Bharat Heavy Electricals Ltd.: growth strategies for the future

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Prologue

In pursuit of industrialisation, after independence, several large-scale undertakings were established by the Government of India (GOI) with the active support of the erstwhile USSR[1] and the Czech Republic. To expand on the synergies, some of these undertakings were merged in 1974 to form the giant Bharat Heavy Electricals Limited (BHEL). During this period, BHEL enjoyed the state monopoly, enabling it to enter into technical arrangements with multinational companies for whom BHEL was the only route by which to reach the Indian market for power equipment.

Post-liberalisation, the number of international players/suppliers of power equipment increased their focus on the growing Indian market by joining forces with domestic companies, setting up manufacturing facilities and augmenting their existing capabilities. Some of these international players were technology leaders and insisted on their terms and conditions, including the imposition of licensing restrictions on different market territories in the overseas arena as a pre-condition for a technological collaboration.

BHEL, in this way, was in direct competition with its own technology collaborators. Various other constraints such as delay in obtaining environmental clearances, land acquisition and local law and order problems also affect the implementation of power projects.

Company profile[2]

BHEL is India's largest engineering and manufacturing enterprise, operating in the energy sector and employing more than 48,000 people. Established in 1964, it has created a strong presence in the heavy electrical equipment industry nationally as well as globally. BHEL is one of the Maharatnas[3] among Central Public Sector Enterprises[4] in India.

BHEL offers more than 180 products and provides systems and services to meet the needs of core sectors including power transmission, industry, transportation, oil and gas, non-conventional energy sources and telecommunications. The company has 16 manufacturing divisions, two repair units, four regional offices, eight service centres, eight overseas offices, 15 regional centres and currently operates at more than 150 project sites across India and abroad (Exhibit 1).

BHEL's core competence lies in developing and manufacturing turbine generator sets for different types of power generation, including hydro, thermal and nuclear energy. It has the capabilities to put up total power generation and transmission systems utilising different types of equipment and technologies. Other products include boilers, pumps, heat exchangers, electrical machines, valves, heavy castings and forgings, digital control systems, railway traction equipment and renewable energy (RE) equipment.

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BHEL has recorded highest ever turnover and profit during the financial year (FY) 2012-2013, at a time when the economic and business environment in India was undergoing a challenging macro-environment. During this period, the company, despite a lacklustre market, rising prices and intense global competition, reported a turnover and a net profit of INR 50,156 crore and INR 6,615 crore, respectively, during the FY 2012-2013.

BHEL is a highly domestic-oriented company with only 7 per cent of the order book being received from international operations. Its fortunes are also dovetailed (in sync) with the power sector, with 80 per cent of the order book being derived from the power sector. Allocations by the government in the power sector, investments in public and private power projects and the financial health of the state electricity boards (SEBs) influence BHEL's corporate plan and growth track to a large extent.

BHEL's products and systems are technology-intensive, and the company emphasises R&D/technology development in its endeavour to realise its strategic aspiration of becoming an engineering conglomerate. During the FY 2012-2013, BHEL invested INR 1,252 crore in R&D efforts, 4.4 per cent higher than the previous year. A record turnover of INR 99,643 crore (around 19 per cent of the turnover) from in-house developed products and services was achieved during the year. To facilitate advanced R&D activities in focused areas with state-of-the-art facilities, BHEL has established 13 Centres of Excellence. Significantly, BHEL is one of the only four Indian companies and the only Indian Public Sector Enterprise figuring in "The Global Innovation 1,000" of Booz & Co., a list of 1,000 publicly traded companies which are the biggest spenders on R&D in the world.

Monolithic business model[5]

BHEL represents a business model which derives stability and growth based on the strong development needs of infrastructure in a growing economy such as India. The company's domestic orientation and infrastructure emphasis has enabled it to withstand the recessionary cycle witnessed in the FY 2008-2009.

Around 79 per cent of BHEL's business comes from supplying equipment to power generation companies (such as National Thermal Power Corporation (NTPC), Damodar Valley Corporation (DVC), SEBs, Tata Power and National Hydroelectric Power Corporation (NHPC)), while the remaining 21 per cent comes from equipment sold to industries for their internal power generation. The company also supplies its equipment to international markets, largely to the Gulf and African regions.

Design and manufacture of equipment and systems for infrastructure and industrial sectors is an investment-intensive endeavour. In several cases, erection and commissioning activities are an integral part of the contracts. To reduce the dependence on power utility providers, the company widened its focus area and, hence, its product base. The company manufactures equipment for industrial users, for railways and several other industries including telecommunications, metallurgical and process industry. This segment consists of transportation, non-conventional energy and R&D related activities of the company.

Business environment[6]

Prior to 1991, BHEL enjoyed unrestrained access to the Indian market, enabling it to enter into technical arrangements with multinational companies for whom BHEL was the only route to reach the Indian market for power equipment. BHEL then used to source technology from foreign companies, upgrading it to meet Indian conditions. This "Special Status" status brought significant gains; prior to liberalisation, BHEL had 86 per cent of all power equipment contracts in India financed by multilateral agencies in international competitive tendering.

Post-liberalisation, the Indian power sector has caught the attention of the world because of high power capacity additions programmes planned in the country. This has resulted in a number of international players/suppliers of power equipment increasing their focus on

the growing Indian market by joining with domestic companies, setting up manufacturing facilities or augmenting their existing capabilities. Some of these international players are technology leaders, and insist on their terms and conditions, including imposition of licensing restrictions on different market territories in overseas arena as a pre-condition for technology collaboration.

From the standpoint of international power equipment manufacturers, the Indian market for power equipment is significant – the size being larger than the entire European market minus the United Kingdom and Germany. Recession in the power equipment market has resulted in a series of mergers that have created giant conglomerates.

BHEL is thus directly in competition with its own technology collaborators. Moreover, lack of adequate funding for capital-intensive power generation, transmission and distribution systems has forced Indian power utilities to buy equipment from countries that fund specific projects. Thus, multilaterally funded projects are based on competitive bidding, and bilateral credit is tilted towards purchase of equipment from manufacturers from the same company as the source of funding.

Coal being the dominant fossil fuel used for power generation in India, domestic power developers/utilities are facing crunch of this natural resource due to shortage of supply, as excavation of coal is not meeting demand. In addition, various other constraints such as delays in obtaining environmental clearances, land acquisition and local law and order problems are affecting the implementation of power projects.

A combination of global competition and open access in the domestic market is putting pressure on the margins, as new players are likely to move towards gaining market share by bidding aggressively. This is threatening the competitive intensity for BHEL in the long-term. Raw materials, such as steel products, that are critical to the production process are subject to substantial pricing cyclicality and periodic shortages of supply in India. The margins are thus continuously being impacted by movement in raw material prices, especially steel and copper.

Competitor analysis (primary segments only)

Boiler turbine generators (BTG segment)

BTG is a mainstay (revenue generator) of BHEL with more than 70 per cent revenue attributed to this sector. The annual capacity in the domestic BTG equipment industry segment is currently at 25 gigawatts (GW) and is expected to rise to 40 GW by 2014-2015, compared with a demand of about 22 GW. Many Indian companies have entered into partnerships with global players and are in their last leg of completion. Notable among the partnership are L&T–MHI (Mitsubishi Heavy Industries Ltd), Toshiba–JSW, Alstom–Bharat Forge, Ansaldo–Gammon, Thermax–Babcock, BGR–Hitachi and DOOSAN. This has resulted in enhanced competitive environment in the country.

Adding to this is the competition from abroad, particularly from Chinese suppliers. Overcapacity in the Chinese BTG segment has resulted in Chinese companies targeting growth markets such as India. The competitors are entering into the market by adopting a low-price strategy or by keeping the niche approach to get hold on market share. China-based manufacturers backed by cheap finances are charging INR 1.6 crore/MW only for BTG set as against the earlier prices of INR 2.5 crore/MW.

Transmission segment

The total supply of transformers by BHEL constitutes nearly 56 per cent of total transformers installed in the country, making it the market leader in this segment. However, sensing opportunity, multiple players have entered this business segment and therefore eroding the market share of the business. The manufacturing capacity in the country has risen to 3.7 million volt ampere (MVA), of which BHEL share is restricted to 45,000 MVA.

The domestic market is fragmented with around 20 organised players such as BHEL, ABB Ltd., Crompton Greaves Ltd (CGL), Siemens, Areva T&D, EMCO Ltd., Bharat Bijlee Ltd. (BBL), Vijai Electricals, Transformers & Rectifiers India Ltd (TRIL) and Voltamp Transformers Ltd.

Owing to rigid terms and increased interest from global players, prices have dropped to the extent of 25-30 per cent in the past years. Chinese and Korean companies continue to increase their presence even in this sector by winning about 60 per cent of the orders in past three to four years. Being a technologically intensive product, market leaders are reluctant to share the latest technology with any of the players including BHEL. With this in the backdrop, BHEL is investing in indigenous development of technology.

Transport segment

BHEL enjoys dominance in this sector, as it is the sole supplier of locomotives to the Indian Railways. It has also entered into technology partnership with M/s Strukton Systems B.V. of The Netherlands for the state-of-art Insulated Gate Bipolar Junction Transistor-based propulsion system for railways. However, even in this segment, multiple global players have begun showing their interest in this sector.

The increased expansion of metro and monorail has brought new opportunities to BHEL. The company is focusing on metro-rail transportation, as roughly 30 Indian cities are planning to build the networks within their city limits.

Strategic profitability analysis

BHEL has its contribution from seven sectors. These sectors are as follows:

- *Power sector:* The power sector consists of TG (Turbine-Generator), Strategic Business Unit (SBU) and Boilers SBU. BHEL is the largest producer of boilers with more than 60 per cent[7] of the market share and the majority of turbines and generators being manufactured by them, making them the market leader. However, India's power sector is currently battling a chronic shortage of fuel including the coal and gas needed to productively fire power plants. Projects are faltering due to reasons as varied as delayed investment decisions, contractual problems, resistance to land acquisition, delays in environmental and forest clearances and geological issues and natural calamities. Hence, in terms of percentage growth, the power sector is a slow growth sector.
- *Transmission sector:* The transmission sector falls under the industry segment which caters to 22 per cent of BHEL's industry segment. It consists of gas-insulated substation SBUs and transformer SBUs which holds a good market share, and the growth in this sector is much more than in the power sector at 40 per cent year-on-year.
- *Transportation sector:* BHEL is the largest supplier of locomotives to Indian Railways, thus retaining a huge market share. Most of the trains of the Indian Railways, whether electric or diesel-powered, are equipped with BHEL's traction propulsion system and controls. The range includes traction motors, traction generators/alternators, transformers, substation equipment, vacuum circuit breakers, locomotive bogies and associated control equipment. Almost all the Electrical Multiple Units (EMUs) in service in India are equipped with electrics manufactured and supplied by BHEL[8]. Indian Railways in their mission for 2020 has targeted an annual growth of 10 per cent over the next ten years and adding 25,000 km of new railway lines by 2020[9]. This sector is expanding exponentially, thus enhancing opportunities for BHEL to further strengthen its stronghold. BHEL is also seeking to expand its transportation business to tap metro-rail networks as well as the mass rapid transit system (MRTS) segment being built in seven Indian cities at an estimated cost of US$21.5 billion (www.businessnewsonline.org/?p=34064).
- *Non-conventional energies:* The RE sector around the world, including in India, is developing rapidly. Within RE, solar is one of the major growth segments globally with

almost 30 per cent of all investments in the sector going towards solar energy. The Indian solar industry, which is in the nascent stage, holds huge potential[10] and it is considered a highly growing market. The domestic solar equipment industry is grappling with tough domestic market conditions, mainly due to cheaper imports from China that are adversely impacting local players. Facing cheaper imports from foreign players, BHEL has not succeeded to secure a high market share. However, with a massive thrust on GOI, Jawaharlal Nehru National Solar Mission and several promotional incentives such as American-style tax holidays, 100 per cent accelerated depreciation and concession in custom duty, all promoted by the Ministry of New and Renewable Energy, help this solar energy sector create huge growth potential for BHEL.

In 2011, the state-run Centre for Wind Energy Technology reassessed India's wind power potential as 102,778 MW, which, if fully developed, would provide only about 8 per cent of the projected electricity demand in 2022 and 5 per cent in 2032[11]. However, the zero carbon footprint potential and the opportunities arising out of this business are attractive. BHEL has a presence in this field and has acquired the technology for wind electric generators from M/s. Nordex SE, Germany. With renewed interest in non-conventional energy and its growing market, this is another growth area for BHEL in the future.

- *Industrial sector:* The industrial equipment sector, consisting of motors, switchgears, defence supplies, control system and instrumentation SBUs, with supplies to industries, most notably steel, refinery, cement and petrochemical industry, comprises 62 per cent share of the industry sector of BHEL. This sector has recorded a reduced growth rate of 9.2 per cent compared to previous years, but BHEL still holds a healthy market share of around 70 per cent in these SBUs. BHEL is also looking to expand on its business in the water treatment and pollution abatement segments such as flue gas desulphurisation.
- *Refineries and cement sector:* The cement sector does not have an individual player who accounts for more than 12 per cent of market share, but the growth of the cement sector has dropped to 10.43 per cent. Hence, BHEL with a small market share in a slow growth market is a dog SBU[12].

  The refineries SBU holds a good share of the market and it is growing rapidly in India at 62 per cent.
- *Oil and gas sector:* The oil and gas sector is growing by 45 per cent and the major contribution is the gas sector. As BHEL is one of the oldest producers of drilling equipment, it has a good market share in its supply. But, due to inexpensive and technologically superior equipment supplied from the international community, BHEL has lost significant market share in the past two to three years.

Growth of BHEL: scenario analysis

Pre-liberalisation era (1970s-1990s)

In the era of pre-liberalisation, BHEL enjoyed the monopoly, with complete state protection. Foreign suppliers thus had no choice but to share technology with BHEL to gain access to the Indian market. Over the span of 30 years, the turnover grew from INR 78 crore in 1970-1971 to levels of INR 3,154 crore in 1990-1991 (Exhibit 2 and 3).

Post-liberalisation era (Phase 1: 1991 to 2000)

The monopolistic environment resulted in inefficiencies in the organisation, operation and planning. Over a period, excessive government protection caused management at BHEL to be complacent and uncompetitive.

When the economy opened up, the company was unprepared to face the onslaught of global players in terms of efficiency and technological expertise. The company attempted to stand on its own, but was bogged down by years of protectionism resulting in a

plummeting market share in the power sector with a decrease from 85-90 to 60-70 per cent in the Indian market.

While globalisation has forced BHEL to test the market on its own, it has also brought a plethora of new opportunities. With funds flowing into the country, the Indian economy has followed a high growth trajectory that requires an expeditious power generation capacity.

The pressure was on BHEL to reform and gain a portion of the increasing opportunities available and several projects were initiated. The pressure to compete and survive the onslaught compelled BHEL to reposition itself in the Indian market and rejuvenate its existing portfolio and operations to combat new competition and instigate its growth in the deregulated environment.

BHEL had to compete with the global multinational players within its territory, while it began investigating overseas opportunities. Product profile was re-evaluated and unprofitable products were made redundant and new products being developed to adapt to the changing environment. Modernisation of their star products was undertaken to remove obstacles while retaining a competitive advantage to meet the needs of the market.

The organisational set up was simultaneously restructured to weed out the inefficiencies and a complete re-organisation was conducted to elevate competent people into the decision-making process.

The pressure on BHEL was equally visible in the turnover which rose merely to INR 6,348 crore by 2000-2001, i.e. doubling in ten years (Exhibit 2 and 3).

Post-liberalisation era (Phase 2: 2000 to 2010-2012)

With continued economic growth, the need to strengthen the infrastructure in the country gained paramount importance. The basic aim was to provide uninterrupted electricity to match the increasing demands of the industry. To accelerate the growth, the GOI laid emphasis on public-private partnership to promote efficient and rapid growth of the power sector with the aid of large private investments. The GOI enacted the Electricity Act 2003, proposing sweeping changes in Generation, Transmission and Distribution Laws providing extensive powers to the regulators and producers (www.cea.nic.in). The Act allowed captive power plants to sell additional capacity through provisions of open access. It also permitted merchant generating units to provide electricity directly to industrial consumers.

The impetus was seen with the GOI setting up an ambitious target of doubling its power generation capacity to 100,000 MW by the end of the 11th Five-Year Plan (2007-2012) (dipp.nic.in/English/Investor/Investers_Gudlines/Power.pdf).

BHEL, with its annual manufacturing capacity of 6,000 MW per annum, was unprepared to meet this challenge. Moreover, the company was slow to react to the changing needs of the market. During this period, the order book overflowed well beyond its execution capacity.

Sensing the business opportunity, albeit delayed, BHEL decided to augment its manufacturing capacity initially to 10,000 MW and later to 15,000 and 20,000 MW in phases (www.assocham.org/events/recent/event_387/P_K_Aggarwal.pps).

The implementation of capacity augmentation was, however, delayed, resulting in the delayed execution of the projects by BHEL (www.kpmg.de/docs/PowerSector_2010.pdf). This prompted power producers to look for alterative suppliers to meet the demand.

The strong demand growth in the country has led to increased competition from manufacturers based in China (including Shanghai Electric, Donfang Electric Group and Harbin Power Equipment), due to faster delivery of equipment and lower cost of sourcing. The prices quoted by Chinese manufacturers were below INR 2 crore/MW compared to price range of INR 2.8-3.2 crore/MW of domestic original equipment manufacturers (www.pwc.com.au/asia-practice/.../Opportunities-Challenges-India-2012.pdf). Importing equipment also provided developers an opportunity to tap into the export credit market for

equipment financing at extremely competitive rates. The Mega Power Policy of GOI has provided waiver of customs duty on import of supercritical equipment, putting domestic manufactures like BHEL at disadvantage *vis-à-vis* imported sets.

With reduced delivery time and the availability of cheap financing from their banks, the Chinese suppliers have become the leaders of the industry. The Chinese players, who had little or no presence a few decades ago, have taken 50 per cent of the market share from BHEL. Other global players who had been monitoring the Indian market for some time, encouraged by the government initiatives in the power sector, entered into partnerships with local companies, setting up competing manufacturing facilities. As a result, some of the previous technology providers/collaborators with BHEL became overnight competitors of BHEL:

- Alstom, who long collaborated with BHEL for supercritical boilers on an exclusive basis, has announced its intent to form 50:50 joint venture with Shanghai Electric in China to address the global market including India[13].
- SIEMENS, Germany, has similarly entered into memorandum of understanding (MOU) with Larsen & Toubro (L&T) for their advanced class gas turbine and steam turbine for combined cycle power plant (CCPP), because a more efficient steam turbine support for CCPP may not be available to BHEL in future.
- GE, USA, who is presently a collaborator of BHEL's with advanced class gas turbines, has announced plans to set up a manufacturing facility for gas turbines and matching steam turbines, CCPP-based steam turbines and a manufacturing facility for supercritical turbines.
- Despite this influx, BHEL continues to grow at a healthy rate, quadrupling its turnover in just six years (Exhibit 2 and 3).

Present era (2011-2012 to present day)

The global recession during the FY 2008-2009 has hit the global economies badly, adversely affecting the growth prospects of companies. As companies worked to survive, or at the very least remain profitable, they instituted severe measures to close down or realign businesses and operations and implement severe cost compression measures. Jobs were lost and savings were wiped out, while purchasing power crumbled and customer confidence wilted.

The Indian economy faced the adverse impact of the global recession with reduced GDP growth, inflationary pressures and heightened liquidity crisis. BHEL was impacted by the recessionary cycle and its problems multiplied, as power generating companies and firms producing cement and steel are slowing down their projects.

Resultant inventories piling up, payments delayed, revenue and profits remaining stagnant

BHEL, for the first time in many years, reported a negative cash flow from operations in the FY 2011-2012[14]. Its cash balance also fell to INR 7,732 crore in the FY2012-2013. The debt:turnover ratio in the financial year ending March 2013 stood at 290 days compared to 264 days in the comparable period in the previous financial year ending March 2012 (Figure 1) (www.infraline.com/displayplus.aspx?id=22)[15].

The new orders received since FY 2011-2012 have dipped dramatically[16] against the order booking in excess of INR 50,000 crore per year, the fresh order booking in past two years is INR 22,096 crore and INR 31,650 crore. Though, at present, the company boasts of an order book of INR 108,600 crore (as of 30 June 2013[17]), which is roughly two times its current turnover, but order book looks healthy because the firm received orders before the competition began to surface.

Power companies have cancelled or put on hold about INR 6,000 crore (www.financialexpress.com/news/despite-investment-panel-push-14-power-projects-yet-to-see-light-of-day/1151127/3) worth of equipment orders between January 2012 and December 2012, leaving domestic equipment suppliers distressed, as very few contracts have been awarded in the current fiscal year. The trend in new orders flows and progress of existing projects has started reflecting its growth. Inventory levels are moving north, clients are delaying payments and the negative development has led to higher working capital requirements for the power equipment supplier. In the FY 2012-2013, the working capital requirement increased by almost 35 per cent to about INR 24,273 crore compared to the FY 2011-2012[18].

The company recently has been forced to deliberately withhold dispatches of finished equipment to some of its buyers during the past quarter, ostensibly to exert pressure on them to make payments. Huge pending receivables, piling inventories and depleting orders have forced the company to reduce its capacity utilisation to 60-70 per cent (www.indianexpress.com/news/bhel-reduces-capacity-utilisation-by-6070-/1058887).

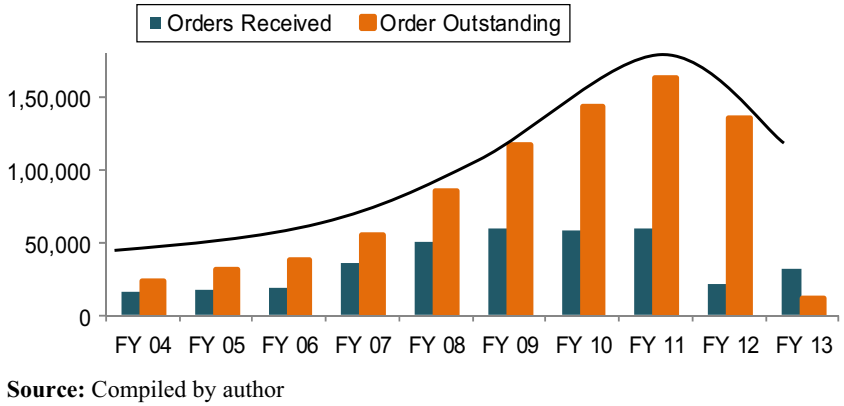
What lies ahead?

Compounding these problems are more stringent rules and norms brought about recently by the MoEF[19] over the awards of coal blocks that have left many developers devoid of coal linkages (www.pwc.com.au/asia-practice/india/assets/publications/Opportunities-Challenges-India-2012.pdf). Even state GENCOs[20] are repeatedly under pressure due to lack of adequate and timely supply of fuel. The recent change in international markets, most notably the enactment of the new mining laws in Indonesia, has significantly impacted the cost of imported coal for Indian companies, many of which were relying on supply of coal from this Southeast Asian nation. As a result, securing fuel from imported coal markets is becoming increasingly costly and uncertain.

A lot of projects are either being cancelled or delayed due to non-availability of land or difficulties in land acquisition. Another major hurdle post-identification and selection of land is securing the required clearances. There are a number of clearances required from the MoEF, Ministry of Aviation, Department of Forests and other government bodies.

Coal shortages, scams, hike in prices of imported coal, lack of land availability, shortage in supply of equipment for new capacities and policy logjam have together paralysed the prospects of the power sector in India over the past two years. So much so that the sector that dominated the bulk of the five-year plan infrastructure outlays for decades, is now forbidden.

Figure 1 Trends of order booking and order outstanding



Source: Compiled by author

Will BHEL be able to overcome present onslaught as it has successfully done in the immediate aftermath of liberalisation in 1991-1992, or will it became another blight on the Indian tax payers' money?

Keywords:
Growth,
Financial model,
Infrastructure,
Leverage,
Social welfare,
Public-private partnership

Financial analysis

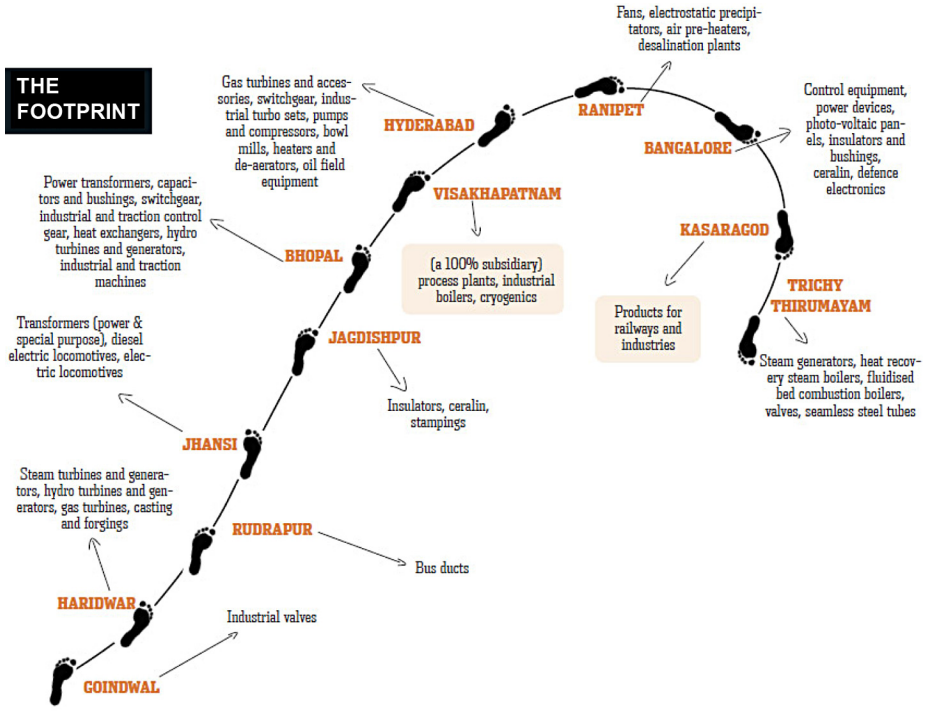
A major Unique selling proposition (USP) of BHEL is its continued reliance on equity funds as a means to growth. The finance charges are minimal and the company is presently operating as per a conservative capital structure (Exhibit 2).

Notes

1. Union of Soviet Socialist Republic (USSR).
2. Annual Report 2012-2013: Company Profile.
3. Maharatna Scheme was introduced for Central Public Sector Enterprises (CPSEs), with effect from 19 May 2010, to empower mega CPSEs to expand their operations and emerge as global giants. The objective of the scheme is to delegate enhanced powers to the boards of identified large-sized Navratna CPSEs, so as to facilitate expansion of their operations, both in domestic as well as global markets. As of February 2013, there are only seven PSUs. BHEL was granted Maharatna status in February 2013.
4. Central Public Sector Enterprises: Companies where the direct holding of the Central Government or of other CPSEs is 51 per cent or more. As of this day, 67.72 per cent of shares of BHEL are held by the President of India (Annual Report 2011-2012, Share Capital page 108).
5. Synonym: massive, gigantic.
6. www.frontlineonnet.com/fl1423/14230780.html
7. Electrical Machinery: Market & Opportunities: www.ibef.org/download/Electrical_Machinery_100708.pdf
8. BHEL Annual Report 2011-2012, p. 10.
9. Vision 2020-Indian Railways: available at www.indianrailways.gov.in
10. ISA-NMCC report on Solar photo voltaics (PV): www.nmcc.nic.in/pdf/isa_nmcc_september2008.pdf
11. India Wind Energy Outlook &vbar 2012: www.gwec.net/wp-content/uploads/2012/11/India-Wind-Energy-Outlook- 2012.pdf
12. A Dog is a business unit that has a small market share in a mature industry. A dog may not require substantial cash, but it ties up capital that could better be deployed elsewhere.
13. Fiscal Year 2010/2011 – Annual Results – Management report – Alstom.
14. BHEL Annual Report 2012-2013: Cash Flow Statement, p. 105.
15. BHEL Annual Report 2011-2012: p. 28.
16. BHEL Annual Report 2012-2013: p. 16.
17. Transcript of the Conference Call on August 03, 2013, available at www.bhel.com
18. BHEL Annual Report 2012-2013: Ten Year Summary, p. 262.
19. Ministry of Environment and Forest.
20. Power Generation Companies, in short GENCOs.

Exhibit 1

Figure E1 BHEL footprint



Source: Author's concept of product profile and manufacturing facility

Exhibit 2

Figure E2 Financial statements (growth profile)

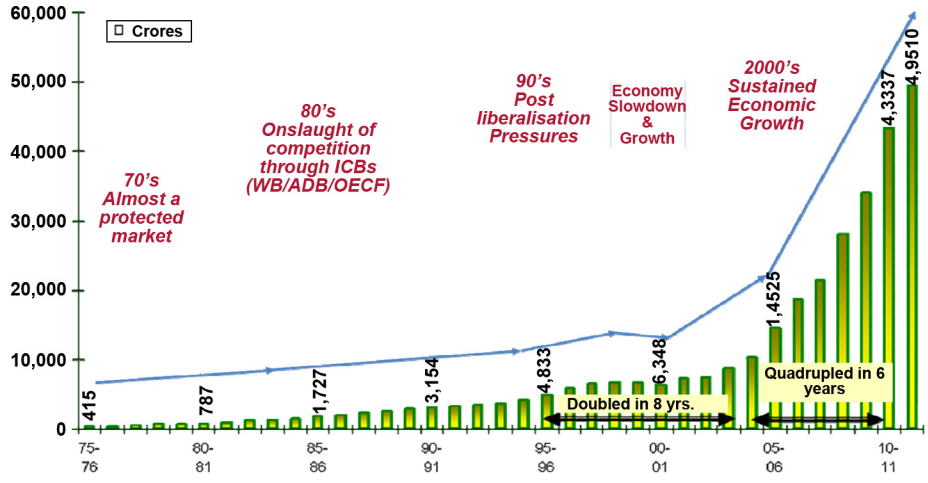
All Values in INR Crores

	As on									
	Mar '13	Mar '12	Mar '11	Mar '10	Mar '09	Mar '08	Mar '07	Mar '06	Mar '05	Mar '04
Sources Of Funds										
Total Share Capital	490	490	490	490	490	490	245	245	245	245
Reserves	29,955	24,884	19,664	15,428	12,449	10,285	8,544	7,057	5,782	5,051
Networth	30,444	25,373	20,154	15,917	12,939	10,774	8,788	7,301	6,027	5,296
Total Debt	1,415	123	102	128	149	95	89	558	537	540
Total Liabilities	31,859	25,497	20,256	16,045	13,088	10,869	8,878	7,860	6,564	5,836
Application Of Funds										
Net Block	4,458	4,297	3,401	2,415	1,470	981	988	982	1,044	1,094
Capital Work in Progress	1,172	1,348	1,734	1,550	1,213	658	307	191	98	110
Investments	429	462	439	80	52	8	8	8	9	29
Inventories	11,764	13,445	10,852	9,235	7,837	5,736	4,218	3,744	2,916	2,104
Sundry Debtors	29,234	26,336	20,104	20,689	15,976	11,975	9,696	7,168	5,972	4,608
Cash and Bank Balance	7,732	6,672	9,630	865	1,951	1,511	2,069	1,484	1,393	1,505
Total Current Assets	48,730	46,453	40,586	30,789	25,763	19,222	15,982	12,396	10,281	8,217
Loans and Advances	15,339	14,217	13,101	4,801	4,617	7,366	5,518	4,186	1,921	1,693
Fixed Deposits	-	-	-	8,925	8,364	6,875	3,740	2,650	1,785	1,155
Total CA, Loans & Advances	64,069	60,670	53,686	44,516	38,744	33,463	25,240	19,233	13,987	11,065
Current Liabilities	29,327	33,638	31,408	28,098	23,415	16,633	11,957	8,905	7,249	5,340
Provisions	8,942	7,641	7,597	4,418	4,976	7,609	5,708	3,649	1,325	1,140
Total CL & Provisions	38,269	41,279	39,004	32,516	28,391	24,242	17,666	12,554	8,574	6,480
Net Current Assets	25,800	19,391	14,682	12,000	10,353	9,222	7,574	6,678	5,413	4,586
Miscellaneous Expenses	-	-	-	-	-	-	-	-	-	18
Total Assets	31,859	25,497	20,256	16,045	13,088	10,869	8,878	7,860	6,564	5,836
Profit & Loss Statement										
Total Income	49,430	50,068	43,395	35,099	28,790	21,392	18,027	14,169	10,439	8,021
Total Expenses	38,919	38,895	33,789	27,914	23,581	16,622	13,999	11,604	8,875	7,152
Operating Profit	9,390	9,907	8,585	6,099	4,185	3,747	3,545	2,224	1,303	854
PBDIT	10,512	11,173	9,606	7,185	5,208	4,770	4,028	2,566	1,563	869
Interest	125	51	55	34	31	35	43	59	81	60
PBDT	10,386	11,122	9,551	7,151	5,178	4,734	3,984	2,507	1,482	809
Depreciation	953	800	544	458	334	297	245	246	219	198
Profit Before Tax	9,433	10,322	9,007	6,693	4,844	4,437	3,740	2,261	1,263	611
Extra-ordinary items	-0	-19	-2	46	97	-13	-14	300	307	397
PBT (Post Extra-ord Items)	9,432	10,302	9,005	6,740	4,940	4,424	3,726	2,561	1,570	1,007
Tax	2,818	3,262	2,994	2,326	1,799	1,565	1,311	882	616	349
Reported Net Profit	6,615	7,040	6,011	4,311	3,138	2,859	2,415	1,679	953	658

Source: Author's compilation based on information available in public domain

Exhibit 3

Figure E3 Growth profile



Source: Author's compilation based on the turnover information available in public domain and own analysis

About the author

Monica Singhania is Associate Professor, Faculty of Management Studies (FMS), University of Delhi. She is a graduate from Shri Ram College of Commerce, postgraduate from Delhi School of Economics and a Fellow Member (FCA) of the Institute of Chartered Accountants of India. She has the distinction of being placed in the merit list of the examinations conducted by both the University as well as the Institute. She has been awarded PhD in the area of corporate finance and taxation from the University of Delhi. She is the author of seven books on direct tax laws and several research papers published in leading journals. She teaches management accounting, management control systems, project management and corporate taxation to MBA students at FMS. Monica Singhania can be contacted at: monica@fms.edu