Chapter 2

Historical Perspective
HISTORICAL PERSPECTIVE

2.1 Need, Philosophy and Birth of Public Sector Enterprises

In the seventeenth and eighteenth centuries, the philosophy of Laissez Faire as propounded by the classical economist, dominated economic and political scene of different countries. It was in the nineteenth century that state regulation and control started to be imposed on economic activities. With the passage of time, it was recognised that mere regulation and control was not sufficient to implement government policies and programs effectively. Consequently, the governments started to participate in business and by the twentieth century and public enterprises became a common phenomenon. Gradually, the public enterprises have extended their tentacles over the ownership of means of production and distribution irrespective of the nature of the economy or the stage of development Prakash et al\(^{20}\).

In the Indian context; states intervention of the active kind has become the cardinal feature of the Indian economy since the end of the British colonial rule. Earlier, the policy of the British government ruling in India was to maintain India as a predominantly agricultural colony and to exploit it as its colony. The construction of an extensive network of railways and irrigation work was designed mainly to transform India into an agricultural colony of the British Industry and to fulfill certain political ends. During the First World War, there was a desire to enlist support to Indian industries when the fighting strength of the allied forces was weakened due to non-availability of military supplies. “During the inter war period, although the government adopted a policy of limited industrialism, political and constitutional

situation entailed the government of India for giving more weight in formulating its proposals to British interests" Khera\textsuperscript{21}. The state monopoly enterprises like Railways and Posts and Telegraphs, etc., were administered by the government to suit the interests of British capitalism. The establishment of Board of Industrial and Scientific Research in 1940, Reconstruction Committee in 1941 and Planning and Development Division in 1944 gave a momentum to the industrial development of India. This marked the state interference in the industrial development of the country Prakash et al\textsuperscript{22}.

The birth of the Public Sector Enterprises in India took place in the third and the fourth decades of the nineteenth century. In the early days, the government’s effort was concerned with the lines of communication which was extended more or less keeping in pace with territorial expansion of British rule in the country.

On the dawn of Indian independence the condition of Indian Economy was in a pitiable shape. The Indian planners realised that massive investment was need in infrastructural sector to mend the condition of the economy. On the 21st of April, 1945 the Planning and Development Division issued a policy statement specifying a crucial role for the industrial development of the country. “Certain industries may be taken under central control in the interests of coordinated development. Government should play an active part in the industrial development of the country” Indian Policy Statement\textsuperscript{23}. It was also stated in the policy statement that basic industries of national importance might be nationalised provided adequate capital was not forthcoming or it was regarded essential in the national interests to promote these industries.

\textsuperscript{23} Government of India (1945), Indian Policy Statement, dated the 21st of April, 1945.
In Industrial Policy Resolution\textsuperscript{24} the role which the state had to play in the economic life of the country was defined in the statement in the following words; “there can be no doubt that the state must play a progressively active role in the development of industries but ability to achieve the main objectives should determine the immediate extent of state responsibility and the limits to private enterprise”. It was stated in the statement that the manufacture of arms and ammunition, the production and control of atomic energy, the ownership and management of railways transport would be the exclusive monopoly of the central government. In case of coal, iron and steel, aircrafts, ship building, manufacture of telephone, telegraph and wireless apparatus excluding radio receiving sets, mineral oils, the state will be exclusively responsible for the establishment of new undertakings. The state would always have an inherent right to acquire any existing undertaking in public interest. But the existing units in the above fields were allowed to operate for a term of ten years and thereafter the whole matter is reviewed for acquisition. In the last category eighteen industries were listed which were subject to central regulation and control in as much as “there location must be governed by economic factors of all India importance” or they “require considerable investment and a high degree of control”. The other industries were left to be developed in the private sector. Here also “the state will progressively participate in this field nor will it hesitate to intervene when ever the progress of industry under private enterprise is unsatisfactory”. The approach of the government was realistic in this policy statement to achieve the basic objectives of maximum protection, full employment and social justice and the state was assigned a progressively increasing role. But the resolution was not clear and definite as regards to the areas of the private sector.

By 1954 the social thinking of mixed economy was diverted into

\textsuperscript{24} Government of India (1948), Industrial Policy Resolution, dated the 6\textsuperscript{th} of April, 1948.
socialist pattern of society. In Industrial Policy Resolution\textsuperscript{25} 1956 the directive principles of state policy stated that “the state shall strive to promote the welfare of the people by securing and protecting as effectively as it may be a social order in which justice, social, economic and political shall inform all the institutions of the nation life”.

The main objectives of the new policy resolution were:

1. To accelerate the rate of economic growth and speed up industrialisation.
2. To develop heavy industries and machine making industries.
3. To expand the public sector.
4. To build a large and growing cooperative sector.
5. To reduce disparities in income and wealth and.
6. To prevent private monopolies and the concentration of economic power in different fields in the hands of a few individuals.

“All industries of basic and strategic important in the nature of public utility, services should be in the public sector. Other industries which are essential and require investment on a scale which only the state in present circumstances could provide have also to be in the public sector”. The industries had been broadly classified into three categories. Industries in the first categories had been listed in schedule ‘A’ of this resolution which included the industries of arms and ammunition; atomic energy; iron and steel; heavy castings and forgings of iron and steel; heavy plant and machineries for basic industries; heavy electricals plants; coal and lignite; the mineral oils; mining and processing of copper, lead, zinc, tin, chrome ore, sulphur etc.; aircrafts; air and railways transport; ship building; generation and distribution of electricity and tele-communication equipments.

\textsuperscript{25} Government of India (1945), Resolution of Indian Policy, dated the 30\textsuperscript{th} of April, 1956.
In the second category there were twelve industries listed in schedule 'B' which would be progressively state owned and in which the state would generally take the initiative in establishing new undertakings. In this category the private sector was also allowed to develop industrial enterprises of its own or with state participation. The third category compromised all other industries not listed in schedule 'A' and 'B'. They had in general, been left to the initiative and enterprise of the private sector. It had, however, been made clear in the resolution that the state would be free to start any industry in this category. The state would continue to provide increased financial assistance and special assistance would be given to enterprises organised on cooperative lines. The private sector would be subject to control and regulation in terms of industries (Development and Regulation) Act to fit into the framework of the social and economic policy of the state.

On the basis of the directives of the Planning Commission; massive investment in the public sector was made in the five years plans. In the first five year plan 46.4% of the total investment was made in the public sector. Subsequently; in the first eight five years plan, the percentage share of the public sector investment as compared to the total investment did not come down significantly Cherunilam\textsuperscript{26}.

2.2 Profile of Bharat Heavy Electricals Limited

Bharat Heavy Electricals Limited (BHEL) is the largest engineering and manufacturing enterprise of its kind in India and is one of the leading companies in the field of production of power generation and transmission equipments in the world.

The History of BHEL can be traced back to the post independence

era when India was moving towards industrialisation. The thrust of the planners was to develop the core sectors of the Indian economy and this job was assigned to the public sector. Need was felt to develop the heavy electrical industry in India. With this objective in mind Heavy Electricals (1) Limited was set up at Bhopal in 1956, which signalled the dawn of the Heavy Electrical Industry in India. In the sixties, three more major plants were set up at Haridwar, Hyderabad and Tiruchirapalli with Soviet and Czechoslovakian assistance in May 1956, December 1965 and January 1967, respectively. As there was a need for an integrated approach for the development of power equipment to be manufactured in India, Heavy Electricals Limited, Bhopal was merged in BHEL in 1974.

BHEL today has 14 manufacturing units, 4 power sector regions, 8 service centers and 18 regional offices, besides project sites spread all over India and abroad. The manpower strength of the Company as on 31.03.2006 was 42601. It has a well recognised track record of performance, making profits continuously since 1971-72 and paying dividends since 1976-77. BHEL manufactures over 180 products under 30 major product groups and caters to core sectors of the Indian economy. The quality and reliability of its products is due to the emphasis on design, engineering and manufacturing to international standards by acquiring and adapting some of the best technologies from leading companies in the world, along with technologies developed in its own R&D centers.

BHEL has attained ISO 9000 certification for quality management and all its manufacturing units and divisions have been upgraded to the latest ISO 9001-2000 certification. BHEL has also secured ISO 14001 certification for environmental management systems & OHSAS-18001 certification for occupational health and safety management systems for all its major units and divisions. BHEL is continuing its journey towards business excellence. BHEL has committed to support the Global Compact & the set of core values enshrined in its ten
principles in the areas of human rights, labour standards and environment.

BHEL has plans to invest more than Rs.12000 million during the 10th plan period on product development in the Units and for erection and commissioning of power equipments at various power plant sites facilities. During the first four years of the 10th plan, about Rs.7200 million of capital expenditure has already been made for all these areas. Further investment of about Rs.4800 million is expected to be made in the financial year 2006-07.

BHEL’s VISION

BHEL’s vision is to become a world class engineering enterprise committed to enhancing stakeholder value and the company is striving to achieve this visualization.

BUSINESS AREAS:

BHEL offers wide variety of products and services; which find application in various industries. Some of the major customers come from the following industries:

POWER GENERATION

Power Generation is the focal area for BHEL. It has taken India from a position of total dependence on overseas supplies to complete self-reliance in this area. Out of installed capacity of 1,18,561 M.W., BHEL manufactured sets produce 76,741 MW or nearly 65 percent of the total installed electric power production capacity of the country.

BHEL manufactured products cater to the demands of thermal, gas, hydro and nuclear power plants. It has proven turnkey capabilities for executing power projects from concept to commissioning. The State
Electricity Boards, National Thermal Power Corporation, National Hydro Electricity Power Corporation, Nuclear Power Corporation are some of its major customers.

Thermal Power Generation: It possesses the technology and capability to produce thermal power generation sets with super critical parameters up to 1000 MW unit rating. Cogeneration and combined cycle plants have been introduced by BHEL to achieve higher plant efficiencies. To make efficient use of the high ash content coal available in India; BHEL also supplies circulating fluidised bed combustion boilers for thermal plants.

Gas based Power Generation: In gas based power generation, it has the capacity to manufacture turbine generator sets of up to 240 MW unit rating. BHEL has till date booked orders for 85 gas based generator sets and has supplied generator sets upto capacity rating of 150 MW.

Nuclear Power Generation: BHEL manufactures nuclear power generator sets of capacity ratings from 220 MW to 540 MW. This product category is of crucial importance as future demand for nuclear power generator sets is expected to increase.

BHEL has already received orders for more than 880 utility sets for generation of thermal, hydro, gas and nuclear power. The Company also has proven expertise in plant performance improvement through renovation, modernisation and uprating of a variety of power plant equipment, besides specialised know on residual life assessment, health diagnostics and life extension of power plants.

POWER TRANSMISSION

BHEL supplies a wide range of products and systems for transmission and distribution applications. The products
manufactured by BHEL include power transformers, instrument transformers, dry type transformers, shunt reactors, capacitors, vacuum and SF6 switchgear, gas insulated switchgear, ceramic insulators, etc. BHEL has developed and commercialized the country’s first indigenous 36 kV Gas Insulated Substation (GIS) and has also developed 145 kV GIS which has undergone successful field trials at Hyderabad.

For enhancing the power transfer capability and reducing transmission losses in 400 kV lines, BHEL has indigenously developed and executed fixed series compensation schemes and has developed thyristor controlled series compensation scheme, involving thyristor controlled reactors, popularly known as (FACTS). BHEL has indigenously developed state of the art controlled shunt reactor for reactive power management of long transmission lines. With a strong engineering base, the company undertakes turnkey execution of substations up to 400 kV and has capability to execute 765 kV substations. High Voltage Direct Current (HVDC) systems have been supplied for economic transmission of bulk power over long distances. Some of the major customers include state electricity boards, NTPC, Rashtriya Ispat Nigam Limited, Indian Organic and Fertilizer Limited, etc.

OTHER INDUSTRIES

BHEL manufactures and supplies major capital equipment and systems like captive power plants, centrifugal compressors, drive turbines, industrial boilers and auxiliaries, waste heat recovery boilers, gas turbines, pumps, heat exchangers, electric machines, valves, heavy castings and forgings, electrostatic precipitators, ID/FD fans, seamless pipes etc. These serve a number of industries like metallurgical, mining, cement, paper, fertilizers, refineries and petrochemicals, etc. BHEL has also emerged as a major supplier of controls and instrumentation systems, especially distributed digital control systems for industries. Some of the major customers of BHEL in this
area are National Aluminium Company, Hindustan Fertilizer and Company Limited, Hindustan Paper Corporation, Indian oil, etc.

OIL & GAS

BHEL is supplying equipment for onshore drilling rigs viz. drawworks, rotary-table, travelling block, swivel, mast & sub structure, mud systems and rig electrics and Xmas tree valves & well heads up to a rating of 10,000 PSI. BHEL has also supplied Casing Support System, Mudline Suspension System & Block Valves for offshore applications. It has the capability to supply complete on-shore drilling rigs, super deep drilling rigs, desert rigs, mobile rig, workover rigs and sub sea well heads. Some of its major customer are Oil India Ltd., Gas Authority Of India, Oil & Natural Gas Commission, etc.

TRANSPORTATION

Most of the locomotives of the Indian Railways, whether electric or diesel are powered with BHEL’s traction propulsion systems and controls. The systems supplied are both with conventional DC drives and state of the art AC drives. India’s first underground metro at Kolkata runs on drives and controls supplied by BHEL. The company also manufactures complete range of locomotives i.e. electric locomotives up to 5000 HP, diesel electric locomotives from 350 HP to 3100 HP for both mainline and shunting duty applications. Further BHEL undertakes retrofitting and over hauling of locomotives. In the area of Urban transportation, BHEL is geared up for turnkey execution of electric trolley bus systems, light rail systems and metro systems. BHEL is contributing to the supply of electrics for EMUS for 1500V DC & 25 kV AC to Indian Railways. Almost all the EMUs in service are with electrics manufactured and supplied by BHEL. BHEL has also diversified into the area of track maintenance machines for Indian Railways. The major customers in the transportation industry are Indian Railways, Port Trust of India, Steel Plants Cement Plants, State Electricity Boards, Urban Transport Authorities, etc.
With the bloom in the tele-communication industry BHEL has also entered this field. It manufactures electronic PBX systems based on indigenous technology from C-DOT.

NON CONVENTIONAL ENERGY

BHEL has been manufacturing and supplying various non conventional / renewable energy systems and products. It includes Solar Energy systems namely PV modules, PV power plants, solar lanterns, street lighting, solar pumps and solar water heating systems. A large number of small hydro sets have also been supplied. The Wind power generation business based on higher rating WEGs is being explored.

EXPORTS

BHEL has supplied its products to over 45 countries and has earned recognition of its quality from them. Almost the entire range of BHEL products and services covering turnkey power projects of thermal, hydro and gas-based power generation, transmission substation projects, rehabilitation projects for boilers, transformers, compressors, valves and oil field equipment, electrostatic precipitators, photo voltaic equipments, insulators, switchgears, heat exchangers, castings and forgings have been exported.

The company is taking a number of strategic business initiatives to fuel further growth in its export business. This includes firmly establishing itself in target export markets, positioning of BHEL as a regular EPC Contractor in the global market and, exploring various opportunities for setting up overseas joint ventures etc.
BHEL has eight after sales service centers in India established in such a way that its customers are provided with effective after sales services. These service centers also provide power plant renovation services also.

RESEARCH AND DEVELOPMENT

The Corporate R&D Division at Hyderabad leads BHEL’s research and development efforts, ably supported by engineering and R&D groups at the manufacturing divisions. BHEL’s technology policy advocates a judicious mix of indigenous efforts and selective collaboration in essential areas. The company is thus able to continuously upgrade its technology and product designs to contemporary standards. BHEL is one of the few companies worldwide involved in the development of Integrated Gasification Combined Cycle (IGCC) technology which would usher in clean coal technology. BHEL has set up Asia’s first 6.2 MW IGCC power plant with an indigenous pressure fluidised bed gasifier. Presently, there are development efforts underway to set up a 125 MW IGCC power plant.

BHEL’s R&D efforts have produced several new products. To optimize power plant operations during varying operating conditions, BHEL has developed an advanced software package for performance analysis, diagnostics and optimisation of power plants.

Three Centres of Excellence for Computational Fluid Dynamics, Simulators and Permanent Magnet Machines have been established at BHEL’s Corporate R&D Centre, Hyderabad, which will enhance BHEL’s design and analysis capability and also lead to development of new products.

Some of the other recent successful R&D products are: High Velocity Oxy Fuel coating process to increase line of hydro turbine
components, and other industrial products prone to erosion; an indigenously designed Bowl Mill of 91 tons per hour capacity for pulverising coal in thermal power stations; the largest size 60 MW e-Bubbling Fluidised Bed Boiler for power generation; a new eco-friendly, cost effective and less hazardous chemical cleaning system process for boilers using an organic chemical ‘Ethylene Diamine Tetra Acetic Acid; a six jet Pelton hydro turbine with a head of 789 metres for the 4200 Parbati hydro electric project; the first total impregnated turbo generator stator for a 250 MW turbo generator; a 260 MW steam turbine designed to suit combined cycle power plant application; Sonic system for detecting tube leaks in boilers; a By-pass Over Fire Air (BOFA) system which reduces NOx emission from coal fired power stations by up to 50%.

MANUFACTURING UNITS OF BHEL

FIRST GENERATION UNITS

Bhopal Heavy Electrical Plant.
Haridwar Heavy Electrical Equipment Plant.
Hyderabad Heavy Electrical Power Equipment Plant.
Tiruchy High Pressure Boiler Plant.

SECOND GENERATION UNITS

Jhansi Transformer and Locomotive Plant.
Haridwar Central Foundary and Forge Plant.
Tiruchy Seamless Steel Tube Plant.

UNITS THROUGH ACQUISITION AND MERGERS:

Bangalore Electronics Division.
                      Electro Porcelain Division.
NEW MANUFACTURING UNITS:

Ranipet          Boiler Auxiliaries Plant.
Jagdishpur       Insulator Plant.
Rudrapur         Component and Fabrication Plant.
Bangalore        Industrial Systems.
IVP Govindwal    Industrial Valves.

**BHEL - JHANSI**

By the end of 5th five-year plan; it was envisaged by the planning commission that the demand for power transformer would rise in the coming years. Anticipating the country’s requirement; BHEL decided to set up a new plant which would manufacture power and other type of transformers in addition to the capacity available at BHEL, Bhopal. The Bhopal Plant was engaged in production of transformers of large ratings and Jhansi unit would concentrate on manufacturing power transformer of capacity ratings from 50 kVA to 132 kVA and other transformers like Instrument Transformers and Traction Transformers.

The unit at Jhansi was established fourteen kilometres away from the city on the national highway number twenty six on Jhansi Lalitpur road. It is the second generation plant of BHEL to be set up in 1974 with an estimated cost of Rs. 16.22 crores including Rs. 2.1 crores for township. Its foundation was laid by Late Mrs. Indira Gandhi; the Prime Minister on 9th of January, 1974. The commercial production of the unit began in 1976-77 with an output of Rs. 53 Lacs since then there has been no looking back for BHEL, Jhansi.

This plant of BHEL is equipped with the most modern processing and testing facilities for the manufacture of power transformer, Instrument transformer, traction transformer, diesel shunting locomotives, A/C locomotives and AC/DC locomotives. The layout of the plant streamlined in such a way that it enable smooth flow of
materials to all stages of production. All the feeder bays have been laid perpendicular to main assembly bay and at each feeder bay; raw material smoothly gets converted to sub assemblies which after inspection are sent to main assembly bay.

The raw materials procured for manufacture are used only after thorough testing in the testing lab and with strict quality checks at various stages of production. This unit at BHEL, Jhansi is basically engaged in the production of transformers of various type and capacities. With the growing competition in the transformer market in 1985-88 it under took the re-powering of diesel locomotives. BHEL, Jhansi has also subsequently installed production capacities for the manufacture of diesel locomotives, AC locomotives and AC/DC locomotives.

GROWTH OF PRODUCTION AND MILESTONES ACHIEVED AT BHEL - JHANSI

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ACHIEVEMENTS</th>
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<tbody>
<tr>
<td>1976-77</td>
<td>Stated production of Instrument Transformers.</td>
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<tr>
<td>1977-78</td>
<td>Stated production of Traction Transformer and Power Transformer (upto 132 kV).</td>
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<td>1978-79</td>
<td>Stated production of HFTT type freight locomotive.</td>
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<tr>
<td>1979-80</td>
<td>Commissioning of 2,500 kV DG Set.</td>
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<td>1980-81</td>
<td>Stated production of ESP transformers.</td>
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<td>1981-82</td>
<td>Stated production of 220 kV power transformers.</td>
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<tr>
<td>1982-83</td>
<td>Achieved Break Even.</td>
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<td>1983-84</td>
<td>Start of Bus-duct</td>
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<td>1984-85</td>
<td>Stated production of dry type transformers.</td>
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<tr>
<td>1985-86</td>
<td>Re-powering of diesel locomotives started.</td>
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<tr>
<td>1986-87</td>
<td>Establishment of diesel locomotive manufacturing facility.</td>
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<tr>
<td>1987-88</td>
<td>Establishment of electric locomotive manufacturing facility.</td>
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<tr>
<td>1988-89</td>
<td>Turnover crossed 100 crore target.</td>
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<tr>
<td>1990-91</td>
<td>Successfully designed and manufacturing of 450 HP 3 axle desil CCI.</td>
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1992-93  Successfully designed and development of 5000 HP thyristor controled locomotive.
1993-94  Award of ISO-9001 certificate for quality systems.
1994-95  Stated production of 240 MVA power transformer.
1995-96  AC/DC locomotive produced for the first time in India.
1996-97  100 th locomotive was manufactured.
1997-98  Stated production of 250 MVA power transformer.
1998-99  Developed and produced overhead equipment cum test car and exported one unit to Malaysia.
1999-00  Stated production of disel hydralic shunter.
2002-03  Stated production of rail cum road vehicle and desil electric power car. Award of EMS 14001 certification from DNV.
2003-04  Award of OHSAS-18002 from DNV. Stated production of BPRV and DG set.
2004-05  Stated production of ship lift system.

**PRODUCT PROFILE OF BHEL JHANSI UNIT**

<table>
<thead>
<tr>
<th>PRODUCTS</th>
<th>SPECIFICATIONS</th>
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<tbody>
<tr>
<td>1. Power Transformer</td>
<td>Upto 220 kV Class 250 MVA</td>
</tr>
<tr>
<td>2. Special Transformer</td>
<td>Upto 110 kV</td>
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<tr>
<td>3. ESP Transformer</td>
<td>100 kV, 1400 mA</td>
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<td>4. Freight locomotive transformer</td>
<td>3900 to 5400 kVA &amp; 6500 kVA</td>
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<td>5. ACEMU Transformer</td>
<td>Upto 1000 kVA 25 kV (1 Phase)</td>
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<td></td>
<td>1385 kVA (3 Phase)</td>
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<tr>
<td>6. Dry Type Transformer</td>
<td>Upto 3150 kVA</td>
</tr>
<tr>
<td>7. Bus-duct</td>
<td>Upto 15.75 kV generating Voltage</td>
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<tr>
<td>8. Instrument Transformer</td>
<td>VT &amp; CT upto 220 kV Class.</td>
</tr>
<tr>
<td>9. Diesel Electric Locomotives</td>
<td>Upto 2600 HP.</td>
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<tr>
<td>10. AC/DC Locomotive</td>
<td>5000 HP.</td>
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<tr>
<td>11. Over Head Equipment cum Test Car</td>
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</tbody>
</table>
2.3 A Brief History of Human Resource Development in Bharat Heavy Electricals Limited

The greatest strength of BHEL is its highly skilled and committed people. Every employee is given an equal opportunity to develop himself and improve his position. Continuous training and retraining, career planning, a positive work culture and participative style of management have engendered development of a committed and motivated work force ready to take up the challenge of making BHEL a competitive and world-class organisation.

BHEL was first among the public sector undertakings in India to introduce the concept of human resources development to its operation. This is one of the prominent reasons which explain its success not only in terms of sustained profit making capacity but also in terms of international recognition of its employees’ welfare policies.

To promote human resource development at the corporate level, the company has established Human Resource Development Institute to impart and monitor its human resource development activities. At the unitary level it is the duty of the human resource department to carry on training and development work.

HUMAN RESOURCE DEVELOPMENT INSTITUTE

The Human Resource Development Institute situated at Noida, a corner-stone of BHEL learning Infrastructure along with Advanced Technical Education Center (ATEC) in Hyderabad and the Human Resource Development Centers at units, through various organizational developmental efforts ensure that the prime resource of the organization - The Human Capital - is always in a state of readiness to meet the dynamic challenges posed by a fast
changing environment. It is the constant endeavour to take the HRD activities to the strategic level of becoming active partner to the pursuit of achieving the organisational goals.

Guided by the HRD Polestar statement "To create an environment supportive of blossoming of full potential of employees", HRDI along with HRDC’s and ATEC, through a step-by-step strategic long-term training process and several short-term need based programmes, based on comprehensive organizational research, enable its human resources to unearth and polish the Treasure Tower within.

The following have emerged as the future role of HRDI:

► Competency Building.
► Making training the main learning intervention - Enhancing Training Effectiveness.
► Policy, Planning and System Development.
► Consulting, Research and Publication.
► Partners in developing Business.
► Culture Building.
► Change Management.
► Pro-active Image Building.
► Strengthening HRDC’s.
► Networking with National and International Institutions.
► Information Technology - for alternative learning approach.
► Institution Building.

In recent times, to promote development, an e-enabled Performance Management System has been established for executives - a new benchmark in promoting performance-led growth. To encourage individuals for capability building and for continuous improvement through creativity and innovation in every sphere of activity, an e-network based Improvement Projects Rewards Scheme (IMPRESS) has been introduced company wide.
The year 2005-06 has been marked by numerous initiatives taken in the HRD area with active involvement of top management. All programmes focused on enhancing readiness at the levels in the organisation, guided by the theme ‘Being in business means being in a state of readiness always’.

During 2005-06, 31,500 participants were exposed to different training programmes. As a part of social commitment of the company as many as 4500 apprentices were trained. During the year, 93 campus recruited Engineer Trainees underwent one year induction training programme at different units. Over 520 customer personnel also were trained. Planned efforts have been made to make training fulfill the organisational needs. Due attention has been given to faculty development.

A beginning was made for assessing post-training effectiveness of training programmes conducted by HRDI. An exercise for receiving feedback from external agencies on effectiveness of training programmes was also undertaken during the year.

New initiatives undertaken to promote human resource development activities in the organisation are:

► A system for multi-skilling and skill up-gradation’ was developed.
► Training Programmes for inductee and promotee artisans and supervisors and promotee executives were organised.
► Training of Trainers Certification programme was conducted for the employees.
► Training programme for Executive Trainees was revamped.
(i) Organisational Structure

An organisation structure should be designed to clarify who is to do what tasks and who is responsible for what results. To remove obstacles to performance caused by confusion and uncertainty of assignment and to furnish decision making and communications networks reflecting and supporting enterprise objectives; organisational structure of BHEL at the corporate level has been designed. Figure 2(a) depicts the organisational structure at the corporate level.

Looking at organising as a process requires that several fundamentals be considered. In the first place, the structure must reflect objectives and plans, because activities derive from them. In the second place, it must reflect the authority available to an enterprise’s management. Authority in a given organization is a socially determined right to exercise discretion; as such, it is subject to change.

In the third place, an organization structure, like any plan, must reflect its environment. Just as the premises of a plan may be economic, technological, political, social, or ethical, so may be those of an organization structure. It must be designed to work, to permit contributions by members of a group, and to help people gain objectives efficiently in a changing future. In this sense, a workable organization structure can never be static.

There is no single organization structure that works best in all kinds of situations. An effective organization structure depends on the situation.

In the fourth place, since the organization is staffed with people, the groupings of activities and the authority relationships of an organization structure must take into account people’s limitations
and customs. This is not to say that the structure must be designed around individuals instead of around goals and accompanying activities. But an important consideration is the kinds of people who are to staff it. Figure 2(b) shows the organisational structure of BHEL Jhansi. The Jhansi unit has more than 1800 workers. Hence the positions in the organisational chart have been depicted up to the DGM level.

(II) Personnel Policies

BHEL’s policies with regards to personnel matters have given impetus to the positive organisational change which is apparent in the functioning of the organisation.

The company is committed to United Nation’s Global Compact Programme with a view to streamline its personnel policies with the latest trends. The set of core values enshrined in its ten principles and intent to advance G.C. principles within the company’s sphere of influence. It has made it a part of the strategy, culture and day-to-day operations.

The Global Compact is a partnership between the United Nations, the business community, international labour and NGOs. It provides a forum for the organizations to work together and improve corporate practices through co-operation rather than confrontation.

UNGC’s ten principles on human rights, labour standards, environment and anti-corruption are as follows:

**Human Rights**

1. Business should support and respect the protection of internationally proclaimed human rights; and
2. Make sure they are not complicit in human rights abuses.
Labour Standards

3. Business should uphold the freedom of association and the effective recognition of the rights to collective bargaining;
4. The elimination of all forms of forces and compulsory labour;
5. The effective abolition of child labour; and

Environment

7. Business should support a precautionary approach to environmental challenges;
8. Undertake initiatives to promote greater environmental responsibility; and

Anti Corruption

10. Business should work against all forms of corruption, including extortion and bribery.

As a part of its social commitment; BHEL has been following the Presidential Directives and Guidelines issued by the Government of India from time to time regarding reservation for SCs, STs and OBCs in letter and spirit. The representation of SC/ST/OB employees in total manpower is 18.71%, 4.20% and 7.34% for SCs, STs and OBCs respectively and the representation of physically disabled is 464 out of the total manpower strength of 42827 as on first of January, 2006.

Personnel Policies regarding Human Resource Planning, Recruitment and Selection, Training and Development, Performance appraisal and Salary and wages administration have been discussed in length in the subsequent chapters.