

About BHEL

BHEL is India's largest engineering and manufacturing enterprise in the energy and infrastructure sector. Established in 1964, we are a leading power equipment manufacturer globally and one of the earliest and leading contributors towards building an Aatmanirbhar Bharat. We serve our customers with a comprehensive portfolio of products, systems and services in the areas of power-thermal, hydro, gas, nuclear & solar PV; transmission; transportation; defence & aerospace; oil & gas and new areas like BESS and EV chargers.

Right from developing country's power generation capacity to creating multiple capabilities in country's core industrial & strategic sectors, BHEL is deeply aligned to the vision of a self-reliant India. Consistent expenditure of more than 2.5% of its turnover on R&D and innovation; establishment of world-class manufacturing assets, development and absorption of new technologies; and creating sustainable business solutions and initiatives in skilling youth, promoting health & hygiene, education, cleanliness and environment protection, stand as a testimony to our commitment to contribute not just to our business interests, but also to society at large. A skilful and motivated workforce, currently more than 30,000 strong, is the driving force behind our journey over the years



Forging at CFFP Haridwar



Company's pan-India presence includes a network of 16 manufacturing facilities, 2 repair units, 4 regional offices, 8 service centres, 3 active joint ventures, 15 regional marketing centres, 3 overseas offices and current project execution at more than 150 project sites across India and abroad. BHEL manufactures a wide range of high quality & reliable products adhering to national and international standards.

The worldwide installed base of power generating equipment supplied by BHEL exceeds 194 GW, making it the undisputed leader amongst Indian power plant equipment manufacturers. Having installed more than 1000 thermal, hydro, nuclear, gas and solar PV based power generating sets in the country, the company is actively engaged in building strong foundations for cleaner and greener energy generation and usage in future with critical technologies coal to methanol.

BHEL is a name to reckon with in various sectors of Indian capital goods industry. This is evident from supply of traction equipment for significant number of locomotives & EMUs of Indian Railways; commissioning of 225+ electric substations and 6 major HVDC projects in the country; being the largest manufacturer and supplier of power transformers and electrical AC machines in the country, and 1.2GW+ solar portfolio spread across the country.

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. Offerings 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 SOx emission control, high efficiency Electrostatic Precipitators for particulate emission control, and Boiler modification and Selective Catalytic Reduction systems for NOx 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, uprating, residual life assessment, health diagnostics and life extension of plants

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. Till date, around 11 GW power generating capacity has been installed in overseas markets. An additional 6 GW is under execution, including the 2x660 MW Maitree Super thermal power project in Bangladesh and 4x225 MW Arun-3 Hydroelectric project in Nepal.

BHEL plays a crucial role in the strategic sectors of the nation, being the sole Indian supplier for many technology intensive products and systems. BHEL is the only supplier of nuclear steam turbines in the country; the only company associated with all three stages of India's Nuclear Power programme; a major supplier of critical equipment and services in defence & aerospace sector for over three decades; and a trusted supplier of naval guns to Indian navy for their warships.

5 X 800 MW Yadadri Super Thermal Power Station
under commissioning by BHEL in Telangana

INDUSTRY SECTOR

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

- **Transportation:** IGBT based propulsion equipment (traction converter/auxiliary converter/Vehicle Control Unit), traction transformers for electric Locos and ACEMUs/MEMUs, EMU coaches, electric locomotives upto 6000 HP and diesel electric locos upto 3000 HP, electrics upto 9000 HP for locomotives
- **Defence & Aerospace:** Strategic equipment for Indian defence forces including Super Rapid Gun Mount & 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
- **Renewables:** EPC solutions from concept to commissioning for grid connected and standalone solar PV applications including floating solar power plants
- **Energy storage solutions & new business areas:** EV Chargers and associated electrical system, EPC solutions for Electric vehicle charging station including Solar Based EV Charging stations and battery energy storage systems
- **Captive Power & process plant:** standalone STGs, BTG package, Refinery CPP on EPC basis, UB package, Downstream oil & gas packages.
- **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 etc.
- **Industrial products:** Oil rigs, wellheads & X-mas tree valves, mechanical packages, fabricated equipment & boiler feed pumps, compressors & AC machines.



Loco Shop at BHEL Jhansi

Making the sun count!



BHEL is one of the few companies in India providing end-to-end in-house solutions for solar power plants. Company's solar portfolio has expanded to more than 1200 MW with more than 1000 MW solar power plants already commissioned across the country. Company offers solution for ground mounted, roof top, canal top and floating solar PV plants.

BHEL has established itself as leading EPC player in the floating solar PV segment of domestic market. Several large scale floating solar power plants including 100MW NTPC Ramagundam - largest in the country), 25 MW NTPC Simhadri and 22 MW NTPC Kayamkulam commissioned by BHEL during the year.

With an experience of 150+ MW capacity of floating solar power plants commissioned, BHEL has uniquely positioned itself to deliver plants on all kinds of water bodies like natural reservoirs, man-made reservoirs and saline back-water kayals.

100 MW Floating Solar PV Plant at NTPC, Ramagundam

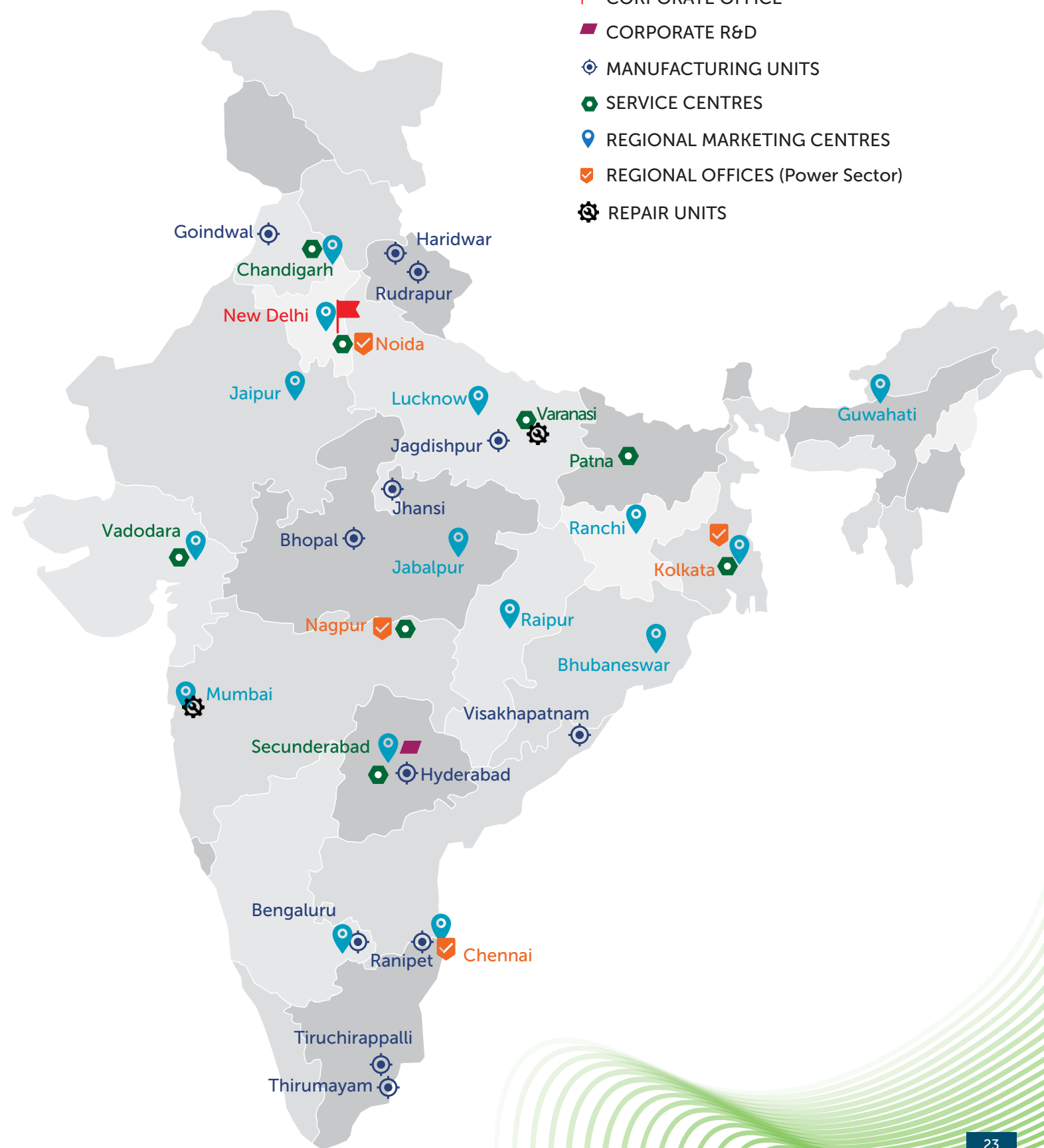
PAN INDIA PRESENCE



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	Mumbai	1. Electrical Machine Repair Plant (EMRP)
	Varanasi	2. Heavy Equipment Repair Plant (HERP)

-  CORPORATE OFFICE
-  CORPORATE R&D
-  MANUFACTURING UNITS
-  SERVICE CENTRES
-  REGIONAL MARKETING CENTRES
-  REGIONAL OFFICES (Power Sector)
-  REPAIR UNITS



World of **BHEL**

VISION

A global engineering enterprise providing solutions for a better tomorrow

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 150+ project sites globally

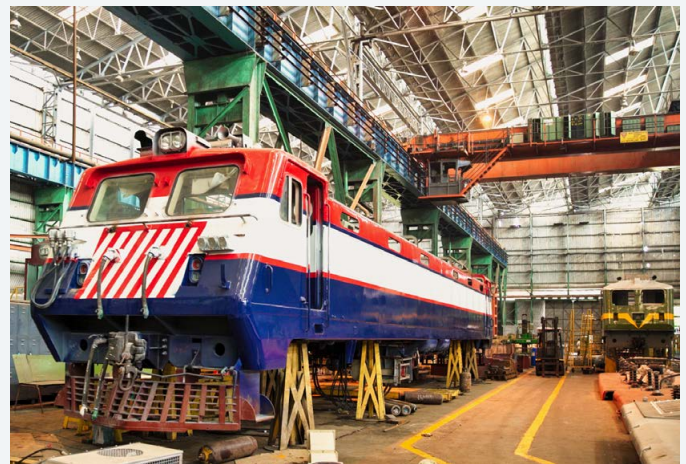


Energizing India

- 194+ GW power generating equipment installed in India and abroad
- 18,500+ MW Captive Power Plants commissioned
- 1.2+ GW total solar portfolio
- BHEL supplied 54% of the thermal power generation capacity, 47% of the nuclear power generation capacity (secondary side) and 45% of the hydro power generation capacity installed in the country as on 31.03.2022

Unparalleled contribution in core sectors

- 7,00,000+ MVA transmission equipment supplied
- 33,000+ AC machines supplied
- 800+ Locos supplied to Indian Railways
- 410+ Compressors supplied and 90 Oil drilling Rigs- Supplied
- 13000+ Well Heads & Christmas Tree valves supplied
- 40+ Super Rapid Gun Mount supplied for Indian Navy ships



Global Footprints

- Footprints in 88 countries
- 11 GW power generation capacity built outside India; 6 GW under execution
- Entry into new markets – Brunei Darussalam and Mexico

DID YOU KNOW?

- BHEL is the only company associated with all three stages of national Nuclear plan
- BHEL dispatched its 42nd Nuclear Steam Generator for Rawatbhata Nuclear Power Plant from its Trichy manufacturing unit
- BHEL has been a pioneer in the coal gasification technology in the country since the 1990s
- BHEL has developed and supplied Air to Air Heat Exchanger (AAHE) for Su-30MKI aircraft
- BHEL has indigenously designed and developed a prototype Air Pollution Control Tower (APCT) and the same has been installed in Noida city on pilot basis



Valuing people

- Committed workforce, more than 30,000+ strong
- 1800+ Female employees
- 9000+ Engineers
- Participative management culture since 1973



Technology for a sustainable future

- Demonstrated 0.25 TPD coal to methanol plant using indigenous coal gasification technology
- Spearheading the development, installation and indigenisation of emission control equipment for coal based power plants in India
- Carbon footprint avoidance of nearly 25,235 MT of CO₂-equivalent through in-house 29 MWp solar power installations
- Developed 122 kW DC fast charger for Electric Vehicles
- 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
- 68,000 saplings planted across BHEL during 2021-22 to enhance green cover



Innovation

- R&D Expenditure consistently more than 2.5% of Turnover, 5200+ IP equity
- Collaborative R&D with leading academic institutions & research organizations
- Five research institutes; 14 Centres of Excellence
- In-house R&D Centres of 12 Manufacturing units & Divisions recognized by DSIR

Recognition of Excellence

1. **18 employees from BHEL have been conferred 11 prestigious Prime Minister's Shram Awards (PMSA) for 2018** declared by Ministry of Labour & Employment, Government of India. This is the highest ever by BHEL's workmen from the date of incorporation (1985) of PMSA. BHEL has garnered 65% of the awards for the Public Sectors.
2. **25 Employees of the company won 7 Vishwakarma Rastriya Puraskar (VRP) (Performance year- 2018)** declared by Ministry of Labour & Employment, Gov. Three Manufacturing Units of the Company (EDN-Bengaluru, IP-Jagdishpur, HPBP-Trichy) won 8 nos. 'National safety Awards' (Performance year 2018) announced by DGFASLI (Ministry of Labour & Employment, Govt).
3. **BHEL received the Golden Peacock Innovative Product/ Service Award 2021** under the Power Equipment Sector for Development of Regenerative Braking System for WAG-7 Electric Locomotive
4. **BHEL received the Golden Peacock Environment Management Award** for the year 2021 in the Power Equipment Sector
5. **BHEL adjudged Clarivate South and South East Asia Innovation Award 2021** under Corporations in India - Heavy Industries segment, recognising BHEL's efforts as a leader in Innovation and placing the company among top innovators in India.
6. **The prestigious 'EEPC India Northern Region Award'** for Engineering Export Excellence in the category of Top

Exporter for the year 2017-18 - "Top exporters for the year 2017-18, Silver Trophy - Large Enterprise"

7. **BHEL has been placed among the top 25 best workplaces in the '2021 top companies list',** to grow your career in India, by LinkedIn.
8. **BHEL has been selected amongst the top 200 Sustainable Companies.** The company has been ranked 109 in India's Most Sustainable Companies by Business World.
9. **BHEL has won ICC PSE Excellence Awards 2021** for the category 'Contribution of Women Power in CPSEs'.



6.

10. **BHEL received SKOCH Order of Merit Awards** for the following projects:
 - State-of-the-Art Technology Deployment in Indigenous Development of Hot Box for ACC Equipped Power Plants
 - Technology Deployment for Learning & Development
 - Pressure Vacuum Swing Adsorption (PVSA) based Medical Oxygen plant
11. **BHEL has achieved a major milestone in its journey of business excellence with four of its major units (Haridwar, Bhopal, Hyderabad & Trichy) winning accolades under the 'CII-EXIM Bank Award for Business Excellence 2021'.**



11.



14.

The company's Haridwar and Bhopal Units have got the 'Platinum recognition award', Trichy and Hyderabad units have been awarded the 'Gold Plus recognition'- The Award is based on the internationally recognized European Foundation for Quality Management (EFQM) excellence model

12. **'Par Excellence Award'** to eight Quality Circle (QC) teams and 'Excellence award' to one QC team in the '46th International Convention on Quality Control Circles – 2021 (ICQCC-2021)' held at Hyderabad.
13. **BHEL received the Chennai Port Trust's 'Best Performance Award' -2020-21** in the Project Export (Break Bulk) category
14. **BHEL was conferred by the Institute of Chartered Accountants of India "ICAI Award for excellence in**

Financial reporting" for the financial year 2020-21 and honoured with the prestigious plaque in the category of Infrastructure and construction sector. BHEL has achieved this coveted recognition for the second year in succession (which was received last year for the first time after a gap of nearly four decades) in recognition of excellence of preparation and presentation of qualitative financial statements

On behalf of BHEL the award was received by Sh. Subodh Gupta, Director[Finance] from Dr. Jitendra Singh, Hon'ble Minister of State (IC) for Science & Technology, Earth Sciences; Minister of State for Prime Minister's Office; Personnel, Public grievances and Pensions, Department of Atomic Energy and Department of Space in the presence of eminent Guests of Honour, Chief Executives of various organisations and other dignitaries.



2.



5.



15. **CMD, BHEL conferred with CEO with HR Orientation award by World HRD Congress** for his efforts at transformation of BHEL into a future ready Global Engineering Organisation through a multidimensional strategy including review and revamp of the entire HR paradigm in the company and ensuring alignment of stakeholder interests with the interests of the organisation.

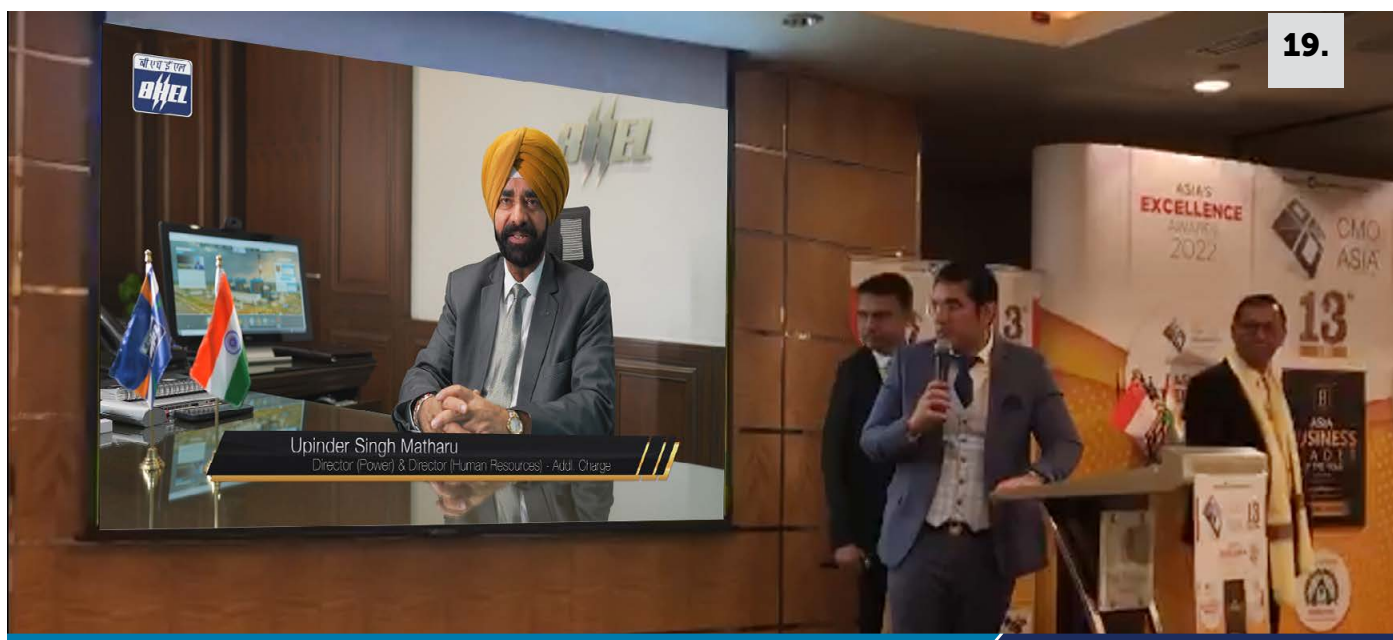


16. **BHEL has been conferred with Business Innovation Awards 2021** for the categories Organization with Innovative Practices in HR & Best Digital PSU.

17. **BHEL has been conferred with Global HR Excellence Award** for the categories Best Work Place practices, Excellence in Learning & Development.

18. **Director (IS&P), Ms. Renuka Gera was conferred with CIGRE Women in Energy Award** at Cigre, Paris Session 2022

19. **BHEL has Won Asia's Best CSR Practices Award for its CSR Project – Heal A Soul** under organizational category: Concern for health. BHEL accepted the Award virtually at Pan Pacific, Singapore hosted by CMO ASIA.





Delivering Transmission Projects of National Importance

BHEL has 40+ years of experience of providing substation solution for transmission network. Company has been involved in six complex transmission project of HVDC types in India with its partners. This year company achieved another great milestone of enabling record power transmission of 6,000 MW over the recently commissioned ± 800 kV, 6,000 MW Ultra High Voltage Direct Current (UHVDC) Link between the Western Region Grid (Raigarh, Chattisgarh) and the Southern Region Grid (Pugalur, Tamil Nadu). This UHVDC link will bring relief to the power deficit Southern Grid.

Fully commissioned in October 2021, it is proud moment for BHEL to be associated in building this prestigious project of national importance.

