



# BHEL Corporate Presentation

February, 2020



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# 1. BHEL Overview



# India's Flagship Engineering & Manufacturing Company

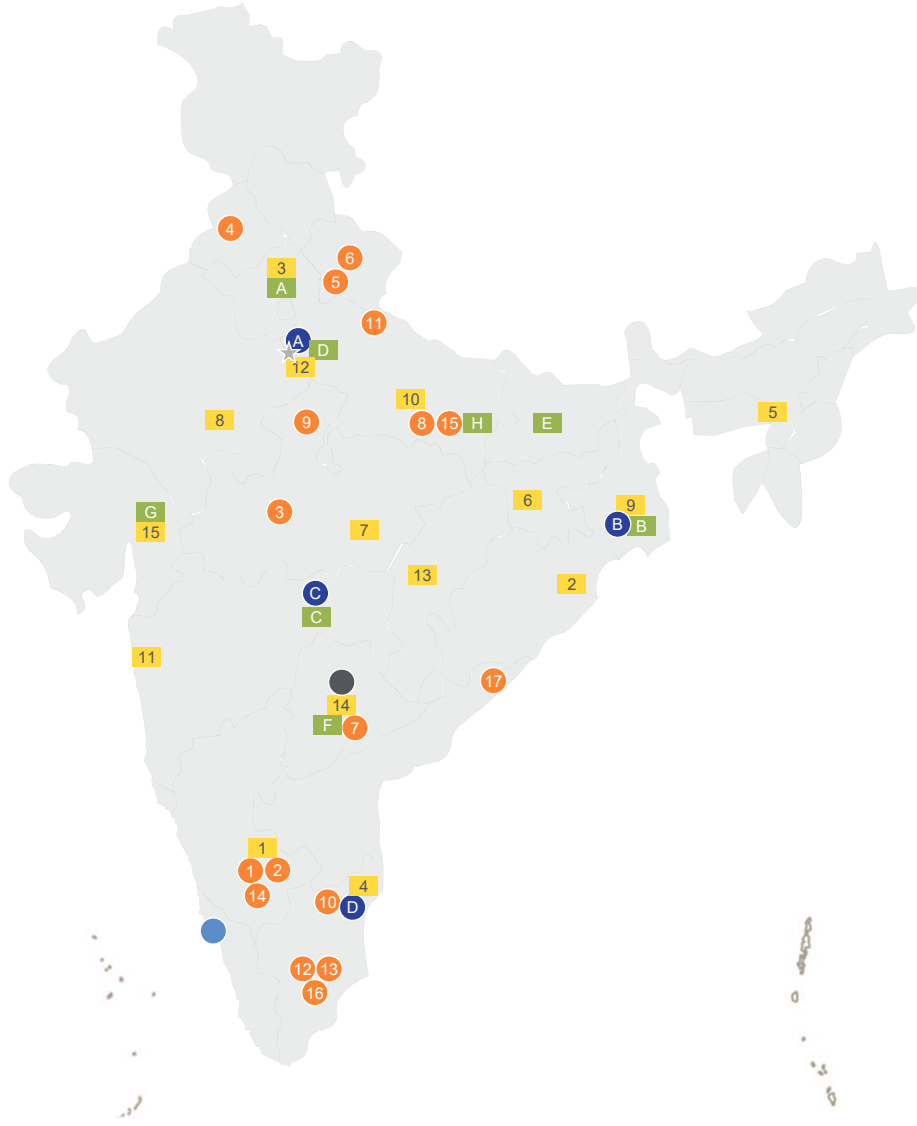
























<b>Background</b>	<ul style="list-style-type: none"> <li>Over 50 years of experience</li> <li>Consistent dividend paying company for last forty years</li> </ul>
<b>Strong Engineering &amp; Manufacturing Base</b>	<ul style="list-style-type: none"> <li>Integrated power plant equipment manufacturer with capability to deliver 20,000 MW of power plant equipment per annum</li> <li>Catering to all fuel types viz. Coal, Hydro, Nuclear, Gas &amp; Solar</li> <li>Serving core sectors of industry viz. Power, Transmission, Industrials Systems and Products, Transportation (Railway), Renewable Energy, Oil &amp; Gas, and Defence</li> </ul>
<b>Pan India Presence</b>	<ul style="list-style-type: none"> <li>16 manufacturing units + 2 repair centres + 8 service centres</li> <li>Infrastructure to deal with 150+ project sites (across India and abroad)</li> <li>About 34,200 employees</li> <li>1 Subsidiary + 3 active Joint Ventures</li> </ul>
<b>Global Footprint</b>	<ul style="list-style-type: none"> <li>References in 83 countries</li> <li>About 17,000 MW contracted and 11,000+ MW executed</li> <li>Executing 6 GW projects in 12 Countries</li> </ul>
<b>Rich Experience</b>	<ul style="list-style-type: none"> <li>185+ GW capacity installed globally</li> <li>31,500+ AC machines supplied</li> <li>380 Electric Locos supplied to Indian Railways &amp; Other Industries</li> <li>&gt; 50% of traction equipment for IR Locos and EMUs by BHEL</li> <li>1100+ MW Solar PV Portfolio</li> <li>630,000+ MVA transmission equipment supplied</li> </ul>
<b>Innovation</b>	<ul style="list-style-type: none"> <li>R&amp;D Expenditure (&gt;2.5% of Turnover) – one of the highest in Indian engineering field</li> <li>Filing patent / copyright applications regularly, @ more than 3 every 2 days.</li> </ul>



# Pan India Presence

## BHEL's Operational Footprint in India



- |  <b>Business Offices</b> |  <b>Manufacturing Units</b>                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Bangalore                                                                                                 |    Bangalore |
| 2 Bhubaneswar                                                                                               |  Bhopal                                                                                                                                                                            |
| 3 Chandigarh                                                                                                |  Goindwal                                                                                                                                                                          |
| 4 Chennai                                                                                                   |   Haridwar                                                                                      |
| 5 Guwahati                                                                                                  |  Hyderabad                                                                                                                                                                         |
| 6 Ranchi                                                                                                    |  Jagdishpur                                                                                                                                                                        |
| 7 Jabalpur                                                                                                  |  Jhansi                                                                                                                                                                            |
| 8 Jaipur                                                                                                    |  Ranipet                                                                                                                                                                           |
| 9 Kolkata                                                                                                   |  Rudrapur                                                                                                                                                                          |
| 10 Lucknow                                                                                                  |   Tiruchirappalli                                                                               |
| 11 Mumbai                                                                                                   |  Thirumayam                                                                                                                                                                        |
| 12 New Delhi                                                                                                |  Visakhapatnam                                                                                                                                                                     |
| 13 Raipur                                                                                                   |                                                                                                                                                                                                                                                                       |
| 14 Secunderabad                                                                                             |                                                                                                                                                                                                                                                                       |
| 15 Vadodara                                                                                                 |                                                                                                                                                                                                                                                                       |
- 
- |  <b>Regional Offices (Power Sector)</b>                      |  Corporate Office New Delhi |
|---------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| A Noida (Northern Region)                                                                                                                         |  Corporate R&D Hyderabad    |
| B Kolkata (Eastern Region)                                                                                                                        |                                                                                                                  |
| C Nagpur (Western Region)                                                                                                                         |                                                                                                                  |
| D Chennai (Southern Region)                                                                                                                       |                                                                                                                  |
|  Subsidiary—BHEL Electrical Machines LTD., Kasaragod, Kerala |                                                                                                                  |

Note: Map not to scale.

# Single Source with Multiple Solutions for Infrastructure & Industrial Segments

## Power

Execution of power projects from concept to commissioning

### Products:

- Thermal: up to 1000 MW BTG ratings
- Emission control equipment-FGD, ESP, SCR
- Gas: gas turbines & generators upto 297 MW
- Hydro: EM Package up to 400 MW
- Nuclear: SG & TG sets upto 700 MWe

## Transmission

Wide range of transmission systems & products including EHV & UHV

### Products:

- Power transformers
- Instrument transformers
- Shunt reactors
- Switchgear
- Capacitors
- Control & Protection equipment
- HVDC terminals
- Flexible AC transmission

## Transportation

Wide range of traction propulsion equipment for all types of rolling stock

### Products:

- Locos, EMU & metro coaches
- Electric rolling stock – AC & DC
- Electrics for urban transportation system
- Propulsion equipment for EMU/ Loco
- Railway track electrification

## Renewable Energy

EPC solutions for ground mounted and roof top solar PV power plants

### Products:

- Solar cells and modules
- Power Control Unit (PCU) for solar PV plants
- Passive Solar Tracking modules



# Single Source with Multiple Solutions for Infrastructure & Industrial Segments

## Water

Turnkey solutions for power plants, industries and municipal segments

### Products:

- Pre Treatment Plant
- Sea Water Reverse Osmosis and Demineralization Plant
- Effluent Treatment Plant
- Sewage Treatment Plant and Tertiary Treatment Plant
- Zero Liquid Discharge System

## Defence & Aerospace

Strategic equipment for Indian defence forces for over 20 years

### Products:

- Super Rapid Gun Mount
- IPMS for Naval ships
- Turret Casting For T72 Tanks
- Integrated Platform Management System For Naval Ships
- Compact Heat Exchanger For LCA
- Space Grade Solar Panel
- Space Grade Li-ion Battery

## Industrial Products & Systems

Wide Range Of Industrial Products

### Products:

- Oil Rigs
- Well Head & X-mas Tree Valves
- Fabricated Equipment & Boiler Feed Pumps
- Compressors
- AC Machines
- Valves

## Energy Storage Solutions

Focus on electric mobility, battery storage & railway track electrification

### Products:

- Energy Storage, Power Conditioning & Energy Management Systems
- Complete Containerized Solutions
- Electric Vehicle Chargers
- Electric Power Train
- Lithium Ion Battery Packs
- EPC solutions for railway electrification

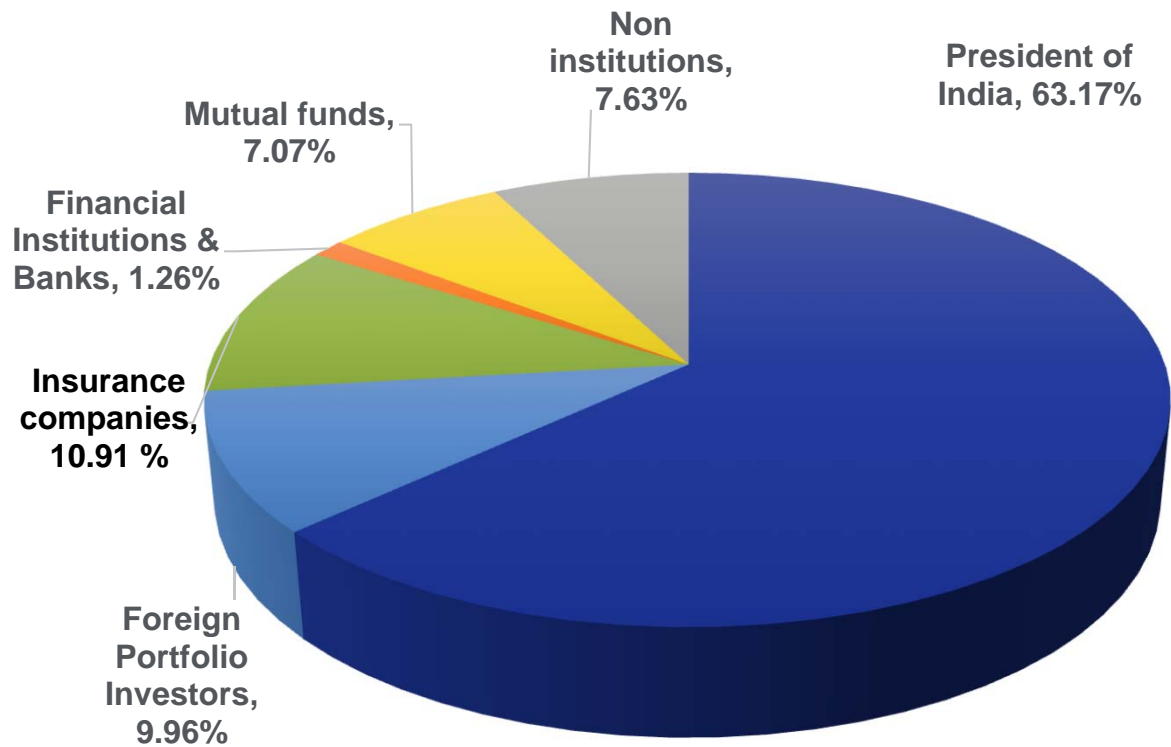




# One of the Seven “Maharatna” CPSEs

## Shareholding Pattern

(as on 31/12/2019)



Listed on BSE on 12<sup>th</sup> October 1992  
Listed on NSE on 03<sup>rd</sup> November 1994

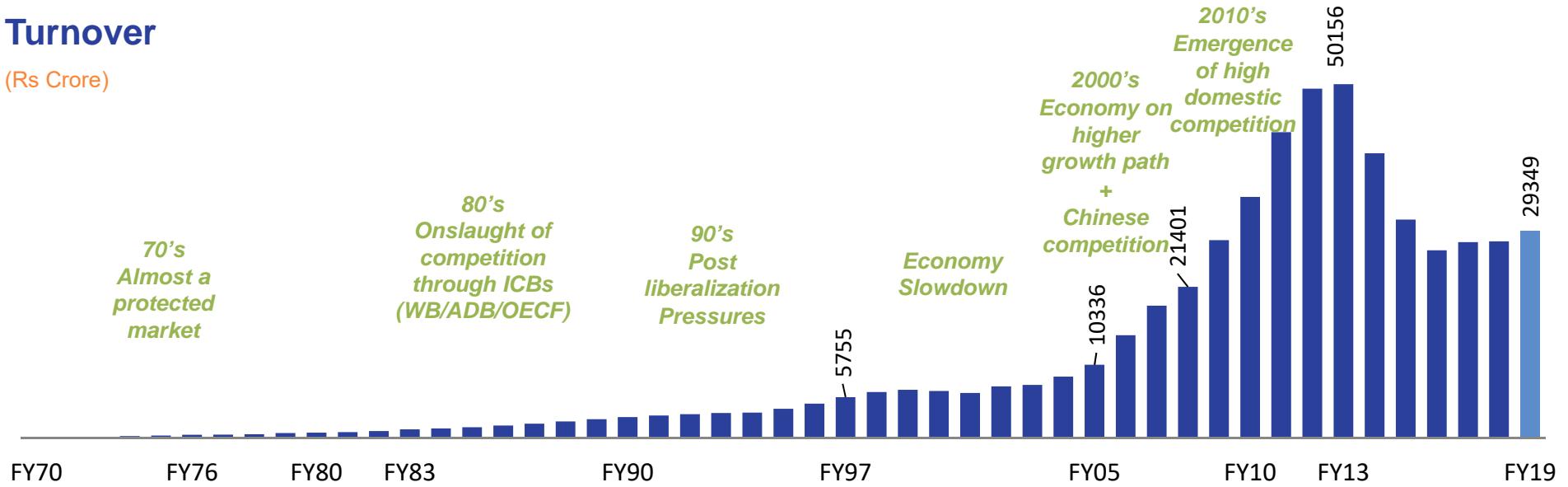
Share Price of face value Rs. 2  
52 Wk High / Low\*:  
INR 78.75/INR 35.80\*

Market Cap\*:  
INR 12,849 Cr

# Sustained Growth over its long journey

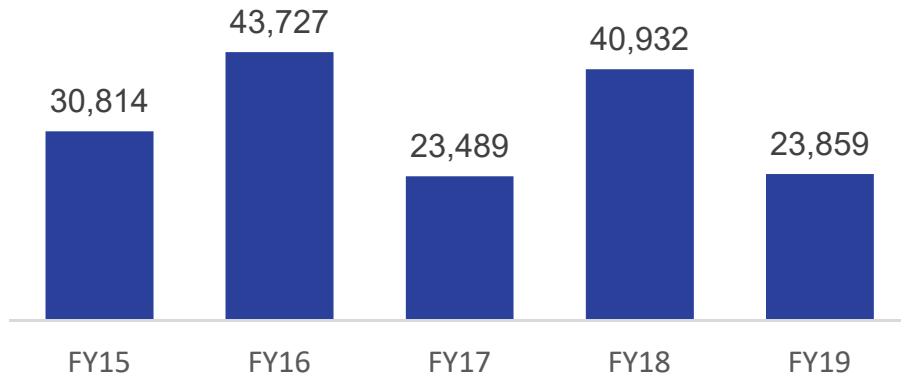
## Turnover

(Rs Crore)



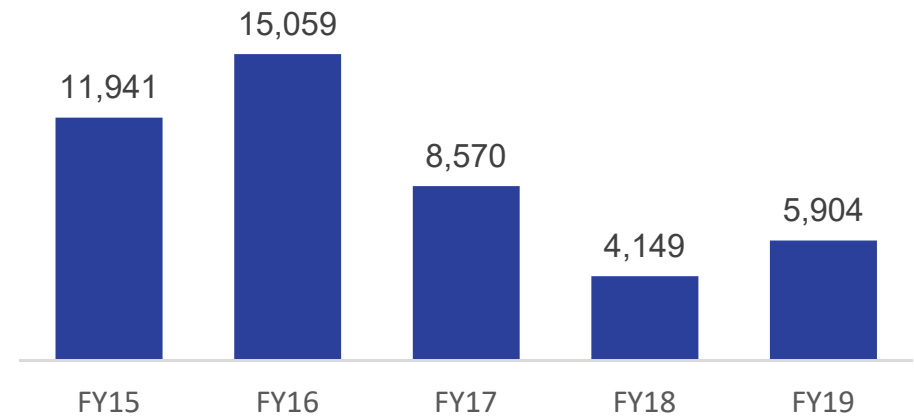
## Order Book Receipts

(Rs. Crore)



## Project Execution Performance

Commissioning/Synchronization (MW)

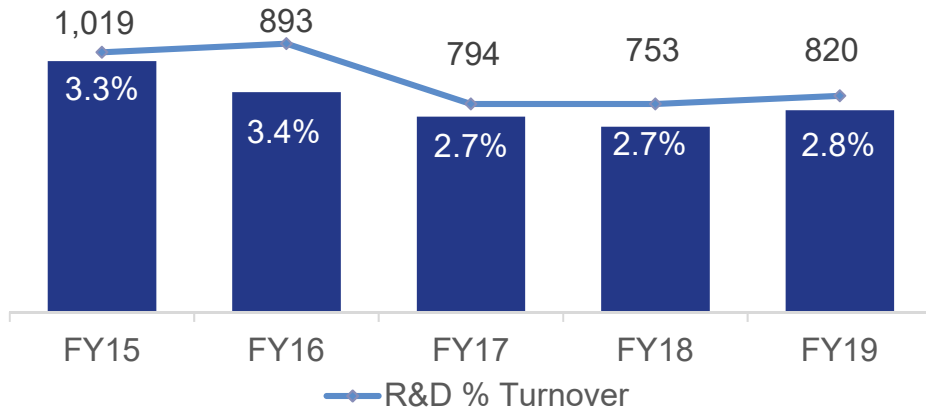




# Continuous Focus on R&D

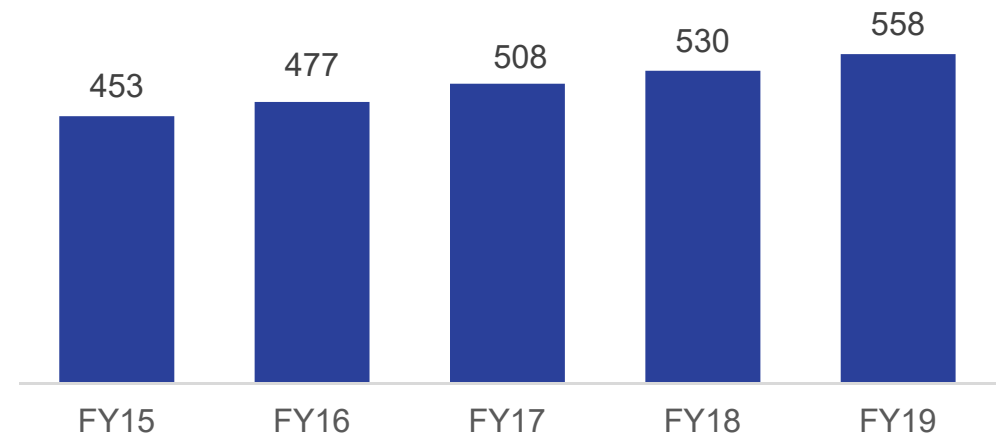
## High Spend on R&D

(Rs Crore)



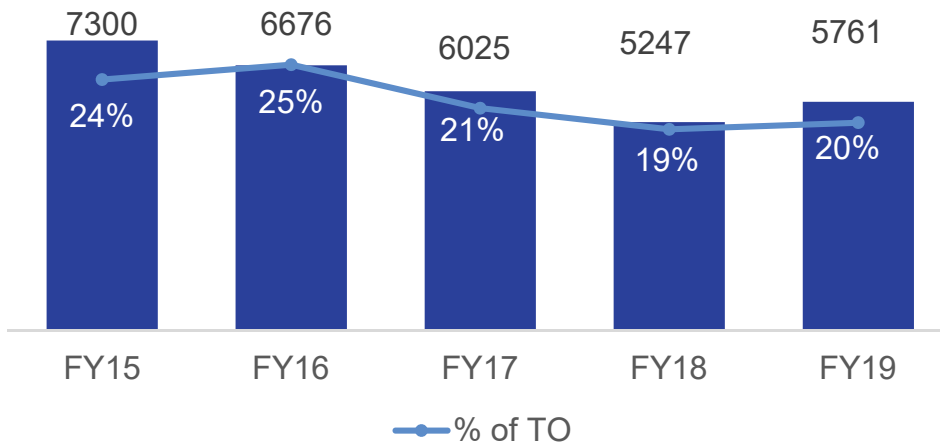
## Filing of Patents and Copyrights

(Nos.)



## Turnover from In – House Development

(Rs Crore)



**Total Filings: 4,561 nos. (upto 31.03.2019)**

# Technology – Acquiring “Know – How” and “Know – Why” Capabilities

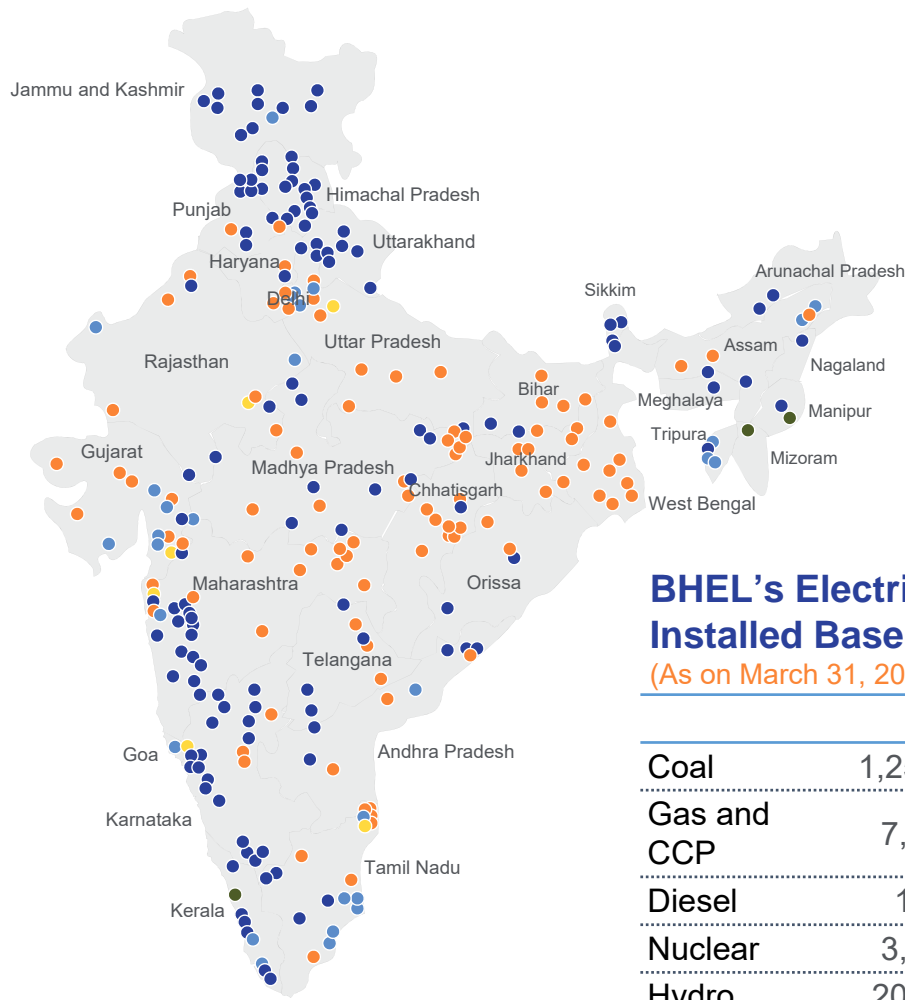
## Building Indigenous Technology Capabilities

- Started with technology support from Global OEMs and developed indigenous capabilities
- Capability to design product to customer specs
- Better understanding of Indian coals
- Offering coal based sets of ratings upto 1000 MW
- IGBT based technology in Transportation segment
- Nuclear sets of ratings upto 700 MWe
- UHVAC Transformer and Reactors
- GIS substations
- Emission control equipment – NOx, SOx and particulates control
- Propulsion systems and regenerative braking systems for electric locomotives
- Currently developing India's first coal fired Advanced Ultra Supercritical (AUSC) power plant technology with IGCAR & NTPC
- Developing coal-to-methanol technology for industrial scale methanol production
- Propulsion systems for electric vehicles



# BHEL Make Electric Utilities Installations Across India Covering Entire Range & Type

## Coal, Gas, Nuclear, Diesel and Hydro Projects

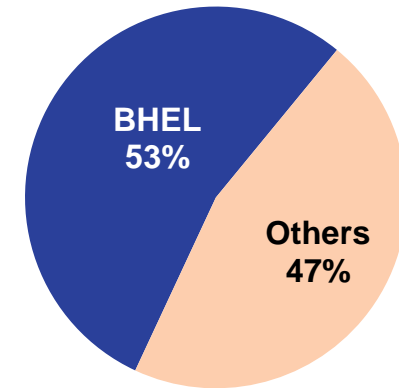


### BHEL's Electric Utility Installed Base in India (As on March 31, 2019)

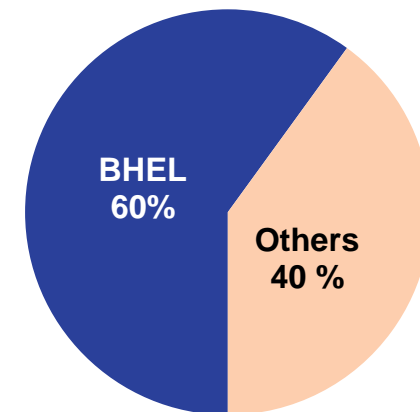
	MW
Coal	1,25,035
Gas and CCP	7,622
Diesel	199
Nuclear	3,340
Hydro	20,697
<b>Total</b>	<b>1,56,894<sup>\$</sup></b>

Legends ● Hydro ● Gas and CCP ● Diesel ● Coal ● Nuclear

## Contribution in total installed capacity\* (As on March 31, 2019)



## Contribution in power generation^ (During FY 2018-19)



# Global Presence

References in 83 countries across all six continents of the world and Offices in 3 countries



- ✓ First large turnkey project export by Indian co. – Libya (1977)
- ✓ Consistent Performance – ~17,000 MW contracted and ~11,000 MW executed
- ✓ Presence in all segments
  - Thermal
  - Hydro
  - Oil & Gas
  - Solar
  - Transmission
- ✓ Executing 6 GW projects in 12 Countries
  - Executing the largest ever export order of 2 x 660 MW Maitree Super Thermal Power Project, Bangladesh
- ✓ Bagged 900 MW Arun-3 Hydroelectric, Nepal's largest Hydro Project (upon completion)



# Current Board Members



**Dr. Nalin Shinghal**  
*Chairman & Managing Director*

## Functional Directors



**Subodh Gupta**  
*Director (Finance)*



**S. Balakrishnan**  
*Director (Industrial Systems & Products)*



**Manoj Varma**  
*Director (Power)*



**Kamlesh Das**  
*Director (Engineering, Research & Development)*



**Anil Kapoor**  
*Director (Human Resources)*

## Independent Directors



**Desh Deepak Goel**



**Ranjit Rae**



**Rajesh Sharma**



**Raj Kamal Bindal**



**Manish Kapoor**

## Govt. Nominee Directors



**Shashank Priya**  
*Additional Secretary & Financial Advisor, Ministry of Commerce & Industry*



**Amit Varadan**  
*Joint Secretary DHI, Ministry of Heavy Industries & Public Enterprises*

# Government of India Support

- Government of India owns 63.17% stake in BHEL
- 2 Government nominee directors

Awarded 'Maharatna' Status in 2013

## Numerous Awards & Recognition



## Board of Directors – structure

- The composition of Board of Directors of BHEL has an appropriate mix of Executive Directors represented by Functional Directors including CMD, and Non-executive Directors represented by Government Nominees & Independent Directors, to maintain the independence of the Board and to separate the Board functions of management and control.
- The total number of Directors sanctioned for BHEL Board is 16 represented by 6 Functional Directors (incl. CMD), 2 Govt. Nominee Directors and 8 Independent Directors.

# Corporate Governance Compliances

- Code of Business Conduct & Ethics for Board Members and Senior Management Personnel – in place
- Board level periodic reviews of compliance reports for all laws applicable to BHEL
- Vigil mechanism in place to report genuine concerns of Directors & Employees
- All the requisite Board level committees are functional in BHEL with the composition in line with the requirements of Companies Act, Listing Regulations & SEBI Guidelines
- Code of Conduct in place for regulating & reporting trading by Insiders & Fair disclosure in compliance with SEBI guidelines on the matter
- Risk Management Committee in place to review the Risk governance structure, risk assessment & management frame work, guidelines, policies & processes for risk assessment & management
- Resolution of 100% Shareholders' complaints at each quarter end



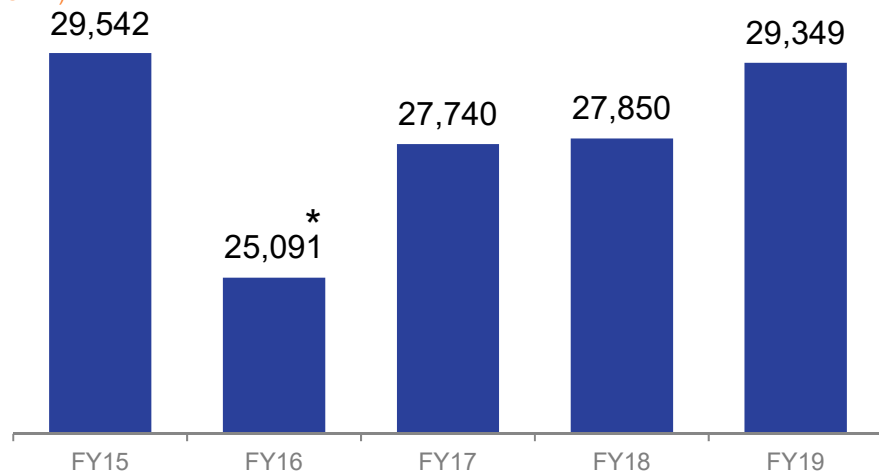


## 2. Financial Profile

# Financial Performance

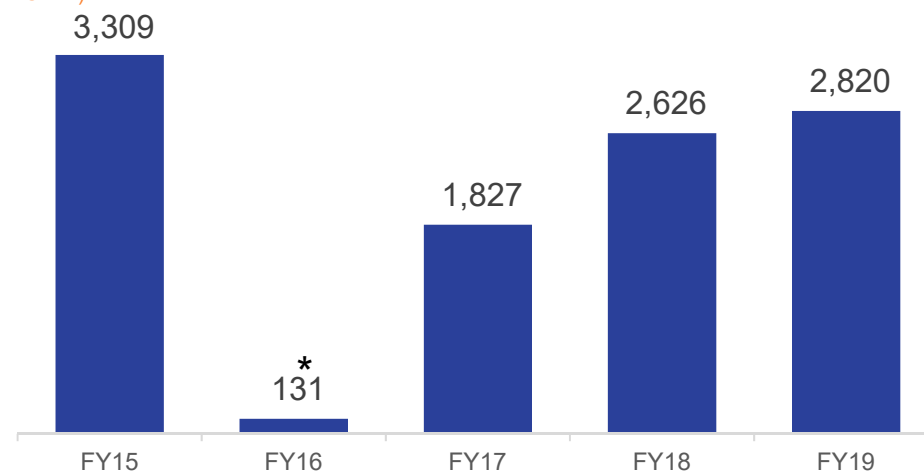
## Turnover

(Rs Crore)



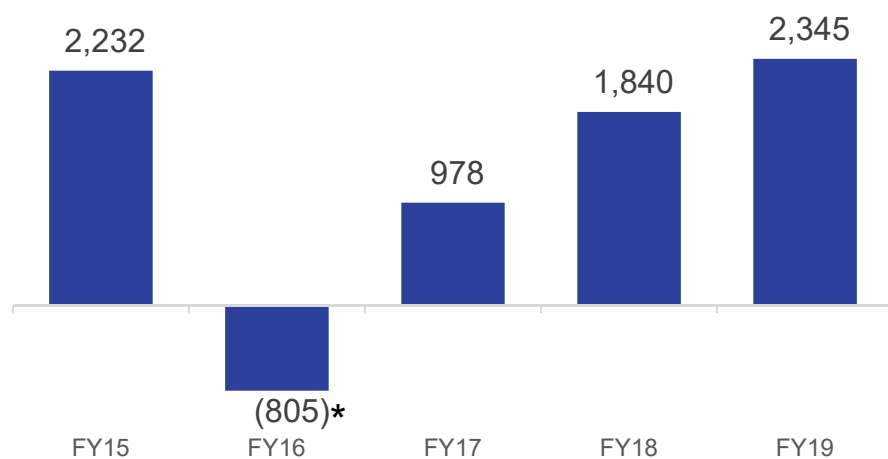
## EBITDA<sup>(1)</sup>

(Rs Crore)



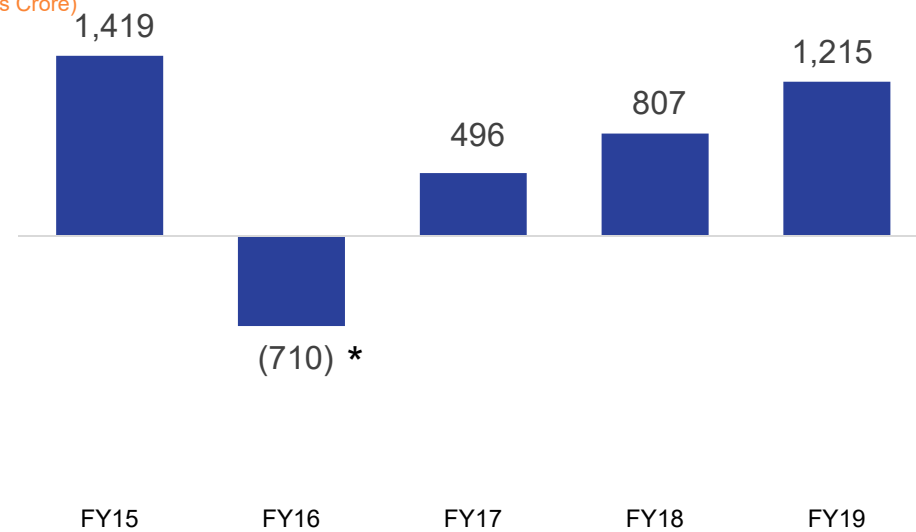
## EBIT (2)

(Rs Crore)



## Profit After Tax

(Rs Crore)



Notes: (1) EBITDA = Earning before charging Interest cost, Tax, Depreciation & Amortization.

(2) EBIT = Earning before charging Interest cost & Tax.

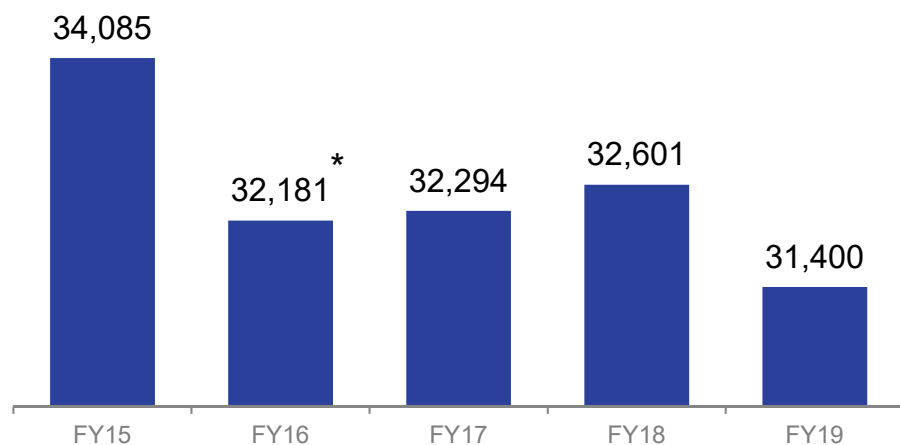
\* FY16 onward data is based on IND-AS



# Strong Balance Sheet

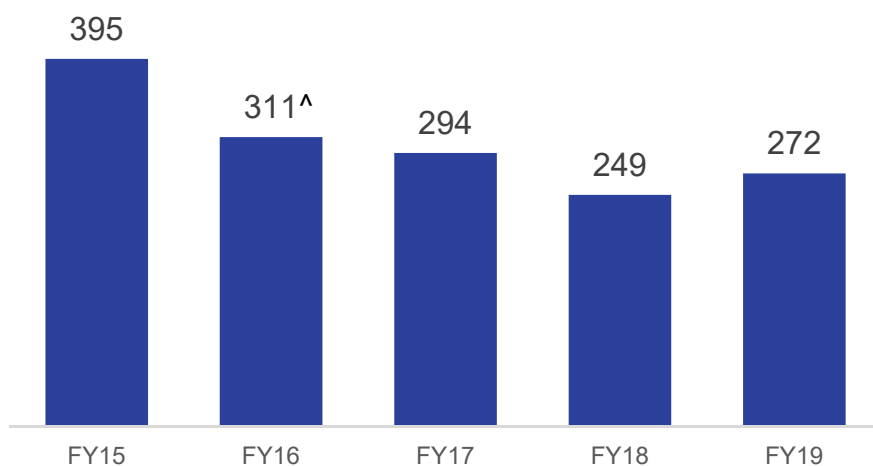
## Total Equity

(Rs Crore)



## Capex

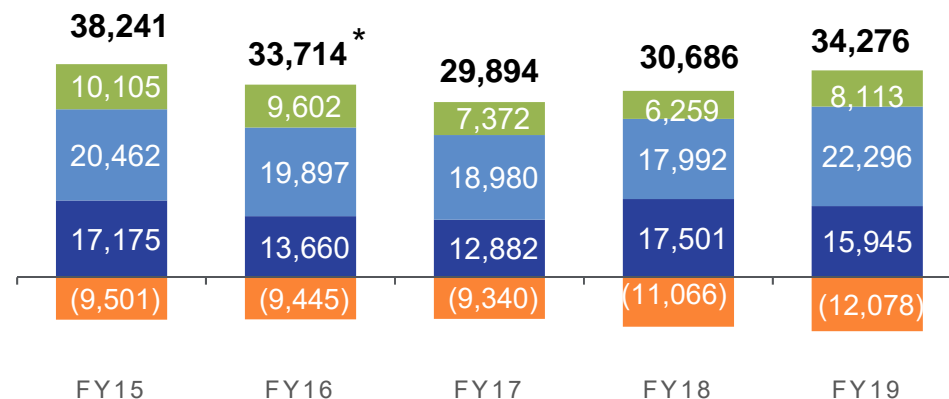
(Rs Crore)



## Working Capital @

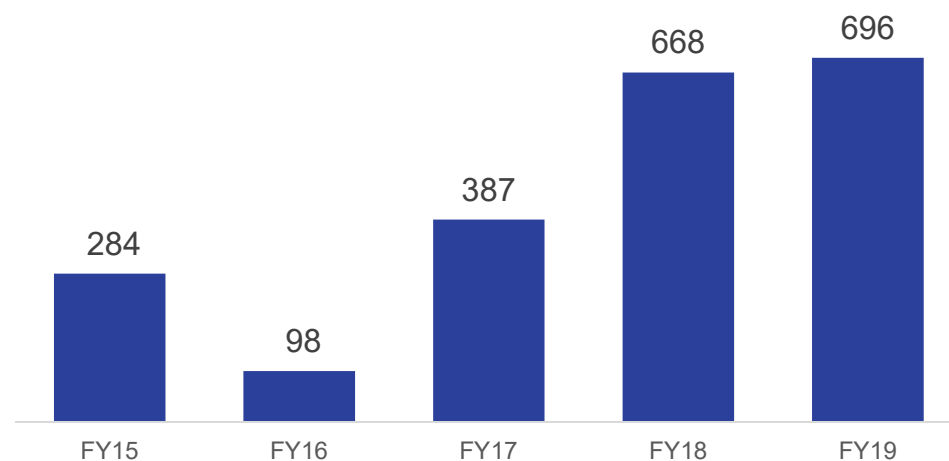
(Rs Crore)

■ Trade Receivables ■ Contract assets ■ Inventories ■ Trade Payables



## Dividend #

(Rs Crore)



\* FY16 onward data is based on IND-AS,

@ Working Capital calculated as Inventories + Trade Receivables+ Contract assets – Trade Payables

^ Excluding Rs. 245 crore of net investment in Subsidiary & Joint Ventures

# Dividend on accrual basis- interim dividend and proposed final dividend for the year

## Financial Performance (2019-20, up to Q3) \*\*

In Rs. crore

	Q1 FY 20	Q2 FY 20	Q3 FY 20
Turnover	4410	6029	5458
PBT	-344	165	226
PAT	-216	119	159
Order inflow	3892	7404	5947

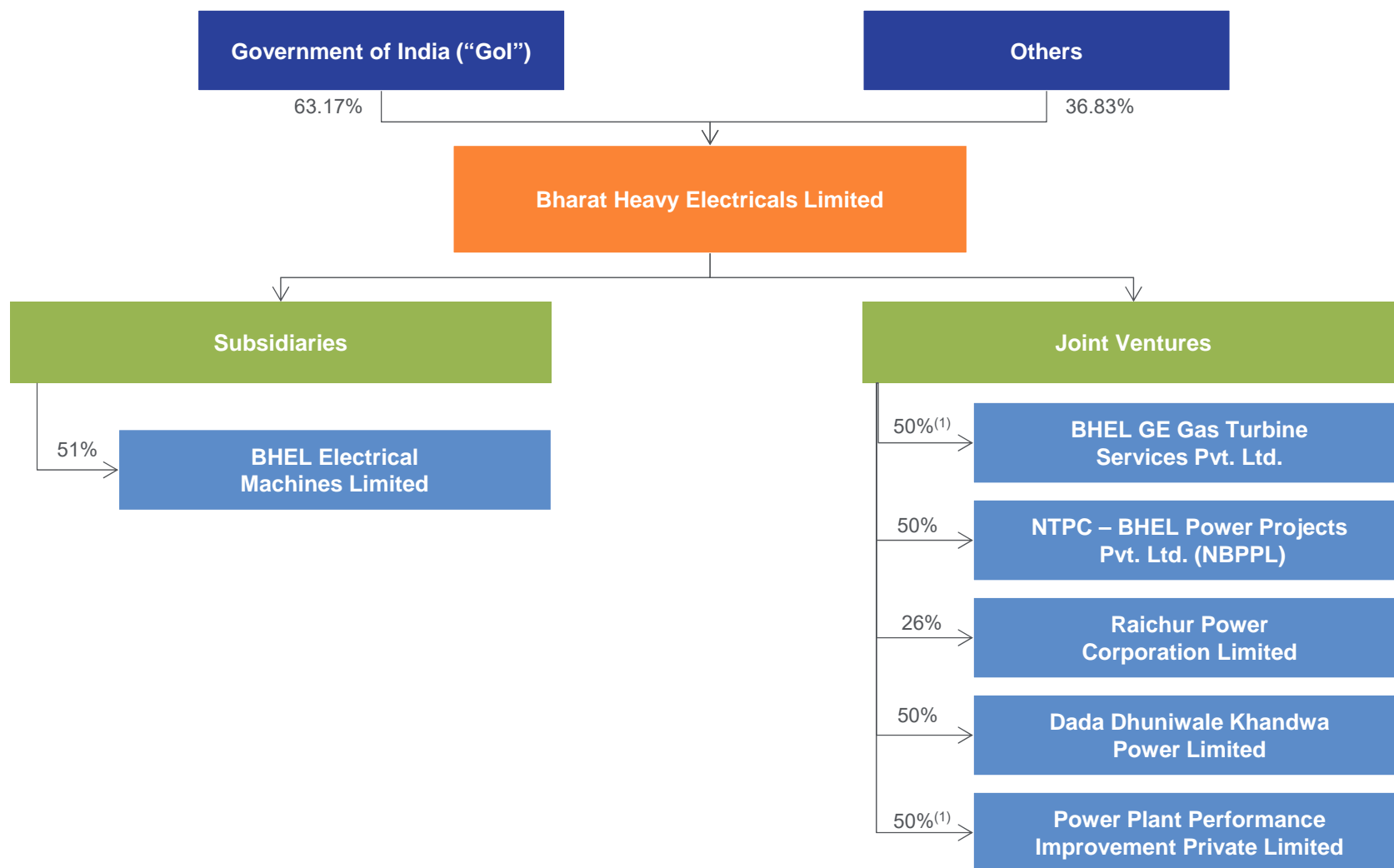
\*\* Standalone unaudited financial result





**Additional Information**

# JVs and Subsidiaries

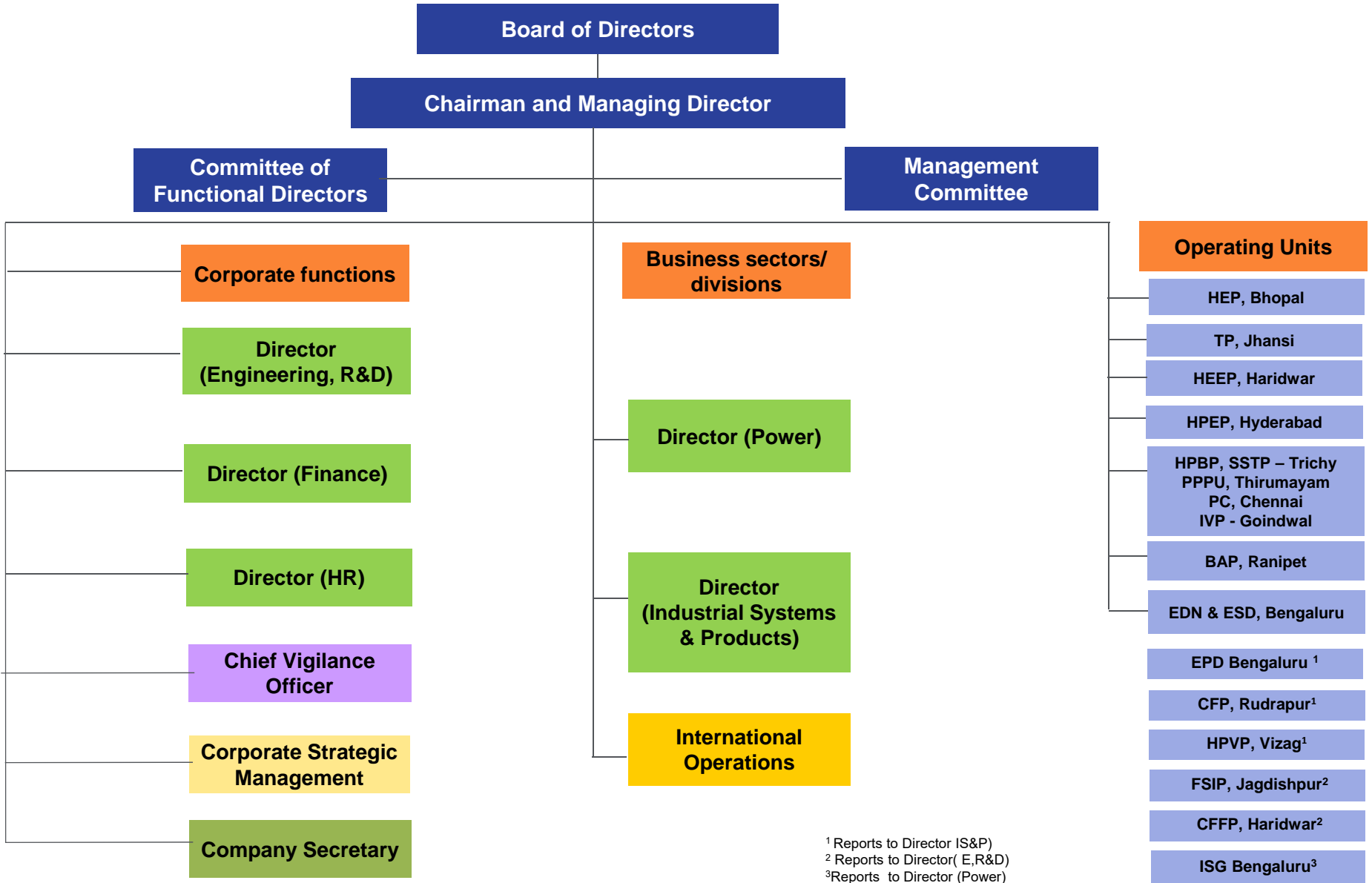


Source: Company data.

Note: (1) One share less than 50%.



# Organization Structure



<sup>1</sup> Reports to Director IS&P  
<sup>2</sup> Reports to Director( E,R&D)  
<sup>3</sup>Reports to Director (Power)



# Glossary

Term	Description
AUSC	Advanced Ultra Supercritical
CPSE	Central Public Sector Enterprises
E&C	Erection & Commissioning
EHV	Extra High Voltage
EM	Electro-Mechanical
EMU	Electric Multiple Unit
EPC	Engineering, Procurement and Construction
ESS	Energy Storage Solutions
ESP	Electrostatic Precipitator
FGD	Flu Gas De-sulphurization
FPI	Foreign Portfolio Investment
GDP	Gross Domestic Product
GIS	Gas-insulated Switchgear
HVDC	High Voltage Direct Current
IGBT	Insulated Gate Bipolar Transistor
IGCAR	Indira Gandhi Centre for Atomic Research
IPMS	Integrated Platform Management Systems

Term	Description
LCA	Light Combat Aircraft
NTPC	National Thermal Power Corporation
OEM	Original Equipment Manufacturer
PCU	Power Control Unit
PS Mkt	Power Sector Marketing
SCR	Selective Catalytic Reduction
SPV	Solar Photovoltaic
TPS	Thermal Power Station
UHV	Ultra High Voltage
UHVAC	Ultra High Voltage Alternating Current