



About **BHEL**

BHEL is India's largest engineering and manufacturing enterprise, operating in the energy, industry and infrastructure sector. Company was established in the year 1964 and since then it has been "Making in India" offering comprehensive products, systems, and services in various areas including power generation (thermal, hydro, gas, nuclear, and solar PV), transmission, transportation, defense, aerospace, oil and gas, and emerging sectors like battery energy storage systems and electric vehicle chargers.

BHEL has been instrumental in developing the country's power generation capacity, contributing to core industrial and strategic sectors since the time of its humble beginning. The company's commitment toward its customer is evident through wide range of product portfolio, development and absorption of new technologies, consistent investment of more than 2.5% of its revenue on R&D and innovation, establishment of world-class manufacturing facilities and offering sustainable business solutions. Apart from serving customers, BHEL has been supporting communities through programs like skill development, promoting health, hygiene, education, cleanliness and environmental protection, thus contributing to the society as a whole.



Making in India
since
1964 and
supplying products
and services globally



One of India's largest
employers in the
engineering space

29,000+ highly
skilled employees incl.

8,300 engineers



Ranks **one of the
largest in the capital
goods manufacturing**
space in India





16 manufacturing facilities spread across the country producing equipment conforming to international standards



Consistent R&D spend of over **2.5%** of the annual revenue



One of the few companies in the world having the **capability to design and manufacture equipment for entire range of power plants** – nuclear, hydro, thermal & gas, with proven capabilities to execute large size projects



4 regional offices, **8** service centres and **15** regional marketing centres



80+ technology collaborations undertaken with several global OEMs over the years



140+ ongoing projects in different parts of India & abroad



Shaping innovation capabilities & technology- with **dedicated R&D** centre in Hyderabad, 14 Centres of Excellence & 5 research centres



References in **88** countries in all six inhabited continents



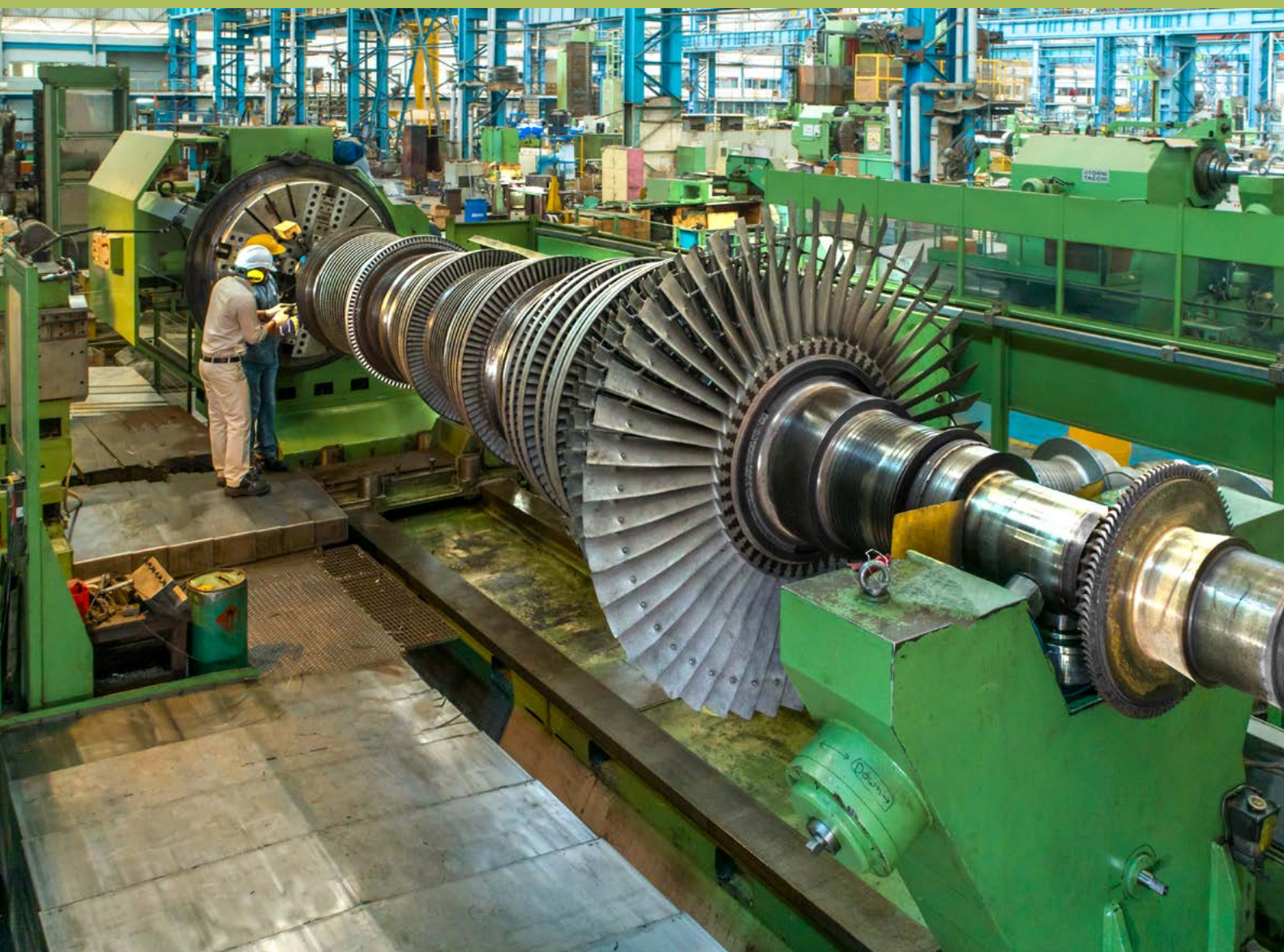
State-of-the-art facilities specializing in engineering, manufacturing, testing, aftermarket services for equipment in the core infrastructure sectors - Power, Railways, Industrial Systems & Products, Defence & Aerospace



Power Sector

BHEL is one of the few companies in the world having the capability to manufacture the equipment for entire range of power plants - thermal, gas, hydro and nuclear, with proven capabilities to execute large size projects. BHEL's offering include:

- Steam turbines, generators, boilers and matching auxiliaries for fossil-fuel applications upto 1000 MW unit size
- Emission control equipment including Flue Gas Desulphurisation systems for SO_x emission control, high efficiency Electrostatic Precipitators for particulate emission control, and Boiler modification and Selective Catalytic Reduction systems for NO_x emission control
- Gas turbines and generators upto 299 MW unit size
- Hydro turbines and generators up to 400 MW unit size
- 220/235/500/540/700 MWe nuclear turbine generator sets
- Plant performance improvement through renovation, modernization, flexibilization, uprating, residual life assessment, health diagnostics and life extension of plants



Industry Sector

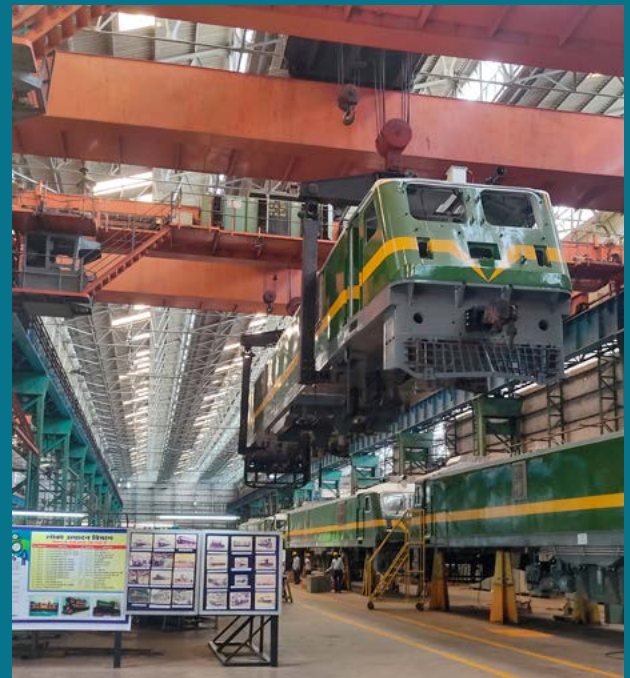
BHEL's major offerings for industry and infrastructure sectors include:

- **Transportation:** Semi high speed (Vande Bharat) trainsets, electric locomotives upto 9000 HP, diesel electric locos upto 3000 HP, EMU coaches, IGBT based propulsion equipment (traction converter/auxiliary converter/ vehicle control unit), traction transformers for electric Locos & ACEMUs/ MEMUs
- **Defence & Aerospace:** Strategic equipment for Indian defence forces including Super Rapid Gun Mount (SRGM), upgraded SRGM, Integrated Platform Management System for naval ships, compact heat exchangers, space grade Lithium ion cells, space grade solar panels and space grade batteries etc, hot forming of spacecraft propellant tank, forming of Titanium Shell/ Domes, welding & machining of Titanium sheet and tubes, rotary main motor generators
- **Renewables:** EPC solutions from concept to commissioning for grid connected, standalone solar PV applications including floating solar power plants and Mono-PERC Solar PV Modules up to 400 Wp
- **Energy Storage Solutions & new business areas:** EV Chargers and associated electrical system, EPC solutions for Electric vehicle charging station with upstream electrical system;
- **Captive Power & Process Plant - Standalone STGs, BTG package, Refinery CPP on EPC basis, AFBC and CFBC boilers, UB package, Downstream Oil & Gas packages on EPC basis**

BHEL's success over the years is driven by its skilled and motivated workforce of over 29,000 employees coupled with physical assets spread across India that include a network of 16 manufacturing facilities, 2 repair units, 4 regional offices, 8 service centres, 3 active joint ventures, 15 regional marketing centres, 1 overseas office and current project execution at more than 140 project sites across India and abroad. The manufacturing facilities churn out a wide range of high quality & reliable products adhering to national and international standards.

BHEL has a strong presence in various sectors of the Indian capital goods industry, including Power Generating equipment for the utilities. The worldwide installed base of power generating equipment supplied by BHEL is 197 GW, making it the undisputed leader amongst Indian power plant equipment manufacturers. Besides, the company has supplied 800+ locomotives and other traction equipment for locomotives & EMUs; commissioned 240+ electric substations and 6 major HVDC projects in the country, becoming the largest manufacturer and supplier of power transformers and electrical AC machines in the country, and

- **Transmission:** EHV substations (AIS and GIS types) ranging upto 765 kV, UHV substations and HVDC converter stations up to ± 800 kV, power transformers, shunt reactors, vacuum switchgear, gas insulated switchgears, Flexible AC Transmission system devices, composite insulators for upto 765 kV application etc.
- **Industrial Products:** Oil rigs, wellheads & X-mas tree valves, mechanical packages, fabricated equipment & boiler feed pumps, compressors & AC machines



installed & commissioned 1.2+ GW solar portfolio spread across the country.

BHEL has a widespread footprint in all the inhabited continents of the world with references in 88 countries including the neighbouring countries of Bangladesh, Afghanistan, Bhutan, and Nepal, Indonesia, Oman, Iraq, Sudan, Afghanistan, United States and New Zealand. Around 12 GW power generating capacity has been installed in overseas markets and additional 5 GW is under execution, including 2x660 MW Maitree Super Thermal Power Project in Bangladesh and 4x225 MW Arun-3 Hydroelectric Project in Nepal.

In certain strategic sectors, BHEL holds a crucial position as the sole Indian supplier of technology-intensive products and systems. It is the only manufacturer of nuclear steam turbines in the country and has been involved in all three stages of India's Nuclear Power program. Furthermore, BHEL has been a major supplier of critical equipment and services in the defense and aerospace sector for over three decades and is a trusted supplier of naval guns to the Indian Navy for their warships.



PAN INDIA PRESENCE



Manufacturing Plants/ Unit Locations

BHEL Manufacturing Units

Bengaluru	1. Electronics Division (EDN)
	2. Electronics Systems Division (ESD)
	3. Solar Business Division (SBD)
Bhopal	4. Heavy Electrical Plant (HEP)
Goindwal	5. Industrial Valves Plant (IVP)
Haridwar	6. Heavy Electrical Equipment Plant (HEEP)
	7. Central Foundry Forge Plant (CFFP)
Hyderabad	8. Heavy Power Equipment Plant (HPEP)
Jagdishpur	9. Fabrication Stamping & Insulator Plant (FSIP)
Jhansi	10. Transformer Plant (TP)
Rudrapur	11. Component Fabrication Plant (CFP)
Ranipet	12. Boiler Auxliaries Plant (BAP)
Tiruchirappalli	13. High Pressure Boiler Plant (HPBP)
	14. Seamless Steel Tube Plant (SSTP)
Thirumayam	15. Power Plant Piping Unit (PPPU)
Visakhapatnam	16. Heavy Plates & Vessels Plant (HPVP)
BHEL Repair Units	1. Electrical Machine Repair Plant (EMRP)
	2. Heavy Equipment Repair Plant (HERP)

INDIA





Vision

A global engineering enterprise providing solutions for a better tomorrow



The World of BHEL



Mission

Providing sustainable business solutions in the fields of Energy, Industry & Infrastructure



A National Institution

- One of the largest engineering & manufacturing companies in India serving core sectors of the economy
- Pan India presence with 16 Manufacturing Units and 140+ project sites (including overseas)

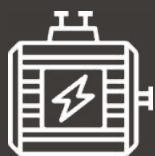
Did you know?

- BHEL is the only company associated with all three stages of Indian Nuclear Power Programme
- BHEL dispatched its 44th Nuclear Steam Generator for Rawatbhata Nuclear Power Plant from its Trichy manufacturing unit
- BHEL has been the pioneer in the Coal Gasification Technology in the country since 1990
- BHEL has designed & developed 2 kW Air Cycle Machine (ACM) based Liquid Cooling System (LCS) for Light Combat Aircraft – Tejas Mk1
- BHEL has successfully indigenized Ceramic Pouring Tube for the manufacturing process of cast steel wheels at Rail Wheel Factory, Yelahanka and Bela
- BHEL will be sole supplier of Li-ion batteries for next generation aircraft



Energizing India

- 197 GW power generating equipment installed (including overseas)
- 18.8 GW Captive Power Plants commissioned
- 1.2+ GW Solar portfolio
- BHEL supplied 55% of the Thermal Power generation capacity, 48% of the Nuclear Power generation capacity (secondary side) and 44% of the Hydro Power generation capacity installed in the country



Unparalleled contribution in core sectors

- 7,30,000+ MVA Transmission Equipment supplied
- 33,500+ AC Machines supplied
- 800+ Locos supplied to Indian Railways
- 415+ Compressors supplied and 90 Oil drilling Rigs supplied
- 13500+ Well Heads & Christmas Tree valves supplied
- 40+ Super Rapid Gun Mount (main gun) supplied for Indian Navy ships



Valuing people

- Committed workforce, more than 29,000+ employees
- 8,300+ Engineers
- Participative management culture since 1973



Global Footprints

- Footprints in 88 countries
- 12 GW Power generation capacity built outside India; 5 GW under installation



Technology for a sustainable future

- Successfully executed India's first flexible operation at M/s Adani REGL (1x600 MW) unit for integration of renewable power to grid - developed in-house by BHEL
- Successfully established methanol firing system as an alternative to Light Diesel Oil and Heavy Fuel Oil in Thermal Power Plants
- Commissioned the largest floating solar power plant of India with 100 MW capacity at NTPC Ramagundam in Telangana
- Carbon footprint avoidance of nearly 26,964 MT of CO₂-equivalent through in-house ~35 MWp solar power installations
- Import substitution of oil extraction product Sucker Rod Pumping (SRP) through in-house design & development
- 10 manufacturing units are now 'Zero Liquid Discharge' entities



Growing with society

- Committed to Principles of UN Global Compact
- Signatory to Integrity Pact of Transparency International
- 49,200 saplings planted across BHEL during FY 2022-23 to enhance green cover



Innovation

- R&D Expenditure consistently more than 2.5% of Turnover, 5,400+ IP equity
- Collaborative R&D with leading academic institutions & research organizations
- 5 Research Institutes; 14 Centres of Excellence
- In-house R&D Centres of 12 Manufacturing Units & Divisions recognized by DSIR

Recognition of Excellence



1. CMD, BHEL conferred with ICC PSE Excellence Award for 'CEO of the Year' for transformational leadership



2. CMD conferred with 'Governance Now CMD Leadership Award 2022' for putting in place multidimensional transformational strategies.
3. CMD, BHEL has been conferred with Outstanding Contribution to National Development, IIT Delhi Alumni Award.
4. 20 teams won Par Excellence award (highest category), 13 teams won Excellence award and 1 team won Distinguished award during 36th National Convention on Quality Concepts (NCQC) – 2022, organised by Quality Circle Forum of India, Aurangabad Chapter.

5. Ms. Renuka Gera, Director (IS&P), BHEL, was conferred with the prestigious 'CIGRE Women in Energy Award' at the CIGRE, Paris Session in France.

6. Ms. Sireesha Baile of Corporate R&D, Hyderabad received the coveted 'Young Engineer of the Year Award 2022' from Govt. of Telangana and Institution of Engineers (India), Telangana State Centre for her achievements in technological innovations.

7. 'Governance Now PSU awards 2022' in various categories – Best PSU award in Research & Innovation, HR Excellence, Increase in Geo-Strategic Reach, Digital Security and Use of Emerging Technologies: IoT/IIoT.



8. BHEL conferred with National Intellectual Property Awards 2021 & 2022 in the category of 'Top Public Limited Company/Private Limited Company for Patents Filing, Grant & Commercialization' in India in the Manufacturing Sector' by Office of Controller General of Patents, Designs & Trade Marks under, DPIIT, Ministry of Commerce & Industry.
9. BHEL recognised as one of the Top 50 Innovative Companies in India and awarded 'CII's Industrial Innovation Award 2022'.



10. BHEL received CII-Exim Bank's first-ever Special Jury Commendation for Adoption and Nurturance of Business Excellence. The company's Trichy, Haridwar, Bhopal and Hyderabad units have received the Platinum recognition while Project Engineering Management Group, Electronics Division - Bengaluru, Power Sector – Northern Region and Ranipet Division have been awarded the 'Gold Plus' recognition.

11. BHEL won CBIP Award 2022 for Best Contribution in Solar Energy. The Award was received by CMD, BHEL, along with Ms. Renuka Gera, Director (IS&P), BHEL from Shri R K Singh, Hon'ble Union Minister of Power and New & Renewable Energy.

12. BHEL was awarded for the 'Highest procurement in number of orders on GeM in FY 2021-22'.

13. BHEL was conferred with the Best Performing CPSE in e-procurement award at the National Workshop for Electronic Procurement under the aegis of Ministry of Finance, Department of Expenditure along-with National Informatics Center, Ministry of Electronics & Information Technology.



14. BHEL bagged 8 Gold Awards at the International Convention on Quality Circles 2022 held at Jakarta Indonesia by IQMA (Indonesia Quality Management Association). More than 20 Countries participated in the International event. The prestigious awards were conferred on the teams for bringing new thinking, simplifying work, bringing quality and developing new tools & techniques in their field of work.



15. BHEL's HPEP Hyderabad Unit conferred with Best Organisation Award for supporting Quality Circle Movement in the Country and contributing to its growth by Quality Circle Forum of India (QCFI), Hyderabad during Annual Chapter convention on Quality Circles (CCQC-2022).

16. BHEL received Renewable Energy India Awards – 2022 in the category of Leading EPC-Solar at Renewable Energy India Expo.



17. BHEL received ICC PSE Excellence Award for 'Contribution of Women and Differently-abled' in the Maharatna CPSE category.

18. BHEL received the prestigious North India Best Employer Brand Award 2022 for demonstrating exemplary HR practices and effectively cultivating HR competencies to enable the organization to be future-ready by World HRD Congress.



19. BHEL received Golden Peacock Environment Management Award 2022 under the category 'Power Equipment Sector'.

20. The prestigious award for Star Performer for 2018-19 in the product group: Project Exports - Large Enterprise' at the 51st EEPC India National Awards.

21. BHEL received Golden Peacock Award 2022 in the Power Equipment Sector for its inclusive CSR program - 'Motivating AgRarian communities of Kandhamal for Economic Transformation (MARKET)' in the Kandhamal district of Odisha.



22. BHEL conferred with the Apex India HR Excellence Platinum Award 2022 for innovative HR practices and Apex India Occupational Health & Safety Gold Award 2022 for its sterling track record in safety in Engineering Sector.



23. BHEL received ICC Social Impact Awards 2023 in Healthcare for CSR Project - 'Lifeline Express-Hospital on train' at Panki-Dham, Kanpur.

24. BHEL recognized as the 'Most Preferred Workplace in Manufacturing 2022-23' by Team Marksmen for maximising employee happiness and productivity along with organisational performance.



25. BHEL conferred with a Memento on World Hemophillia Day by Hemophillia Federation India for its valuable support and making the life of the persons with Hemophillia better through CSR Project 'Heal A Soul-IV'.

26. BHEL honoured by Rail Analysis India at the 4th Rail Analysis Innovation & Excellence Summit 2023 for exemplary achievement in 'Sustainable and Energy Efficient Solutions for Rail sector'.

27. Mr. Bijaya Kumar Das completed the gruelling 'IRONMAN' long-distance triathlon race, held in Astana, Kazakhstan. It is one of the most difficult one-day sporting events in the world.

CAPACITY BUILDING FOR THE NATION

BHEL has taken a significant step towards enhancing the competitiveness of the Indian capital goods sector by establishing the "Common Engineering Facility Centre" (CEFC) at its Welding Research Institute (WRI) in Trichy. This initiative is supported by a grant from the Ministry of Heavy Industries (MHI) under the "Enhancement of Competitiveness in Indian Capital Goods Sector Scheme, Phase-II."

The CEFC, with a target capacity to skill 5,000 welders annually, offers comprehensive training in various welding technologies. These include Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Gas Tungsten Arc Welding (GTAW), as well as advanced welding technologies such as Robotic Welding, Laser Welding, Friction Welding and Dissimilar Metal Welding. The training programs not only cover theoretical aspects but also provide hands-on skills to the participants.

Operating under the hub and spoke model, the CEFC has WRI-Trichy as the hub and extension centers located at Varanasi, Bhopal, Jhansi, Haridwar, and Ranipet as the spokes. This model enables the CEFC to reach a larger population across India, ensuring that skilling opportunities are available nationwide. As a result, a pool of trained welders is being created throughout the

