



50 Years of Engineering Excellence (1964-2014)

Chairman's Address
50th Annual General Meeting
19th September, 2014



Chairman's Address
50th Annual General Meeting
19th September, 2014

Ladies and Gentlemen,

Good morning and thank you for joining us today.

On behalf of the Board of Directors, I take this opportunity of extending a very cordial welcome to you all in the 50th Annual General Meeting of your company; an important milestone evocative of the momentous journey of engineering excellence and a testimony to building trust and value for our stakeholders.

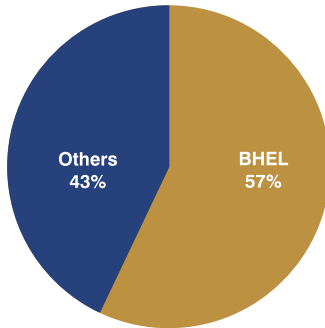
As we celebrate the golden jubilee year, let me also take a couple of minutes to reflect upon your company's glorious past and its evolution into a 'Maharatna' CPSE and one of the largest engineering and manufacturing company of its kind in India.

- Journey of your company during last 50 years is a reflection of its nation building endeavour. It is reminiscent of various trysts made with technology in order to build robust bedrock for establishing a strong Heavy Electrical Equipment industry in India. With a manufacturing prowess of 20,000 MW of Power equipment p.a., BHEL is one of the few global companies with capability to manufacture entire range/type of Power equipment. Today, power stations with BHEL supplied equipment have a sturdy 57% share in India's total installed power generation capacity and contribute 65% to the total generation from coal based thermal utility sets.



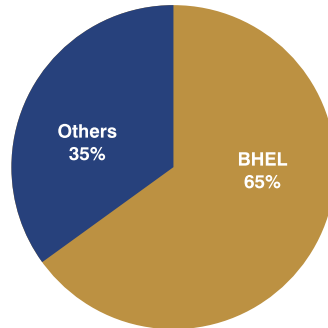
Final Rotor Assembly Area at Heavy Electrical Equipment Plant, Haridwar

Installed Capacity - Utility*
2,18,861 MW (31.03.14)



*Coal, Gas & CCP, Diesel, Nuclear & Hydro

Generation - Utility**
746 BU (2013-14)



**Coal
Source: CEA, Company Analysis

- BHEL has built indigenous capability in manufacturing heavy electrical equipment serving core sectors of the economy while confronting challenges with aplomb throughout, be it competition from global OEMs beginning 1970s, economic liberalization in 1990s or competition from cheap imports in recent decades. With sustained focus on engineering excellence and R&D, development



Hon'ble Union Minister for HI & PE, Shri Anant Geete's first visit to
BHEL Corporate Office on 9th June, 2014



BHEL's first super-critical set of 660 MW rating commissioned at NTPC Barh Stage-II



India's first indigenously manufactured 800 MW Boiler synchronised at Krishnapatnam

of supercritical, Advanced Ultra supercritical, IGCC and HVDC technologies is helping your company stay ahead of competition and provide higher value proposition to customers. Commissioning of first 500 MW unit in 1984, first 600 MW sub-critical and 660 MW supercritical set in 2013 and commissioning of 800 MW boiler in 2014 are some landmarks in BHEL's technological accomplishments.

- Your company has embraced sustainability since beginning while enhancing wealth of its stakeholders. For almost fifty years of our existence, we have been leveraging technology and innovation to facilitate our customers manage their environmental and social impacts throughout the entire operational lifecycle of the power plants by offering equipment with superior performance resulting in reduced green house gas emissions, reduced water consumption and less fuel requirement. We have been progressively introducing environment friendly and fuel efficient technologies for our customers with first order for 500 MW in 1978, 660 MW and 800 MW in 2008 and 700 MW in 2010. Our consistent focus on social initiatives reiterates our belief in inclusive growth and equitable development.

Performance during the year

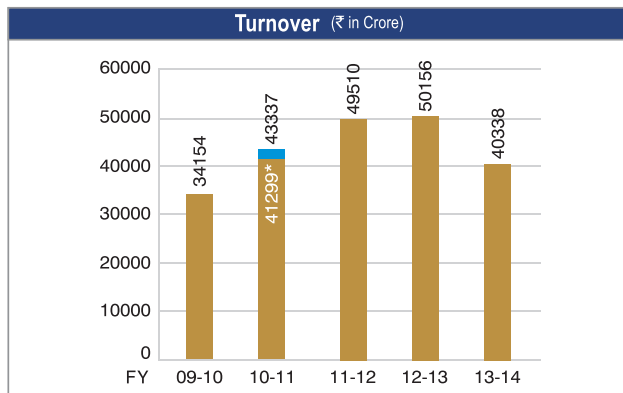
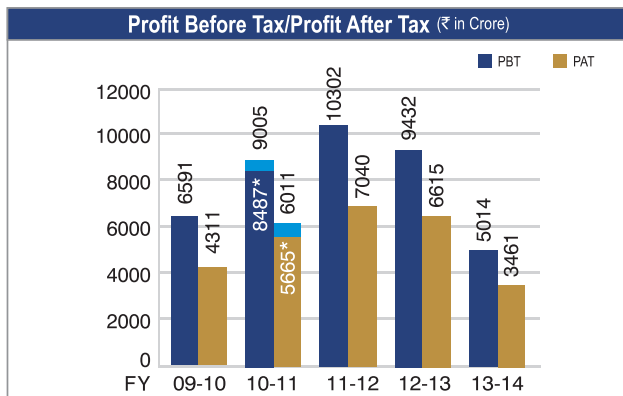
The financial year 2013-14 was an extremely challenging one. It was the second successive year of sub-5% growth, though the economy marginally improved as compared to 2012-13, with GDP growth of 4.7%. Persistent inflation, high fiscal deficit and high interest rates have negatively affected the growth potential. The cutback in investments,



Trombay CCPP (180 MW) awarded National Award for Meritorious Performance (2013-14)

slow momentum in infrastructure and energy sectors, delayed and stalled projects have also contributed to the performance that was below expectations. Investment and capital expenditure by the industry slowed down.

Nevertheless, your company has been quite successful in navigating through such a constrained business environment. BHEL has achieved a Turnover of ₹ 40,338 Crore and a Net profit of ₹ 3,461 Crore during 2013-14. The decline in comparison to 2012-13 is largely due to unfavourable externalities. However, the resilience of your company is evident from the net Profit Margin of 9% which is still higher than many industry peers. During the year, your company synchronized/



*Excluding one-time impact of change in policy of warranty obligation for earlier years



2x500 MW Mouda STPP Stage-I commissioned by BHEL in Maharashtra



Unit-2&3 (150 MW each) of HINDALCO Industries Ltd. - Mahan Aluminium commissioned by BHEL

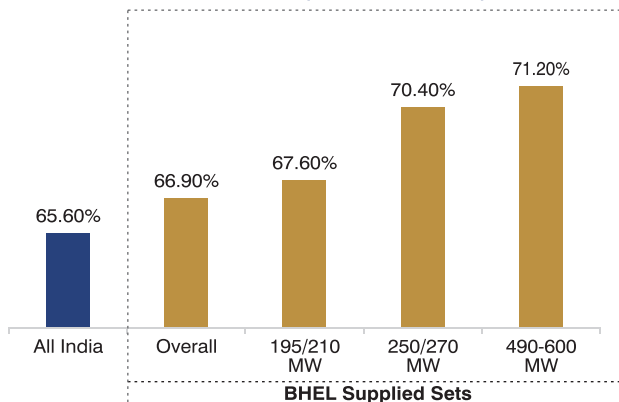
commissioned all time high power projects of 13,452 MW which is highest in a single year. This includes commissioning of 11,266 MW in utilities comprising 9 nos. of 600 MW sets, 1,698 MW in captive/industrial sets, and 488 MW in the overseas markets. Some of the major projects are 600 MW North Chennai-1, 250 MW Chhabra-3, 600 MW Shree Singaji-1, 600 MW JPL Raigarh-1, 500 MW Rihand-6, 600 MW Avantha Bhandar-1, 250 MW Pragati GT-4, 351 MW Pipavav Module-1, 3x130 MW Parbati Stage-3.



126 MW Grodno-II, Gas turbine based cogeneration power plant commissioned in Belarus

Today, BHEL's equipment boast of world-class performance attributes like, lower auxiliary power consumption, superior boiler efficiency, better plant heat rate & plant load factor (PLF) and finally lower life-cycle cost. Customers of BHEL, while remaining profitable, are able to serve the nation in accordance with prevalent and acceptable social and ecological standards. Analysis of thermal power plant performance reports from Central Electricity Authority (CEA), India and North American Electric Reliability Corporation (NERC), USA explicitly

Plant load factor (Coal based sets)





Korba STPS equipped with BHEL-supplied sets recorded PLF of over 90%

indicates superior performance of BHEL thermal sets which ultimately leads to most optimal utilization of fossil fuel coal in such power plants. During the year, overall PLF of BHEL supplied coal based sets at 66.90% was higher than the national average of 65.60% including 36 sets which registered PLF of over 90%. 175 BHEL coal based sets achieved OA higher than 90%. BHEL supplied Nuclear sets registered an OA of 88.6 % and PLF of 81.5 % in 2013-14.

As the economy is expected to move at prerecession levels in near term, the capital expenditure cycle could kick off in a big way in the next few quarters. This will improve business environment and BHEL will benefit from emerging opportunities.

Orders inflow under unfavourable externalities

BHEL secured orders worth ₹ 28,007 Crore from its diversified business segments viz. Power and Industry covering both domestic and international markets. Despite severe market shrinkage and stiff competition in Power Sector, BHEL increased its market share from 68% in 2012-13 to 72% in 2013-14 which includes highest ever Mega EPC order worth ₹ 7900 Crore for 3x660 MW Supercritical units from NTPC for North Karanpura. The company ended the year with an order book of ₹ 1,01,566 Crore.



Signing of Contract Agreement for 3x660 MW NTPC North Karanpura STPP Stage-I

Preparing for Growth

Today, as BHEL celebrates the Golden Jubilee year in its journey of sustained growth and leadership, it is also the time for us to ponder about the future. Company faces many challenges. Profit has been impacted due to low volumes. Certain ongoing projects have got impacted as the Indian Power Sector continues to be besieged with issues relating to fund constraints, land acquisition, clearances and coal linkages. These testing times in recent few years have given us the opportunity to consolidate our strengths, identify areas for future growth and leverage on the intrinsic capabilities to build strong foundations for coming years.

Your company will achieve this through the anchors of capability enhancement, project execution, cost competitiveness & quality, diversification, engineering & technology, and people development as per the '6-Point Agenda' adopted.

1. **Capability Enhancement:** Enhancing the capability to deliver excellence is the key pillar of strength to address current turbulent times. Large scale of operations creates a competitive advantage for BHEL as it converts high assets base into economies of scale by spreading fixed costs, pooling resources and creating critical mass



'Power Plant Piping Unit' established at Thirumayam for manufacturing high pressure & critical piping for power plant applications

in a significant portion of power project value chain. BHEL has augmented its manufacturing capacity for Power Plant equipment to 20,000 MW p.a., Power Transformers to 45,000 MVA p.a., Seamless Steel Tubes to 86,500 MT p.a. and created New Manufacturing Units - Centralized Stamping Unit at Jagdishpur and Power Plant Piping Unit at Thirumayam besides merger of BHPV Vizag with BHEL to leverage its scale.

2. **Accelerated Project Execution:** Faster execution and delivery on time are needs of the competitive business environment of the day. Your company adopted key strategy of accelerating project execution with focus on intermediate milestones, delivery cycle reduction, and deployment of additional Tools & Plants. Execution capabilities have been strengthened with various initiatives such as addition of 129 heavy cranes at project sites suitable for erection of 600/660 MW sets. During 2013-14, your company synchronized/ commissioned 30% more power projects as compared to previous year. Further in Transmission business area, your company constructed and successfully commissioned 765/400 kV substation 6 months ahead of schedule at Raichur in Karnataka, the Southern end of 765 kV Raichur-Sholapur



Synchronized Southern Grid with N-E-W Grid & formed the National Grid by constructing & commissioning 765/400 kV substation at Raichur, Karnataka

transmission link of PGCIL. With this, the Southern Grid is now synchronised with the N-E-W Grid thus forming the synchronously operated National Grid thereby fulfilling the ambition of One Nation - One Grid-One Frequency.

3. **Product Cost Competitiveness & Quality:** To address prevailing pricing pressures, your company is focusing on indigenisation in new technology areas and development of Indian vendors for reducing import content along with optimization of designs, standardization of equipment modules, reducing rework cost, enhancing performance parameters and de-packaging of bought-out-items & civil works, which are adopted across all business areas. Other cost reduction measures in different areas of operations through competitive buying, supply risk mitigation, IT application, operations improvement, and better employee productivity remain continuous endeavours.
4. **Diversification:** Given the current business environment, particularly in power sector we are focusing on increasing our value contribution in a shrinking market. Towards this, company has been adopting two pronged strategy; focus on EPC business and enlarging scope of offer. BHEL is expanding its portfolio by adding

Flue-Gas Desulphurisation (FGD), Water Management system, Air Cooled Condenser, and other Balance of Plant (BoP) systems. Your company is fully harnessing potential in Spares & Services area, forging partnerships with Power Plant Developers for UMPPs. Increasing level of indigenisation in Supercritical Technology, development of Advanced Ultra Supercritical power equipment, and introduction of state-of-the-art CFBC technology are major strategies in Power Sector.

Industry segment too is feeling the effect of the contraction in investments. As planned, BHEL has taken various initiatives in recent past to expand its presence in Transportation (Rail), Solar, Defence and Transmission business areas, both by way of investments in existing facilities and by exploring new business models with focus on collaboration with value chain partners for capitalising new business opportunities. Plan to set up an integrated manufacturing facility for 480 MW Solar PV systems in Maharashtra is a significant step in this direction. For business diversification, BHEL is focussing on product development (e.g. 765 & 1200 kV transformer & Defence equipment), collaboration with stakeholders, capabilities' consolidation (e.g. water business) and gaining experience in new technology areas (e.g. NE Agra



WAG-9 locomotive with IGBT based three phase drive propulsion system



10 MW Solar Power Plant commissioned at NTPC Talcher



BHEL offers turnkey solutions for RO based sea water desalination

±800 kV HVDC transmission line) to enhance share of Industry Segment in turnover-mix.

In Hydro power sector, BHEL has augmented its capabilities to manufacture up to 300 MW Hydro sets. Adding to its nuclear capabilities, India's first 1000 MW Nuclear set at Kudankulam-1 was synchronised in 2013 where your company successfully carried out erection and commissioning of TG.



400 kV class HVDC converter transformer under test at BHEL, Bhopal for ± 800 kV, 6000 MW, multi-terminal HVDC NE Agra Project



2000 HP AC-AC VFD Oil rig for ONGC



Super Rapid Gun Mount SRGM for naval ships

Your company is also exploring collaboration opportunities in target countries to grow exports business by forging opportunity-specific and market-specific alliances to strengthen BHEL's role as an EPC Contractor in the International markets. During the year, we have commissioned 488 MW of projects in overseas market which includes 12 MW Finchaa-2 in Ethiopia, 100 MW Nam Chien-2 in Vietnam, 2x125 MW Kosti in Sudan and 126 MW Grodno-2 in Belarus.



India's first 1000 MW Nuclear set at Kudankulam-1

5. **Engineering & Technology:** Innovation, an integral aspect of our business strategy to enhance competitiveness and offer contemporary solutions to our customers, is going to power your company's future. BHEL, started with technology support from Global OEMs, has developed indigenous capabilities. Keeping up with its commitment to R&D led growth strategy, BHEL spent ₹ 1,114 Crore in 2013-14 which was 2.76% of the turnover as against 2.49% for the previous year. This is the highest R&D spend by an Indian company in the engineering and manufacturing segment. Company's total intellectual capital of 2,589 patents and copyrights is a reflection of the R&D efforts with highest ever IPRs (434) filed during the year. Turnover from in house developed products amounted to ₹ 8,110 Crore which is 20 % of the company's Turnover. In view of current coal situation in the country, your company has developed new fuel flexible supercritical boilers which can operate and maintain steam generation in the extreme cases of 100% specified Indian coal as well as 100% specified imported coal. This design will ensure continuous running of the Unit at rated capacity for different types of Indian or imported coal either individually or in combination. BHEL is playing a key role in research, development, demonstration and deployment (RDD&D) with development of India's first coal fired Advanced Ultra Supercritical (AUSC) power plant in association with Indira Gandhi Centre for Atomic Research (IGCAR) and NTPC. Giving further impetus to this endeavour, Government of India has also allocated ₹ 100 crore in Union Budget 2014-15 for preparatory work on 'ultra-modern supercritical coal based thermal power technology'.

As relationship between ecology and technology is changing, BHEL is committed to offer fuel efficient and environment friendly technologies and products to its customers. First BHEL make 660 MW Supercritical unit was commissioned for NTPC at Barh and first 800 MW Boiler was synchronised for APPDCL at Krishnapatnam during 2013-14. BHEL also delivered CFBC for burning multiple fuels and HRSG for recovering waste heat in

addition to development of IGCC for coal gasification technologies in India.

6. **People Development:** The force behind BHEL's sustained leadership journey is its dedicated workforce of more than 47,000 employees. The gradual reduction of average age of employees from 48.96 yrs in 2006 to 40.84 yrs in 2013 shows demographic profile at BHEL is moving in favour of millennial generation. Therefore, People Development strategy of BHEL is focused on developing each employee's competencies, performance and potential in alignment with business plans.

During last 1-2 years, much celebrated growth story of Indian power sector has dampened due to issues like fuel supplies, land acquisition, environment clearance and macroeconomic factors discouraging developers and investors in new projects. Some of our customers in recent past are struggling with regulatory and governance issues resulting in slow execution of projects. This is putting strain on their finances. Your company generally being largest stakeholder in these projects is also affected resulting in rise in debtors to uncomfortable levels. We have put in place structural arrangements to accelerate cash collections. They are ably addressing various issues like closure of punch-points with customers, scheduling of supplies taking note of



financial behaviour of customers, tie-ups with financial institutions for direct payments and taking up the issues with government in case of financially constrained Utilities. Because of our multi-pronged strategy, we are able to arrest rate of increase of debtors.

Governance & Inclusive Development

Your company believes that conducting business in a manner that complies with the Corporate Governance procedures and Code of Conduct, exemplifies each of our core values and positions us to deliver long-term returns to our shareholders, favourable outcomes to our customers, attractive opportunities to our employees and making the suppliers our partners in progress & enriching the society. We are addressing the issue of social development and inclusive growth through our focus on capacity building, empowerment of communities, development of backward regions, and upliftment of the marginalised & under-privileged sections of the society.

Retaining Resilience

Our Hon'ble Prime Minister has given a clarion call to 'Make in India' and this has been identified as one of the key missions of the new government. In this regard, government is trying to leverage synergies with other countries like Japan and China to reenergise manufacturing



Mobile Medical Units (MMUs) fully equipped with basic diagnostic equipment provided to Help Age India

and infrastructure sectors which may catapult India to return to a much higher growth trajectory. Therefore, the future is filled with both exciting opportunities and gruelling challenges. With the golden legacy of 50 illustrious years on its side, BHEL has embraced this business dynamism by expanding its offerings and enhancing competitiveness seeking to realize its long term vision and stay relevant with the changing times. Our growth strategies emerging from diversification are linked with growth in economy and subsequent investment in infrastructure, have long gestation period. Creating new business avenues and maximizing utilization of available infrastructure will be the key to future growth and stakeholders' wealth enhancement.

I am grateful to my fellow Directors on the Board and the members of the Management Committee for their wisdom and continuous support. I would also like to extend special thanks to each and every shareholder of BHEL, whose trust and confidence has been the motivating force in all our endeavours. I thank all our customers and business associates in India and abroad for their unstinted loyalty and steadfast patronage of our products and services. Various ministries of Government of India particularly the Department of Heavy Industry have been providing valuable guidance and support in all our efforts. Finally, a word of thanks to more than 47,000 employees of BHEL who are making these



Board of Directors of BHEL



Management Committee of BHEL

successes happen. I am extremely proud of their high level of commitment to the company and their outstanding performance over this period and have full confidence in their ability to deliver even greater success going forward.

I am deeply indebted to the Leaders and employees of yesteryears who have brought us here- *50 years of Engineering Excellence*. Being trusted to deliver excellence sets the standard very high, and we strive to achieve that everywhere, every day. The new and changing India will have an insatiable appetite for wide range of products & services offered by BHEL. Therefore, the Board of your company is confident of realising its vision of becoming a global engineering enterprise providing solutions for a better tomorrow and honouring our Golden Legacy.

I look forward to your unwavering support in this challenging but exciting process of building a vibrant India.

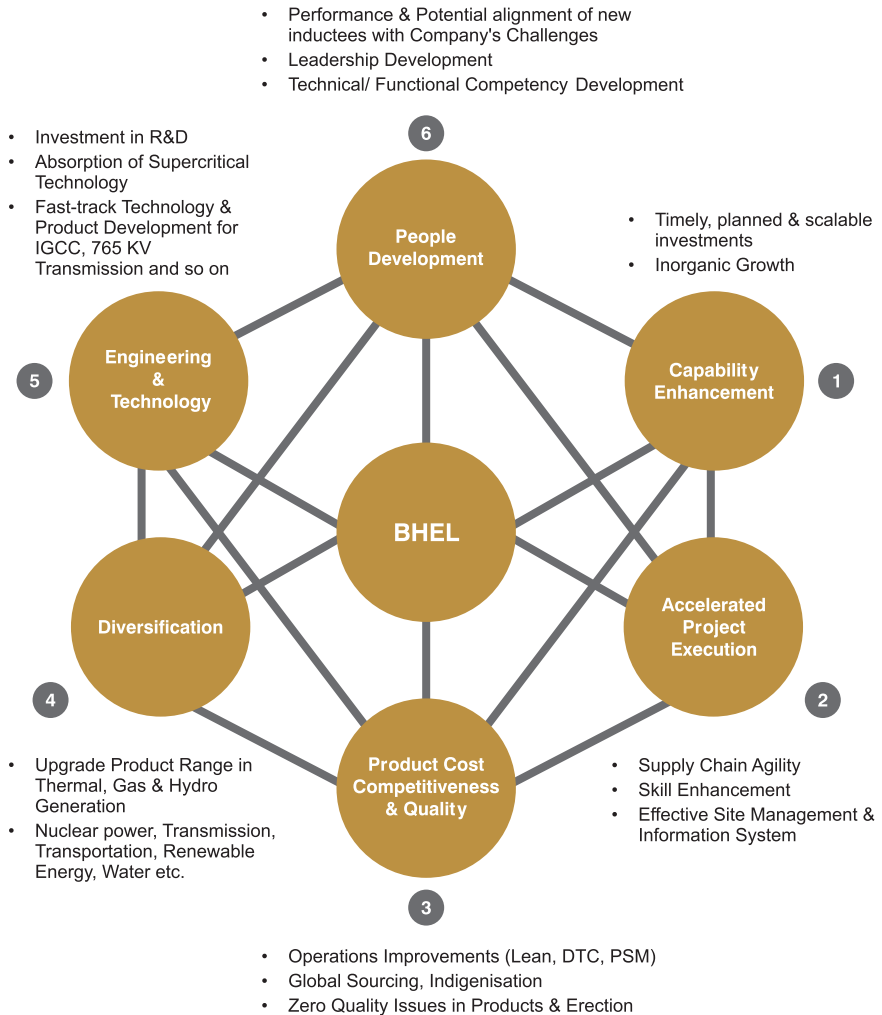
With best wishes,

New Delhi
September 19, 2014



(B. Prasada Rao)
Chairman & Managing Director

Six-Point Agenda





Bharat Heavy Electricals Limited

Registered Office : BHEL House, Siri Fort, New Delhi - 110049, India.

www.bhel.com

Corporate Identity Number: L74899DL1964GOI004281



Power

Transmission

Industry

Transportation

Renewables

Oil & Gas

Defence

Water

*Powering Progress... Brightening Lives
Touching Every Indian Home*