

Information regarding Company and Technology

Name of the Company

Bharat Heavy Electricals Limited (BHEL)

Verticals in which Operating

BHEL business spans around three sectors namely,

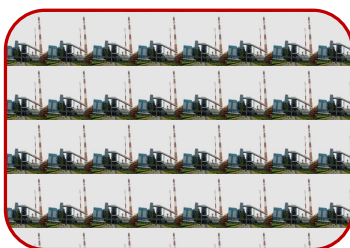
1. Power Sector
2. Industry Sector
3. International Operations

BHEL offers 180 products in 30 major product groups and specialized long term services to the customer. The Present Product / Activity Profile of BHEL is given at Annexure - 1.

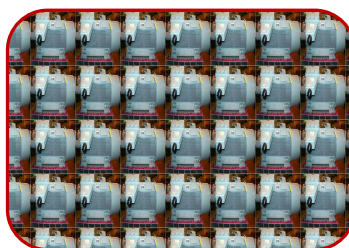
Credentials of the Company

Bharat Heavy Electricals Limited (BHEL), a Maharatna PSU, is the largest engineering and manufacturing Company of its kind in the Country engaged in design, engineering, manufacture, construction, testing, commissioning and servicing of a wide range of power equipment. BHEL caters to the needs of core sectors of the Indian Economy viz. Power Generation and Transmission, Industry, Transportation, Renewable Energy, Defence, etc. BHEL has a wide network of 17 manufacturing divisions/Units, 4 power sector regional centers, 8 service centers, 15 regional offices, 1 subsidiary and a large number of project sites spread all over India and abroad. BHEL has proven turnkey capabilities for executing power projects from concept to commissioning.

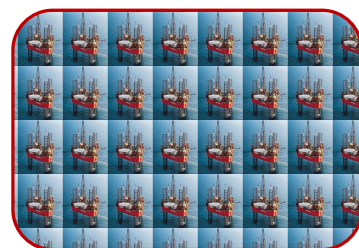
BHEL is a Single Source with Multiple Solutions for Infrastructure & Industrial Sector



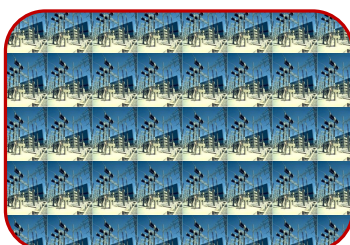
Power



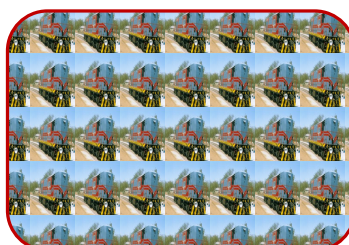
Industry



Oil & Gas



Transmission



Transportation



NCES (Solar)

BHEL ...

- ✚ a Schedule “A” CPSU and the **only “Maharatna” PSU under the Ministry of Heavy Industries and Public Enterprises**, is the largest engineering and manufacturing enterprise of its own kind engaged in the design, engineering, manufacture, construction, testing, commissioning and servicing of a wide range of products and services for the core sectors of the economy viz. Power, Transmission, Industry, Transportation, Renewable Energy, Oil & Gas and Defence.
- ✚ has consistent track record of growth, performance and profitability.
- ✚ recorded all time high turnover of Rs. 50156 Crore during 2012-13
- ✚ manufactures 180 products in 30 major product groups
- ✚ is amongst world’s few who have capability to manufacture entire range of power plant equipment.
- ✚ products have high level of quality and reliability adhering to international standards by acquiring and adopting some of the best technologies from leading companies in the world.
- ✚ has installed Utility sets of 115500 MW across the Globe till 2012-13
- ✚ is a 20000 MW per year Power Plant Equipment manufacturing company
- ✚ has proven turnkey capabilities for executing power projects from concept-to-commissioning of unit sizes up to 1000 MW
- ✚ manufactured Power Plant Equipment contributed 57% of the total power generated in the country during 2012-13.
- ✚ places strong emphasis on innovation and creative development of new technologies. Our Research and Development (R&D) efforts enable us to have a strong customer orientation responding to changes in the market.

Previous Experience in Technology Transfer

BHEL has entered into 73 technological transfer agreements with reputed Power Equipment Giants and other technology providers. Out of which only 12 agreements are currently in vogue reflecting the indigenization efforts put in by BHEL over the years. Many of the collaboration agreements have been allowed to expire on completion of their initial term as BHEL had fully absorbed the technology. Details of our ongoing collaboration agreements are as below:

Details of Ongoing Collaborations

Collaborator	Product
Alstom SA, France	Once Through Boilers and Coal Pulverisers
General Electric Co., U.S.A	Gas Turbines
GE India Industrial Private Limited, India	Water Treatment Equipment
Metso Automation Inc., Finland	New Generation C&I Automation Platform
Mitsubishi Heavy Industries Ltd, Japan	Pumps

Mitsubishi Heavy Industries Ltd, Japan	FGD
Nuovo Pignone, Italy	Centrifugal Compressors
Oto Melara S.p.A., Italy	Super Rapid Gun Mount
Siemens AG, Germany	Steam Turbines, Generators and Lateral/Axial Condensers
Sheffield Forgemasters International Ltd, UK	Forgings
TLT, GmbH, Germany	Fans
Vogt, USA	Natural circulation Waste Heat Recover Boilers
Vogt Power International Inc., USA	HRSG

Details of Technology Offered/ Help Required

BHEL is looking forward for following concessions for capital equipment for electronics industry including solar photovoltaics.

Sl. No	Reference Doc / Policy	Applicable product area in BHEL	Current concessions available	Further assistance required from Govt for Consideration
1	General Exemption No 118 Exemption from “ whole of the duty of customs ” on capital goods imported for use by Electronics/ IT industry	(i) PCB automatic assembly line including Pick & Place machine, soldering, encapsulation, Filling & Drying (ii) Precision solder paste printer, adhesive dispensing machine, conveyor system, re-flow ovens, auto wave soldering machine, PCB loader & insertion conveyor system	Basic Customs duty: Nil	Exemption to be extended to all associated Service equipment for manufacture & testing, if not available indigenously (may be against license)
2	Modified Special Incentive Scheme (M-SIPS) , Department of Electronics & Information Technology	Power semiconductor devices (SCR, MOSFET, IGBT etc) Solar Photovoltaics including Poly silicon, Ingots, wafers, Cells & Cell & Module lines	25% subsidy on CAPEX + Reimbursement of ED/CVD on capital eqpt.	i) Subsidy on Capex to be made available in the following year of capital investment ii) Scheme to be applicable for PV Module line / Solar Cell lines as

				<p>applicable in case of M-SIPS above</p> <p>iii) cheme may be extended to investments in Defence & Space sectors (against specific approval on case to case basis)</p>
3	<p>National Clean Energy Fund (NCEF), Dept. of Finance for funding of Research and Innovative technologies for clean energy</p>	<p>Project / Scheme relating to innovative methods to adapt to Clean energy Technology and Research & Development including (i) Silicon manufacturing (ii) advanced solar technology</p>	<p>Loan / Viability Gap funding not exceeding 40% of total project cost</p>	<p>i) 40% of capital Subsidy through reimbursement in the following year of capital investment for manufacturing facilities</p> <p>ii) Scheme to be applicable for PV Module line / Solar Cell lines</p> <p>iii) To be extended to any investment relating to research in this developing area</p>
4	<p>Export Promotion Capital Goods (EPCG) scheme</p>	<p>Control Equipment / Traction / SC & PV</p>	<p>i) Concessional basic customs duty of 3% on import of capital goods; CVD & SAD fully exempt</p> <p>ii) Export of product for which import of capital goods was effected, , with financial value of 8 times duty saved, to be completed in next 8 years over & above the average export of last 3 years</p>	<p>i) Meeting of Export obligation not to be limited to same product / Unit. Export obligation of the company as a whole to be set-off against the overall export performance</p>

Contact Details

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Present Product / Activity Profile of BHEL

Power Generation & Transmission

- Steam Turbine-Generator Sets & Auxiliaries
- Boiler and Boiler Auxiliaries
- Once-through Boilers
- Bubbling & Circulating Fluidized bed Combustion Boilers
- Nuclear Power Generation Equipment
- Pressure Vessels
- Hydro Turbine-Generator Sets & Auxiliaries
- Gas Turbine-Generator Sets
- Waste Heat Recovery Boilers
- Heat Exchangers
- Axial & Radial Fans
- Condensers, Condensate Extraction Pumps
- Boiler Feed Pumps
- Bowl Mills and Tube Mills
- Tubular/Regenerative Air Pre-Heaters
- Electrostatic Precipitators
- Soot Blowers
- Valves
- Electrical Machines
- Piping Systems
- Power Distribution & Instrument Transformers, Reactors
- Control and Relay Panels
- Reactor Vessels
- Synchronous Condensers
- Automation & Power Electronic Systems
- Switchgears, Controlgears
- Distributed Digital Controls for Power Stations
- Flue Gas Desulphurization (FGD) Systems
- Insulators
- Ceralin
- Castings & Forgings
- Coal / Ash Handling Plant

Industries/Transportation/Oil & Gas/Renewable Energy

- Steam Turbine-Generator Sets
- Gas Turbine-Generator Sets
- Diesel Engine-Based Generators
- Industrial Steam Generators
- Heat Recovery Steam Generators
- Fluidised Bed Combustion Boilers
- Drive Turbines
- Industrial Heat Exchangers
- Centrifugal Compressors
- Industrial Valves
- Reactors
- Columns
- Pressure Vessels

- Pumps
- Industrial Fans
- Seamless Steel Tubes
- AC/DC Motors, Variable-Speed AC Drives
- DDC for Process Industry
- Thyristor Equipment
- Power Devices
- Transformers, Shunt Reactors
- Switchgears including GIS
- SCADA
- Bus Ducts
- Thyristor Valves & Controls for HVDC applications
- Insulators
- Power Capacitors
- Broad Gauge AC, AC/DC Locomotives
- Diesel-Electric Shunting Locomotives
- Traction Motors, Alternators, Transformers & Control Equipment
- Track & OHE Maintenance Machines
- AC/DC Electric Multiple Units
- Drives and Controls for Metro Systems
- Oil Rigs and Oil Field Equipment
- X-Mas Trees and Well Heads
- Cathodic Protection Equipment
- Simulators
- Wind Electric Generators
- Stand-alone and Grid-Interactive Solar Power Plants
- Photovoltaic Systems
- Defence Equipment
- Reverse Osmosis Desalination Plants
- Water Treatment Systems

Systems & Services

- Turnkey Utility Power Stations/EPC Contracts
- Captive Power Plants
- Co-generation Systems
- Combined Cycle Power Plants
- Modernisation & Renovation of Power Stations and RLA Studies
- Switchyards and Substations
- HVDC Transmission Systems
- Shunt & Series Compensation Systems
- Flexible AC Transmission System (FACTS)
- Power System Analysis
- Erection, Commissioning, Operation & Maintenance
- Consultancy Services
- Construction Services
- Material Handling Systems
- Software Packages for Utilities
- SCADA Control & Protection Panel