

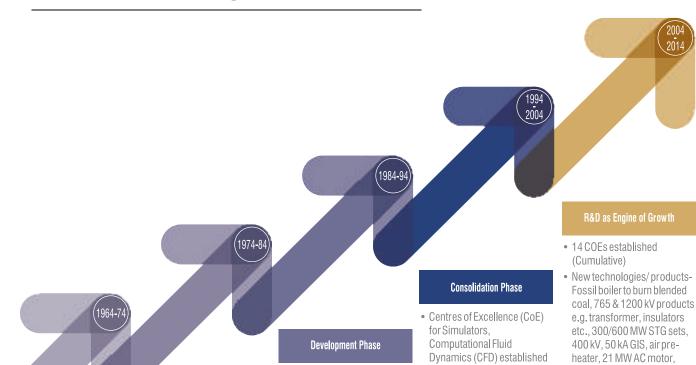


50 Years of Engineering Excellence (1964-2014)

ANNUAL REPORT 2 0 1 3 - 1 4

BHEL's Engineering & Technology Journey

Absorption/Localisation/Development of New Technologies/Products



Laying Foundation for Technology, Skills & Knowledge

- Technical Collaborations in Power Plant equipment to build base
- Focus on skill development and training in power sector technologies
- BHEL files 1st Patent-Building of Intellectual Property (IP) Capital
- Established Corporate R&D Division to generate knowwhy, enhance indigenisation pace, new technologies/

Creating Organisation for

Engineering & Technology

• Engineering Development Centres with Product Engineering, Field Engineering Services & Research & Product Development (RPD)

products

- Welding Research Institute (WRI) established
- · Focus on adaptation of designs to local requirements

- Specialised Institutes e.g. CTI, PCRI, CET and ASSCP Laboratories set up to build Infrastructure and develop competencies
- · System Engineering matured to deliver customer specific solutions
- · New technologies/products -Simulators, CFBC, Locomotives, etc.
- 2x10 MW Pithead, Bubbling Fludised Bed Combustion (BFBC), Washery rejects based power plant
- · National HVDC project
- Entry into Solar PV

- New technologies/products-Pulverised Fludised Bed Gasification (PFBG) 6.2 MW IGCC Pilot Plant, 32 kV GIS Pro-control based Boiler & TG integral Controls, Two cylinder ST, Radial fans, Controllers for ESP, FACTS devices, Controlled Shunt Reactor (CSR), Phase Shifting Transformer (PST), STATCOM, Deaerator upto 1000 MW, Bowl Mill, PADO, etc.
- Remote Controlled Power Station
- Solar PV panels/bat teries for Satellites

- permanent magnet based machines, power conditioning unit, indigenous valves, condensers, LP Heaters for supercritical range, STATCOM, IGBT based AC locos, single cylinder ST,
- Technology absorption supercritical sets up to 800 MW
- IP Capital grew to 2170 nos.
- R&D spend enhanced to 2.5% ofturnover
- New technologies development in 'Mission Mode' launched as part of Strategic Plan 2012-17 - Adv Ultra Super Critical (AUSC), Integrated Gasification Combined Cycle (IGCC) renewables, water, 765 kV GIS, HVDC, etc.
- Design automation and product optimisation through Knowledge Based Engineering (KBE)



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Letter to Shareholders



Dear Shareholders

It is a privilege to present the 50th Annual Report of your company celebrating the Golden Jubilee year of its momentous journey. BHEL has been successful in evincing a consistent performance in recent years while navigating through a strenuous business environment characterised by gradual slowdown in economic growth, fewer project finalisations and growing business complexities. Today, when many of our industry peers are finding it difficult to defy economic headwinds, your company has developed considerable *Absorptive Strength* as reflected from sustained market leadership, bottom-

developed considerable
Absorptive Strength as
reflected from sustained
market leadership,
bottom-line performance,
commendable project
execution and continued
focus on innovation...

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50 Years of Engineering Excellence

line performance, commendable project execution and continued focus on innovation.

I would like to share some highlights of 2013-14 and provide a few thoughts on both the key focus areas of your Board and the future prospects of your company:

- BHEL has achieved a turnover of ₹ 40,338 Crore and a net profit of ₹ 3,461 Crore during 2013-14 registering a decline of 20% and 48% respectively over the last year, 2012-13. The decline is largely due to unfavourable externalities. However, I am comforted by the resilience of your company as it made a net Profit Margin of 9% which is still higher than many industry peers.
- In a market which has sharply contracted and has become fiercely competitive in recent years, your company further strengthened its leadership position with a market share of 72% in the Indian Power Sector. BHEL secured orders worth ₹ 28,007 Crore from its diversified business segments covering both domestic and international markets including a mega EPC order worth ₹ 7,900 Crore for 3x660 MW Supercritical units from NTPC for North Karanpura project against stiff international competition.
- Our pace of project execution remained healthy.
 During the year, your company synchronised/ commissioned all time high power projects of 13,452 MW which is 30% higher than last year.
- BHEL is committed to its innovation-led growth strategy. During the year, BHEL invested ₹1,114 Crore on R&D - 2.76% of the turnover. Company also filed 434 patents and copyrights, enhancing the company's intellectual capital to 2,589, which are in productive use.
- Your company is focussed on capitalising new business opportunities. MoU with SECI, PGCIL, SJVNL, SSL, and REIL for setting up a 4,000 MW Ultra Mega Solar Power Project at Sambhar, Rajasthan and plan to set up an integrated manufacturing facility for 480 MW

can operate and maintain steam generation in the extreme cases of 100% specified Indian coal as well as 100% specified imported coal.

Solar PV systems (Wafers-Cells-Modules) are significant steps in this direction.

• 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.

Preparing for Growth

Today, as BHEL celebrates the Golden Jubilee year in its journey of sustained growth and leadership, it is also a celebration of India's spectacular success in achieving self-sufficiency in the indigenous manufacture of heavy electrical equipment. Ironically, this momentous occasion falls during turbulent times. Nevertheless, company is taking prudent strategies with focus on consolidating strengths and value propositions to emerge even more competitive for tapping opportunities in the next phase of economic growth of India.

 As envisaged in Strategic Plan 2012-17, BHEL has taken various initiatives to increase

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contribution in power projects, business expansion with more focus on EPC orders and enhancement of cost competitiveness. We are expanding our Power Sector portfolio by adding Flue-Gas Desulphurisation, Water Management System, Air Cooled Condenser and other Balance of Plant (BoP) Systems. 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.

- Diversification of business has been receiving the focus of Management of BHEL in recent years. Capacity expansion, product development, collaboration with stakeholders, capabilities' consolidation and gaining execution experience are being pursued in various business verticals to enhance share of Industry Segment in turnover-mix.
- Your company is also exploring collaboration opportunities in target countries to grow exports business.
- Scale of operations at BHEL is emerging as key competitive advantage as it creates critical mass in power value chain. Capacity augmentation for power plant equipment manufacturing to 20,000 MW p.a, locomotive manufacturing to 75 numbers p.a, new Manufacturing Units- CSU Jagdishpur, PPPU Thirumayam, PEF Plant at Bhandara and merger of BHPV Vizag are steps undertaken by BHEL to leverage its scale.
- Company is focusing on Innovation to steer future growth by transforming its R&D capabilities in a structured & focused manner. Investments in R&D are intensified to enhance capabilities in Product Development & Engineering with plan to maintain R&D expenditure at plus 2.5% of Turnover.
- BHEL will continue to pursue its key strategy of accelerating project execution with focus on intermediate milestones, delivery cycle reduction and deployment of additional Tools & Plants.

Without resting on the past laurels, your company will continue to build on its strengths through focus on capability enhancement, project execution, cost competitiveness & quality, diversification, engineering & technology and people development as envisaged in BHEL's 6-Point Agenda ??

- Demographic profile at BHEL is moving in favour of millennial generation resulting in gradual reduction of average age of employees, say from 48.96 yrs in 2006 to 40.84 yrs in 2013. Therefore, People Development strategy of BHEL is focusing on developing each person's competencies in alignment with business plans through implementation of initiatives like leadership development, competency mapping, performance linked pay, mentoring, Skill Development, career planning and succession planning.
- Company works with a mission of providing sustainable business solution to its customers. As decarburising power sector is at the heart of global efforts to make deep cuts in global CO₂ emissions, 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.

50 Years of Engineering Excellence

Sustainability: Entrenched in Our Golden Heritage

Your company has been leveraging technology and innovation for providing products, systems and services to its customers in an environmentally sustainable and socially responsible manner while remaining profitable.

With first order for 500 MW in 1978, 660 MW and 800 MW in 2008 and 700 MW in 2010, we have been progressively introducing environment friendly and fuel efficient technologies for our customers.

While we continue to find innovative ways to reduce our carbon footprint, through world class quality equipment with performance attributes like lower auxiliary power consumption, superior boiler efficiency, better plant heat rate & PLF and finally lower life cycle cost, our consistent focus on social initiatives reiterates our belief in not just being a good corporate citizen; but aspiring to change the world for better.

Retaining Resilience

Without resting on past laurels, your company will continue to build on its strengths through focus on capability enhancement, project execution, cost competitiveness & quality, diversification, engineering & technology and people development as envisaged in BHEL's 6-Point Agenda.

I am grateful to you, our stakeholders – customers for reposing their faith in us, employees whom we recognise as our core asset for their enthusiasm, unstinted devotion, and commitment towards the quest of excellence, our Members on the Board for their wisdom and continuous support; management team for efficiently steering the company's resources and you, our shareholders for your trust and confidence. Various Ministries of Gol particularly the Department of Heavy Industry have been providing valuable guidance and support in our efforts.

I am deeply indebted to the Leaders and employees of yesteryears who have brought us here - 50

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years of Engineering Excellence. Today, India is changing. Factors such as rising urbanisation, changing demography, energy security, climate change and inclusive development are transforming India. This 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,

(B Prasada Rao) Chairman & Managing Director

> New Delhi August 07, 2014

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Leadership at BHEL

Board of Directors (As on 14.07.2014)



Sitting from right to left

Ms. Harinder Hira, Part-time Non-official Director

Shri B. Prasada Rao, Chairman & Managing Director

Shri S.K. Bahri, Additional Secretary & Financial Adviser, DIPP

Standing from right to left

Shri R. Krishnan, Director (Human Resource)

Shri W.V.K. Krishna Shankar, Director (Industrial Systems & Products)

Shri Ambuj Sharma, Additional Secretary, DHI

Shri P.K. Bajpai, Director (Finance)

Shri Atul Sobti, Director (Power)

Shri I.P. Singh, Company Secretary

Leadership at BHEL

Management Committee (As on 19.07.2014)



- B. Prasada Rao, CMD
- 2 P. K. Bajpai, Director (Finance)
- R. Krishnan, Director (HR)
- W.V.K. Krishna Shankar, Director (IS&P)
- 5 Atul Sobti, Director (Power)
- 6 A.V. Krishnan, ED (Trichy)
- Jainender Kumar, ED (PMG)
- B. Shankar, ED (HR&CC)
- 9 T.N. Veeraraghavan, ED (Ranipet)
- S.C. Mittal, ED (Finance & CCG)
- **11** K.C. Ramamurthy, ED (EDN)
- A.K. Dave, ED (CMT&IP, MON & MM)

- C.K. Shrikhande, ED (PSNR)
- S. Gopinath, ED (Thirumayam & PC)
- 15 Rajiv Puri, ED (PEM & ISG)
 - S.R. Prasad, ED (Bhopal)
- N. Ravi Chander, ED (HPEP, Hyderabad)
- Anuj Bhatnagar, ED (FQA & Safety)
- 19 Prakash Chand, ED (HEEP, Haridwar)
- 20 Akhil Joshi, ED (TL&JV, M&A)
- 21 Dr. S. Sekar, ED (Corp. R&D)
- S.V.S. Narayana, ED (CFFP, Haridwar)
- Rajeev Srivastava, ED (SSBG)

- V. Venkata Krishnan, ED (PS-Mktg.)
- 25 S.C. Jain, ED (PSWR)
- K. Rajendran, ED (Coordination)
- K.K. Seth, ED (HRDI, NIC & CPG)
- Ramesh Koul, ED (TBG)
- B.S. Vishwanatha, ED (TSG)
- Devendra Raina, ED (IPE & IPM)
- S.N. Maiti, ED (PSTS)
- 32 M.K. Sharma, ED (PE&SD)
- Pradeep Singhal, ED (CSR, HSE & Admn)
- L.K. Rawal, ED (P&D)

- 35 C.V.S.N. Murthy, ED (Renewables & Water Business)
- 660 Amitabh Mathur, ED (PSER)

Permanent Invitees

- S. Raj Sabapathy, GM-I (ROD & CFP)
- 38 R. Raghavan, GM-I (ISG)
- 39 Kamalesh Das, GM-I (CBU)
- D. Bandyopadhyay, GM-I (PSSR)
- 41 J. Sankaran, GM-I (HPVP)
- D. Guin, GM-I (IO)
- 43 M. Khasgiwala, GM-I (Jhansi)
 - 44 K. Purswani, GM-I (CQ)

Secretary

45 K.S. Shivaprasad, GM (P&D)



Leadership at BHEL

Corporate Organisational Structure (As on 11.07.2014)

