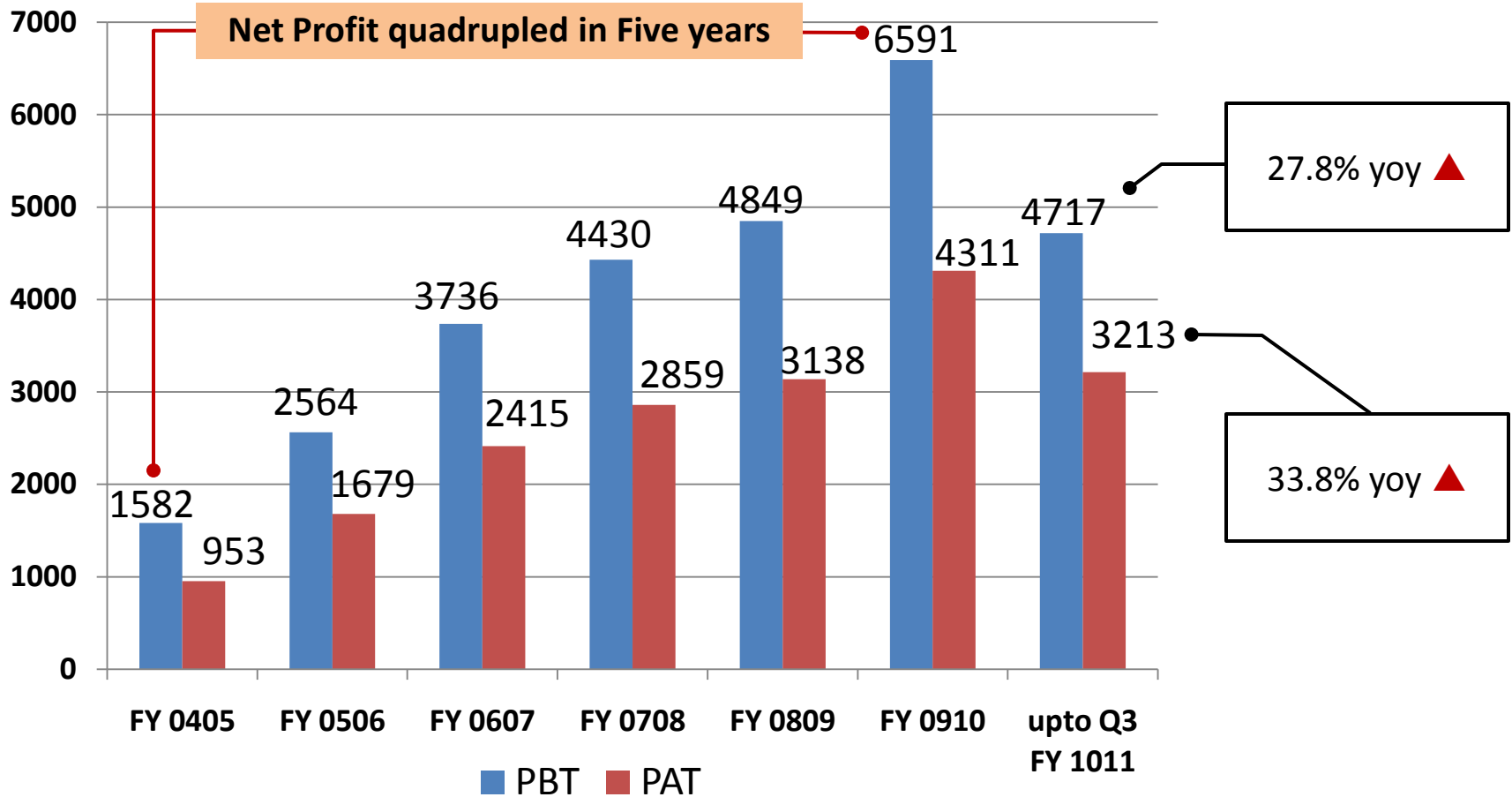
# Our Performance: *Strong & Sustainable*

## Turnover (Rs Crore)



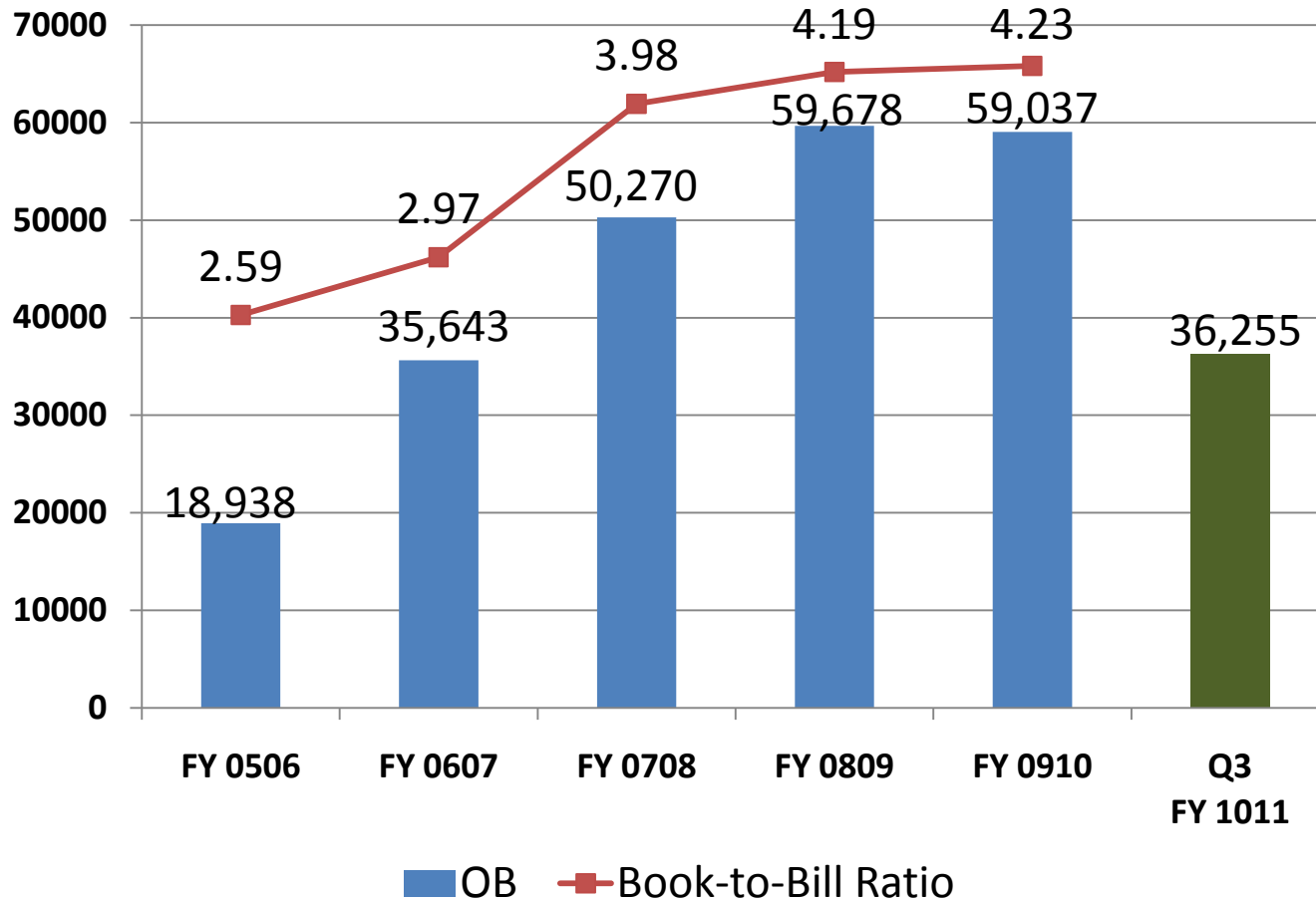
# Our Performance: *Strong & Sustainable*

## Profitability (Rs Crore)



# Our Performance: *Strong & Sustainable*

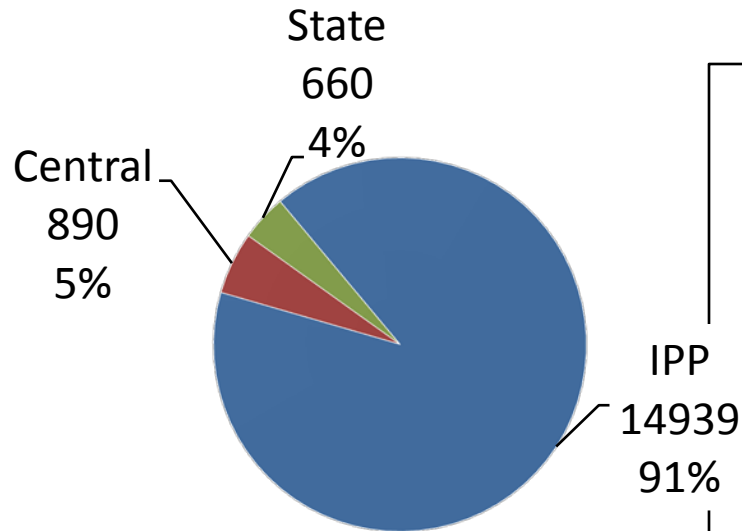
## Order Book (Rs Crore)



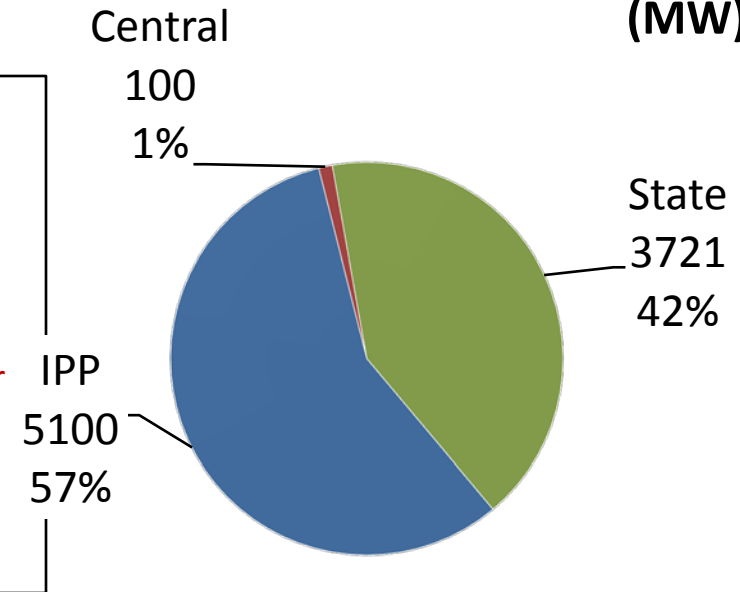
**Total Order Book  
as on Dec 31, 2010 :  
Rs 1,57,611 Crore**

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

## Orders Received in FY10



## Orders Received up to Q3FY11 (MW)



- Abhijit
  - ACC
  - Adhunik
  - Hindalco
  - India Bulls
  - Jaypee Gr
  - Jindal Power
  - Sterlite
  - Tata
  - Videocon
  - Avantha

Our performance edge is driven by

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

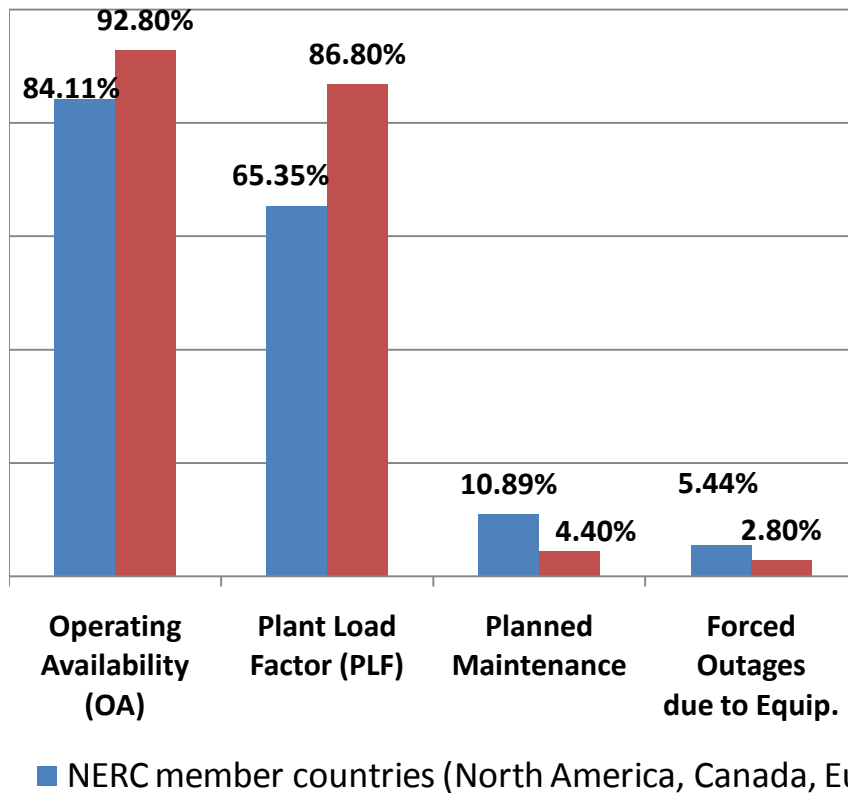


Confidence reposed by IPPs indicate our

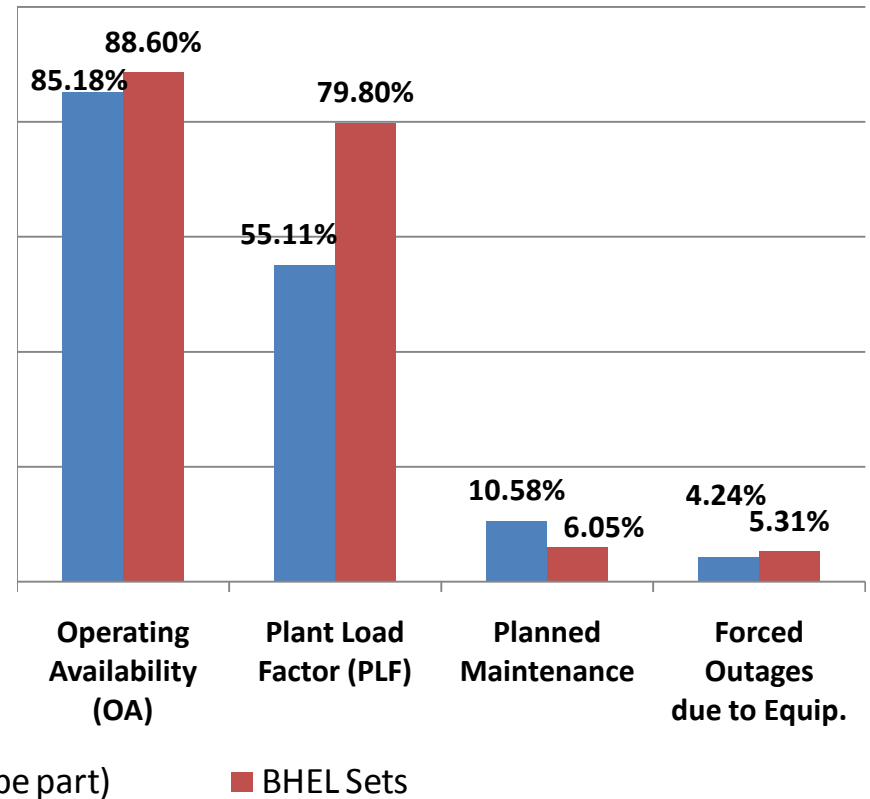
- ▶ Product Quality
- ▶ Execution Capability
- ▶ Service Reliability
- ▶ Engineering Excellence

# Our Equipments' Performance: Setting Global Benchmarks

## Performance of 500 MW Sets



## Performance of 200-300 MW Sets



Source: North American Electric Reliability Council (NERC); 2009

# Major Orders Received in Q3 FY1011

## Order Book up to Q3 FY1011

<b>Power :</b>	<b>Rs 28,127 Crore (8,921 MW)</b>
<b>Industry:</b>	<b>Rs 6,924 Crore (1,292 MW)</b>
<b>Exports:</b>	<b>Rs 2,128 Crore (752 MW)</b>
<b>Total:</b>	<b>Rs 36,255 Crore (10,965 MW)</b>

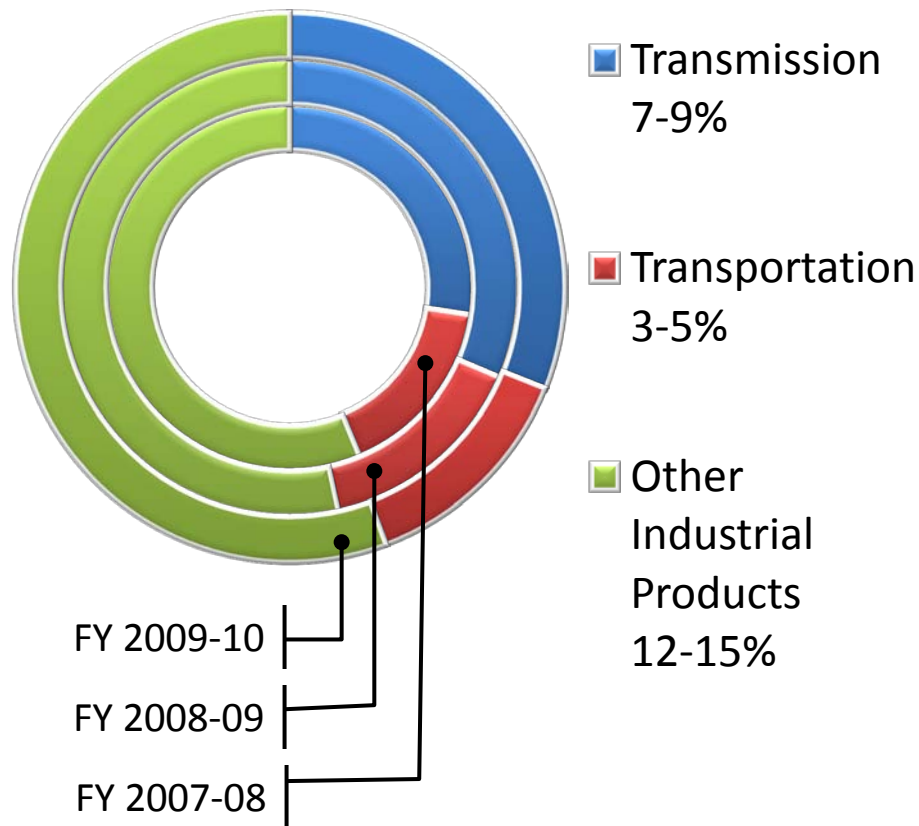
- ▶ 5x270 MW Nasik Ph II from India Bulls for Rs 2875 crore
- ▶ 5x270 MW Amravati Ph II from Elena Power for Rs 2883 crore
- ▶ 1x600 MW Rayaseema #6 from APGENCO for Rs 1445 crore

- ▶ 66 sets of AC EMU Electrics from ICF Chennai for Rs 98 crore
- ▶ 1 no of SRGM from Goa Shipyard for Rs 47 crore
- ▶ 3 no of turbo blower package from SAIL for Rs 255 crore
- ▶ 11 no of 700 HP TPP DESL from JSW Steel for Rs 35 crore
- ▶ 4 orders of solar power projects total amounting to Rs 98 crore

- ▶ 672 MW Marib II Gas Turbine based Power Proj from Yemen for Rs 1976 crore which is the single largest export order for GT based power projects.

# 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

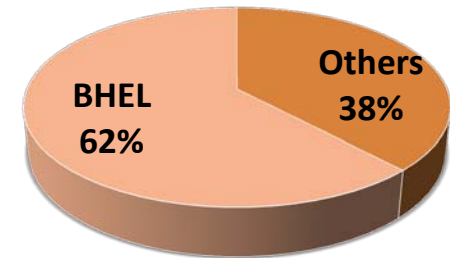
## Other Industrial Products

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

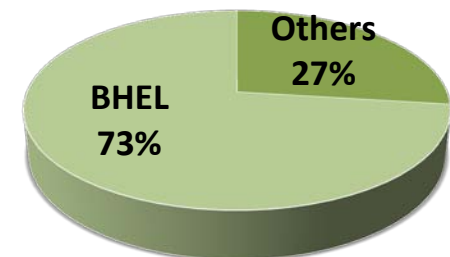
# Our Contribution in Power Sector

- ▶ 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
- ▶ 315 coal based sets installed, including 37 sets of 500 MW rating
- ▶ 365 nos. BHEL make Hydro Utility sets installed in the country

India's Installed Capacity (Utility)  
1,47,150 MW (31.03.10)

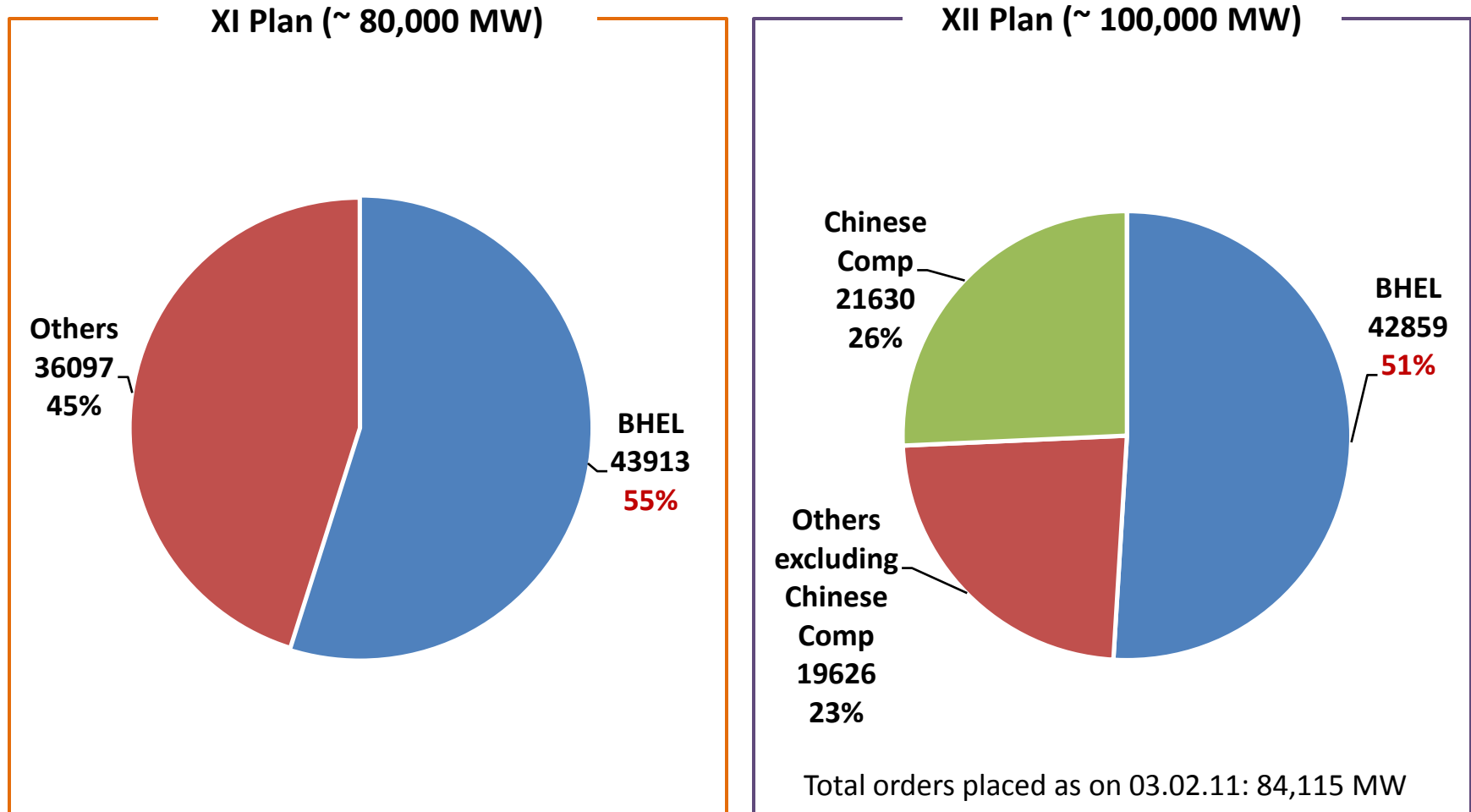


India's Generation Coal Sets (Utility)  
5,39,524 million Units (2009-10)



# Our Leadership in Power Sector

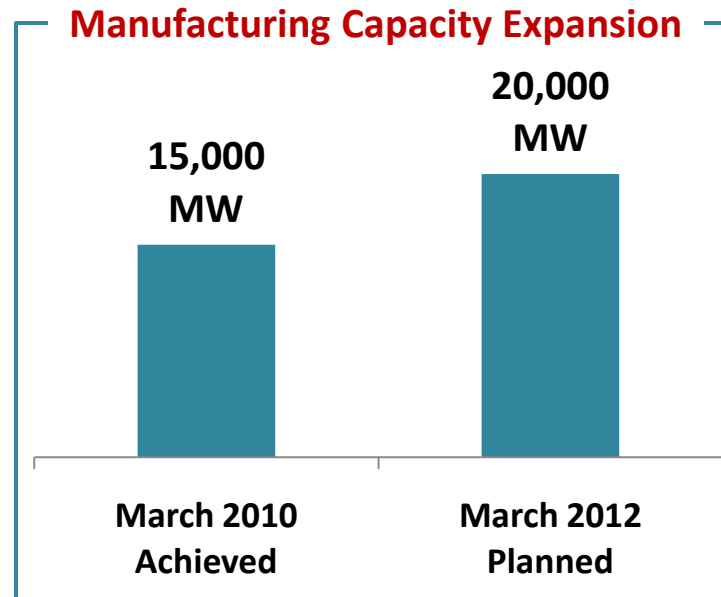
## Plan Capacity Addition Program (Utility Sets): Status of ordering



# ***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.
- ▶ **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, 2010: 46,274



## Site Capability Enhancement

- ▶ Greater empowerment of Project Managers
- ▶ Deploying additional Tools & Plants like heavy cranes suitable for erection of sets up to 800 MW.
- ▶ 31 Cranes added in 2009-10
- ▶ Total Cranes as on March 2010: 108
- ▶ To add another 31 cranes in 2010-11

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

## ***Vendor Base Expansion***

- ▶ 1148 new Vendors added in 2009-10 & Vendor base reaches 24,206. Around 500 more added till Dec 2010 in current FY
- ▶ Developing BoP vendors: 40 (2008-09) + 84 (2009-10)
- ▶ 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***

- ▶ Reverse Auction, e-Procurement

## ***Rate Contracts***

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

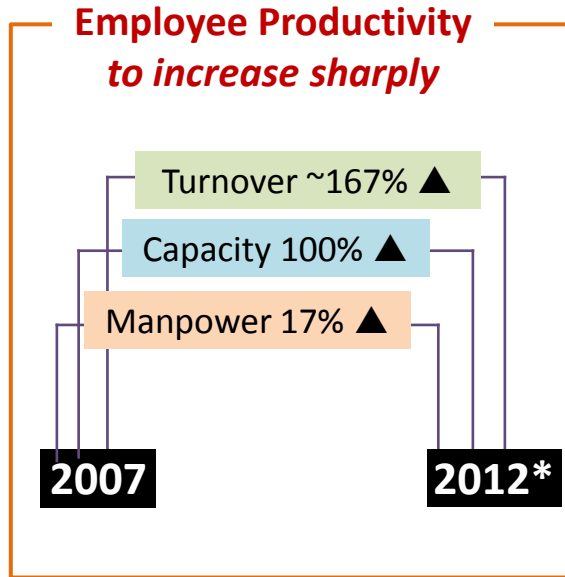
## ***Outsourcing***

- ▶ 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 SAIL 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:

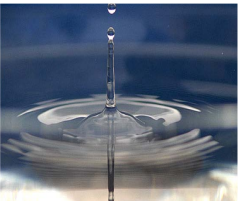
## *Expanding our Offerings in New Growth Areas*

### 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



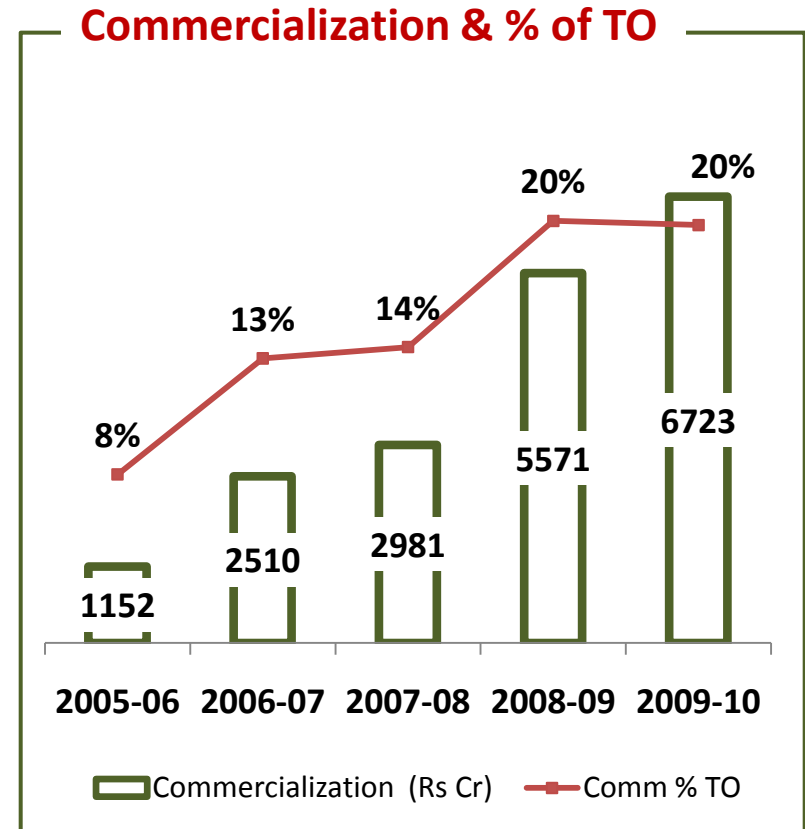
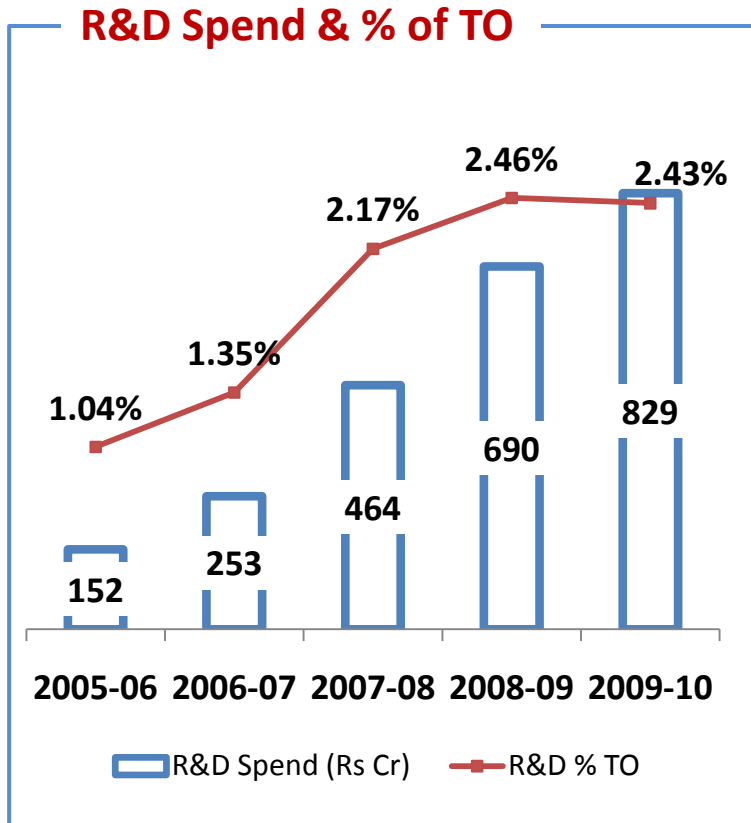
- ▶ Manufacturing Associate Agreement with GE India Industrial Private Limited (GEIPL), for Water Treatment Equipment.
- ▶ BHEL will be able to provide more cost-effective membrane-based water treatment systems for power plants and industrial sector for all type of input water like sea water, brackish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



- ▶ 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- development being pursued
- ▶ 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 800 MW 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)

## ▶ 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**