

Chapter**III****Business Environment and Emerging Markets****3.1 Change in business environment and emerging market of BHEL**

While preparing its Strategic Plan for the period 2012-17, BHEL had assessed (November 2011) that there would be a definite change in its business environment. From the second half of financial year 2010-11, investment sentiments had dampened due to slow down in project finalisation, coal availability for existing and new projects, poor financial position of State Electricity Boards (SEBs) etc. It was also acknowledged that the past decade ending 2010 had posed challenges to BHEL in the form of (a) climate change; (b) increase in intensity of competition with emergence of new competitors; and (c) squeezed delivery schedules.

3.1.1 Climate change

With growing environmental concerns, the Central Electricity Authority (CEA) recommended (November 2003) adoption of larger unit size of 800-1000 MW with supercritical parameters, visualising that adoption of large size units would provide much needed fillip to the pace of thermal capacity addition and would also result in reduced impact on environment due to efficiency enhancement. During that time, BHEL did not have experience in supercritical technology. Further, as per commitment under United Nations Framework Convention on Climate Change (UNFCCC), GoI adopted (June 2008) a National Action Plan on Climate Change (NAPCC) which stressed the need to launch a National Solar Mission to significantly increase the share of solar energy in total energy mix. Accordingly, GoI launched (January 2010) Jawaharlal Nehru National Solar Mission (JNNSM) with ambitious target of adding 20000 MW solar power capacity by 2022. This target was subsequently enhanced (June 2015) to 100000 MW. Capacity of BHEL in the area of solar power was limited.

3.1.2 Increase in competition

Consequent upon decision of CEA to adopt higher unit sizes with supercritical technology, a number of Indian companies formed joint ventures⁸ (JVs) with supercritical technology providers and established manufacturing facilities in the country. This pointed to more intense competition in future.

3.1.3 Squeezed delivery schedule

The average commissioning schedule of BHEL for a typical 500 MW project was 47 months which was higher than the Central Electricity Regulatory Commission (CERC) norm of 42 months. However, other suppliers were able to adhere to the CERC stipulated norm. These suppliers could reduce erection time by supplying prefabricated structures while BHEL used welding of structures which involved delays as well as quality issues.

Ministry stated (May 2017) that BHEL has been making necessary improvements in erection area and adopting new innovative practices. It has also adopted bolted and prefabricated structures in the recent supercritical sets of 660/800 MW.

⁸ (i) L&T-MHI, (ii) Alstom-Bharat Forge, (iii) BGR-Hitachi, (iv) Toshiba-JSW, (v) Thermax-Babcock & Wilcox and (vi) Ansaldo-Gammon

3.2 Government support to BHEL

In the same period, GoI supported BHEL through the following decisions:

- (i) In order to help indigenous manufacturers including BHEL, GoI, through CEA, issued (February 2010) an advisory to incorporate the condition of setting up of phased indigenous manufacturing facilities in bids to be invited by Central/State sector Thermal Power Generating Companies. This reduced competition for BHEL from international power equipment manufacturers who were not interested in setting up manufacturing facilities in India.
- (ii) Ministry of Power (MoP) issued (September 2009) directives regarding evaluation and award criteria to be followed for bulk tendering of 11 units⁹ of 660 MW each and nine units¹⁰ of 800 MW each, with assured orders to BHEL even if it was not L1. In both these bulk tenders, BHEL was not L1, but by virtue of these directives, could secure orders for 6500 MW Steam Generator (SG) packages and 4240 MW Steam Turbine Generator (STG) packages valuing ₹16063.34 crore between March 2012 and February 2014.
- (iii) BHEL was granted (February 2013) 'MAHARATNA' status which delegated enhanced powers to BHEL Board to incur capital expenditure on purchase of new item or for replacement without any monetary ceiling; enter technology JVs or strategic alliances; obtain technology and know-how by purchase or other arrangements; make equity investment to establish financial JVs and wholly owned subsidiaries; and undertake mergers and acquisitions in India or abroad.

Ministry stated (May 2017) that the condition of phased indigenous manufacturing facilities was introduced by GoI for fast introduction of supercritical technology. Though BHEL got Boiler and TG packages of two projects through Bulk Tenders, it was not in a position to execute one of the projects (Raghunathpur Project) as the project was put 'on-hold'. Thus, the project has not contributed to BHEL's turnover or profitability. It is also added that all major Original Equipment Manufacturers (OEMs), excluding Chinese companies, have set up the manufacturing facilities and after Bulk Tender, the competition has intensified.

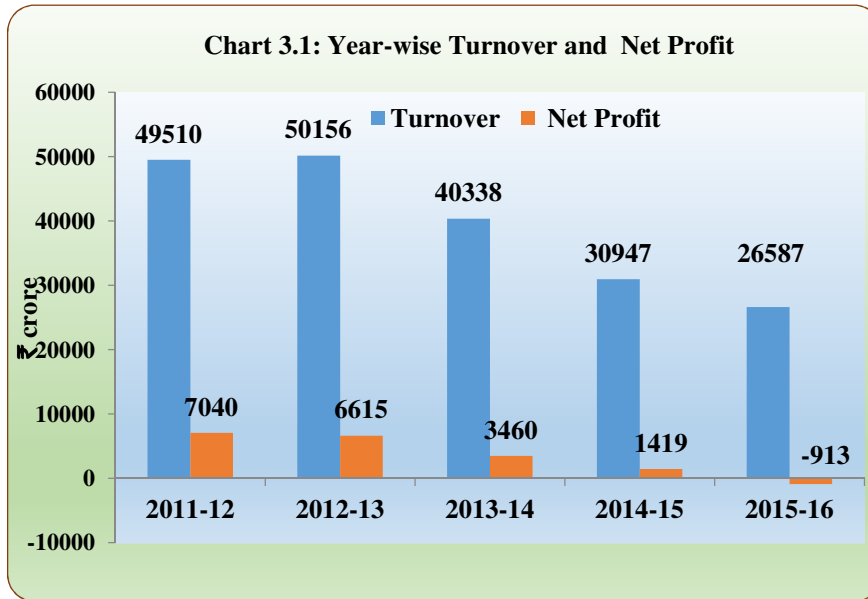
While appreciating that competition intensified with introduction of bulk tenders, the assurance for securing orders by BHEL even when it did not win the bid, supported the Company. In fact, BHEL has already booked a turnover of ₹479 crore from Raghunathpur project up to 31 March 2016 for which it was not the L1 bidder.

⁹ NTPC/Sholapur (2 units), NTPC/Mouda (2 units), Meja-Urja Nigam Private Limited (50:50 JV between NTPC and UPRVUNL)/Meja (2 units), Nabinagar Power Generating Company Private Limited (50:50 JV between NTPC and Bihar State Power Holding Company Limited) /Nabinagar (3 units) and DVC/Raghunathpur (2 units)

¹⁰ NTPC/Lara (2 units), NTPC/Gadarwara (2 units), NTPC/Darlipali (2 units) and NTPC/Kudgi (3 units)

3.3 Impact of changing business environment on BHEL

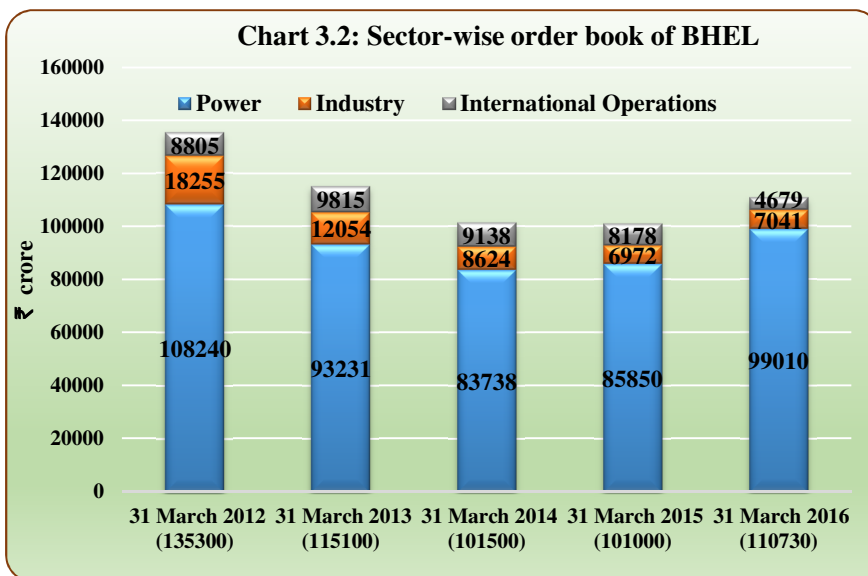
3.3.1 Impact on working results



Power sector continued to account for the bulk (76.46 per cent to 80.53 per cent) of BHEL's turnover during 2011-12 to 2015-16. The Company had not effectively diversified into new/ less operated business areas (as discussed in Chapter IV). Chart 3.1 indicates year wise turnover and net profit of BHEL during five years ended 31 March 2016. BHEL witnessed sharp decline in both turnover and

profitability, with its revenue skewed towards a single segment.

Ministry stated (May 2017) that several attempts were made to diversify the company's product offerings and these efforts were still on going, which were likely to bring positive outcomes in times ahead.



The reply, however, is to be viewed against the fact that BHEL could not implement strategic approaches¹¹ envisaged in Strategic Plan 2012-17 in potential growth areas, viz., transportation, transmission and industrial products.

3.3.2 Impact on order book

Order book or order backlog, which is an indicator of level of customer demand and

future financial stability, declined from ₹135300 crore to ₹101000 crore between March 2012 and March 2015. Though the reported order book position of BHEL improved by March 2016, it included an order worth ₹17950 crore against which no advance had been received. As per the Company's own decision (March 2011), only those orders are accounted for against which initial advances have been received. In fact, the initial advance in respect of this project has not been

¹¹ The Strategic Plan provided for forging global tie-up/JV for Electric Multiple Unit (EMU) / Mainline Electric Multiple Unit (MEMU) / Distributed power trains/ High speed Locos/ Metro projects as well as merger and acquisition for niche technology in transportation business, technology sourcing for Circulating Fluidized Bed Combustion (CFBC) boilers, collaboration for advanced Gas Turbines with higher efficiencies, strategic tie-up for new products, hastening development of 400 kV and 765 kV Gas Insulated Switchyard (GIS) equipment etc.

received so far (March 2017) for want of environment clearance. The chart 3.2 depicts BHEL's total and business sector-wise order book at year end from 2011-12 to 2015-16.

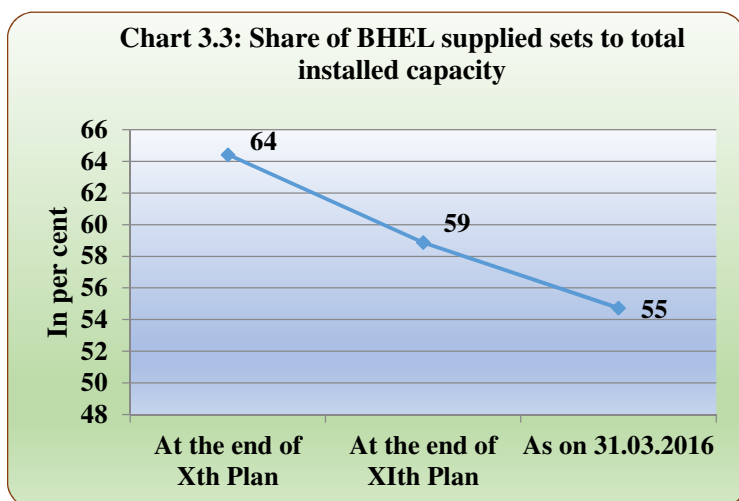
Declining Turnover-Order Book ratio¹² between 2012-13 (37.07 per cent) and 2015-16 (26.32 per cent) indicated that all orders secured by BHEL were not effective orders. It was noticed in Audit that order book of ₹110730 crore as on 31 March 2016 included 'On Hold' projects amounting to ₹50645 crore. Thus, around 45.74 per cent orders included in the order book of BHEL as on 31 March 2016, were non-executable.

Management stated (February 2017) that due to constraints like lack of coal linkage/ coal block allocation, acute shortfall in availability of gas, delay in environment clearance, delay in land acquisition and funds issues, the sector encountered decline in average order finalisation. As a result despite improvement in market share, BHEL's outstanding order book also declined. Management also stated that holds on projects were temporary in nature. Ministry added (May 2017) that efforts were being made to revive the 'on-hold' projects. Post exit conference, Management added (June 2017) that BHEL was focused on reviving the on-hold projects and nine projects with unexecuted order value of ₹17411 crore have been revived till 31 March 2017. With this, the executable order book has increased to ₹65663 crore as on 31 March 2017.

While the efforts at reviving the 'on-hold' projects is appreciated, it needs to be kept in view that dampening investment sentiments had been considered in the Strategic Plan which had intended (November 2011) to focus on diversification in new business areas to maintain the growth path.

3.3.3 Impact on BHEL's share in installed capacity of the country

In the core power sector, BHEL was the leader in the engineering and supply of Drum Type Boilers¹³. With introduction of higher unit size / supercritical technology and enhanced competition (with Indian companies establishing manufacturing facilities in the country in association with



supercritical technology providers), share of BHEL supplied sets witnessed a sustained decline since end of X Five Year Plan as depicted in chart alongside. As on 31 March 2016, in the supercritical segment, against 33 units (including 10 units under four on-hold projects) under implementation by BHEL, 45 units were being implemented by its competitors which may further depress the share of BHEL in its core sector.

Management stated (February 2017) that BHEL has maintained its market leadership in the segment though with rise in competition, it was natural for the share of existing player to fall. Ministry added (May 2017) that during XII Plan period, BHEL achieved capacity addition of 45274 MW, surpassing the target by 9 per cent. BHEL remained the single largest contributor to the country's capacity addition.

¹² Turnover for a year as per cent of Order Book at the beginning of that year

¹³ Drum boilers are also called sub-critical boilers because they have to operate below the critical point of water to make sure that there is a density difference between the steam and water allowing for separation

3.3.4 Impact on market valuation of BHEL

The market valuation of BHEL, which was ₹97940.71 crore at the beginning of April 2011, was reduced to ₹37533.95 crore (as on 16 February 2017) representing a drop by 61.68 *per cent*. Consequently, the market value of GoI holding in BHEL also decreased by ₹38092.50 crore. During the above period, Bombay Stock Exchange (BSE) Capital Goods Index increased from 13255.14 to 15267.22 and BSE PSU index remained almost at the same level¹⁴, but BHEL's share price declined sharply from ₹412.17 per share to ₹153.35 per share.

Ministry stated (May 2017) that because of 'on-hold' power projects already in order book and slowdown in inflow of orders due to policy logjams, like environmental clearances, fuel supply agreements, power purchase agreements etc., the coal-based power plant equipment manufacturers were severely affected and this was reflected in BHEL's share price.

¹⁴ BSE PSU index was 8960.08 at the beginning of April 2011 and 8461.74 as on 16 February 2017