Powering Progress... Brightening Lives

Touching Every Indian Home

बी एच ई एल

BHEL

ENVIRONMENT SUSTAINBILITY REPORT 2011-12

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BHEL

VISION

A global engineering enterprise providing solutions for a better tomorrow

MISSION

Providing sustainable business solutions in the fields of Energy, Industry & Infrastructure

VALUES

GOVERNANCE	:	We are stewards of our shareholders' investments and we take that responsibility very seriously. We are accountable and responsible for delivering superior results that make a difference in the lives of the people we touch.
RESPECT	:	We value the unique contribution of each individual. We believe in respect for human dignity and we respect the need to preserve the environment around us.
EXCELLENCE	:	We are committed to deliver and demonstrate excellence in whatever we do.
LOYALTY	:	We are loyal to our customers, to our company and to each other.
INTEGRITY	:	We work with highest ethical standards and demonstrate a behaviour that is honest, decent and fair. We are dedicated to the highest levels of personal and institutional integrity.
COMMITMENT	:	We set high performance standards for ourselves as individuals and our teams. We honour our commitments in a timely manner.
INNOVATION	:	We constantly support development of newer technologies, products, improved processes, better services and management practices.
TEAM WORK	:	We work together as a team to provide best solutions & services to our customers. Through quality relationships with all stakeholders we deliver value to our customers.

GR-ELICIT

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Message from Chairman & Managing Director

Dear Stakeholders,

It gives me immense pleasure to place before you the first Sustainability Report on Environment for period 2011-12. Sustainable development presupposes a revolution in our values and in the way we confront the challenges of tomorrow.

Sustainability is central to our mission of "Providing Sustainable business Solutions in the fields of Energy, industry and Infrastructure" leading to customer success.

The concept of sustainable development is to fully integrate the needs for economic and social development with that of conserving the environment as it is at a tipping point. The awareness of sustainable development issues has never been so great, especially in relation to energy and climate change vis-à-vis growth of economy. We must manage our rich natural resource base to ensure that future generations can draw the same benefits from them as we are able to get today. In this regard, our strategic Plan 2012-17 lays emphasis on Sustainable Development and a sustainability strategy has been formulated.

There is a need for breakthrough technologies for electricity generation, clean use of coal, efficient use of natural resources, low carbon transport systems, more efficient transmission systems and energy efficient buildings to live up to the cause of sustainable development.

Our company always endeavours to serve the community by contributing to various socio-economic and community development programmes in and around our area of operation. Further structured CSR initiatives are also being undertaken through specialized agencies to promote inclusive growth across entire length & breadth of the country, and thereby contributing towards achievement of sustainable development.

As a part of sustainable development, we contribute to environment improvement by pursuing programs that include greening initiatives, wastewater recycle & reuse, waste minimization, promotion of renewable energy usages, and energy saving initiatives.

I am sure that the detailed exercise carried out in identifying and capturing our performance data on "Environment Sustainability" would help us to move towards Sustainable development as a part of our commitment to all stakeholders.

New Delhi
15th March 2013

B. Prasada Rao
Chairman & Managing Director

Message from Director (HR)

Dear Stakeholders,

The First Sustainability report on Environment for the year 2011-12 is here. This is a result of many concentric and dedicated efforts of Corporate HSE & CSR team & Unit level Nodal officers. To address the long term goal of Sustainable Development, we have created two tier frame work within BHEL. A Steering Committee at the Corporate level mentors the journey in term of transforming and translating vision of the organisation in line of the mission and policy, whereas Nodal officer at each manufacturing unit level, conforms with the vision in shaping the manufacturing unit towards a common future.

BHEL units are already having Management Systems' approach to deal and address initiatives. Our existing Management Systems have helped us reach this stage of information disclosure.

In line with the various Environmental needs, we have carved our CSR & Sustainability initiatives. Penetrating deep down into the society, these CSR initiatives strengthen our bonding with our very own employees and community. Initiatives such as water harvesting projects, green belt development, mass awareness about water conservation, energy efficiency and conservation, usage of renewable energy, employees community involvement in various awareness programmes on environmental protection etc. are to name a few.

The journey has just begun and with the support and feedback of all the relevant stakeholders, we shall strive to enhance the stakeholder participation especially our highly committed employees to attain the objective of Sustainable development.

New Delhi
15th March 2013

R Krishnan
Director (Human Resources)

About The Report

Sustainability has always been a part of business strategy of BHEL. In its endeavour to ensure renewed commitment towards Sustainable Development and inform the stakeholders about the efforts being made in Sustainability, BHEL started to track the environmental performance of the organization based in a structured way based on GRI-G3 guidelines since 2009-10. After compilation of baseline data for 3 years: 2009-10, 2010-11 and 2011-12, it was decided to bring out the first Environment Sustainability Report in public domain. This report covers the environmental performance of its 14 manufacturing units for the period 2011-12. However, to bring more clarity for the stakeholder's about the progress being made in the organization's environment performance, the data for 2009-10 and 2010-11 have also provided at many places for comparison purpose in the report.

BHEL recognizes the importance of Sustainability. Therefore it first constituted Sustainability team comprising senior management followed by the positioning of nodal officer at each identified unit. Appreciation/ Capacity building programs were held at Corporate Office as well as EPD Bangalore, HEP Bhopal, HPEP Hyderabad and HPBP Trichy units of BHEL in collaboration with leading expert in the field of Sustainable Business. Materiality analysis was carried out to find the applicability of the environmental parameters to each of the units. Below given criteria for materiality check was followed:

1. Internal consultation with nodal officers
2. Relevance to BHEL core business
3. Commitment made to Ministry of Heavy Industry in terms of Environment Performance
4. Environment Improvement Projects undertaken.

On the basis of such comprehensive exercise for all manufacturing units it was decided to report on environmental parameters (as per GRI-G3 Guidelines) covering core indicators (16) & additional indicators (4). Prioritization of indicators in the environment section was carried out considering the nature of operations.

The report covers the manufacturing facilities of BHEL all across India. The reporting principles and methodology of this report are in accordance with GRI-G3 guidelines as the information given in the report complies with the principles of comparability, reliability & accuracy, clarity, timeliness and balance (overall picture of organisation's strengths & improvement areas). The relevant technical protocols have been followed for reporting the core indicators as well as the additional indicators. The other requirements of the guidelines like organisational profile and description of reporting parameters have been followed. BHEL shows high accountability towards stakeholders through regular Stakeholder Engagement activities.

As a company with global reach, BHEL is committed to being accountable to those on whom the organisation has an impact and those who have an impact on BHEL and continuously maps its stakeholders and has regular processes in place to ensure inclusion of stakeholder concerns and expectations.

Key issues are identified through ongoing stakeholder engagement and addressed by programmes or action plans with clear and measurable targets.

The focus of the report is on environmental issues & challenges facing the country today and measures taken by BHEL to face these issues and challenges. Wherever practicable, the measurement techniques adopted were based on actual measurement through BHEL's specific systems like SAP/files/records etc. available with the units. However, in the absence of continuous monitoring system for some indicators, data has been calculated on the basis of estimations considering internationally recognized guidelines & standards such as IPCC. Data available centrally at Corporate Office has also been incorporated wherever required.

For any information or query related to this report you may please write to **chse@bhel.in**

Materiality Analysis

Reference No. as per GRI-G3	Aspects	Impacts	Identified as Material Issue
EN1	Materials	Materials used by weight or volume	√
EN2		Percentage of materials used that are recycled input materials	√
EN3	Energy	Direct energy consumption by primary energy source	√
EN4		Indirect energy consumption by primary source	√
EN5		Energy saved due to conservation and efficiency improvements	√
EN8	Water	Total water withdrawal by source	√
EN10		Percentage and total volume of water recycled and reused	√
EN11	Biodiversity	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	√
EN12		Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	√
EN 16	Emissions, Effluents, and waste	Total direct and indirect greenhouse gas emissions by weight	√
EN 18		Initiatives to reduce greenhouse gas emissions and reductions achieved	√
EN19		Emissions of ozone-depleting substances by weight	√
EN20		NO_x, SO_x, and other significant air emissions by type and weight	√
EN21		Total water discharge by quality and destination	√
EN22		Total weight of waste by type and disposal method	√
EN23		Total number and volume of significant spills	√
EN26	Products and Services	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	√
EN27		Percentage of products sold and their packaging materials that are reclaimed by category	√
EN28	Compliance	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	√
EN30	Overall	Total environmental protection expenditures and investments by type	√

Additional Indicator

Core Indicator

BHEL... at a glance

Vision:

A global engineering enterprise providing solutions for a better tomorrow

Mission:

Providing sustainable business solutions in the fields of Energy, Industry & Infrastructure

BHEL ...

- has capability to manufacture wide range of power plant equipments
- has consistent track record of growth and increased its turnover by three times & net profit by four times in the last five years
- recorded all time high turnover of Rs. 49510 Crore during 2011-12
- has installed Utility sets of 106202 MW across the Globe till 2011-12
- is a 20000 MW per year Power Plant Equipment manufacturing company
- has proven turnkey capabilities for executing power projects from concept-to-commissioning of unit sizes up to 1000 MW
- has 15 manufacturing divisions & a wide network of service centers
- manufactures 180 products in 30 major product groups

BHEL is a Single Source with Multiple Solutions for Infrastructure & Industrial Sector

Power

Industry

Oil & Gas

Transmission

Transportation

NCES (Solar)

Corporate Profile

BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing companies in India in terms of turnover.

Established in 1964, BHEL ushered in the indigenous Heavy Electrical Equipment industry in India - a dream that has been more than realized with a well-recognized track record of performance. The company has been earning profits continuously since 1971-72 and paying dividends since 1976-77. BHEL is engaged in the design, engineering, manufacture, construction, testing, commissioning and servicing of a wide range of products and services for the core sectors of the economy, viz. Power, Transmission, Industry, Transportation, Renewable Energy, Oil & Gas and Defence. The company has 15 manufacturing divisions, two repair units, four regional offices, eight service centres, eight overseas offices and 15 regional centres and currently operates at more than 100 project sites across India and abroad.

The company places strong emphasis on innovation and creative development of new technologies. The company has realized the capability to deliver 20,000 MW p.a. of power equipment, enabling to address growing demand for power generation equipment. Our research and development (R&D) efforts are aimed not only at improving the performance and efficiency of our existing products, but also at using state-of-the-art technologies and processes to develop new products. This enables us to have a strong customer orientation, to be sensitive to their needs and respond quickly to the changes in the market.

The high level of quality & reliability of our products is due to adherence to international standards by acquiring and adapting some of the best technologies from leading companies in the world including General

600 MW Turbo-Generator being dispatched for North Chennai TPS

Electric Company, Alstom SA, Siemens AG and Mitsubishi Heavy Industries Ltd., together with technologies developed in our own R&D centres.

Most of our manufacturing units and other entities have been accredited to Quality Management Systems (ISO 9001:2008), Environmental Management Systems (ISO 14001:2004) and Occupational Health & Safety Management Systems (OHSAS 18001:2007). BHEL, where Quality Systems as per ISO-9000 have taken deep roots has made significant achievements in the CII Exim Award Scheme for Business Excellence by securing 'Commendation for Significant Achievements in TQM' for three of its manufacturing units and one power sector-region during 2011-12. Haridwar & Trichy units and Power Sector Eastern region have recorded an improvement of 5.26%, 5.19% & 7.14 % respectively in Customer Satisfaction Index as per Customer Satisfaction Survey conducted in 2011-12 over previous survey establishing company's sustained commitment towards quality. As a part of its thrust to ensure cost competitiveness, the company has successfully completed 32 case studies in respect of process improvement & cost reduction.

Power Generation

In Power generation segment, BHEL is the largest manufacturer in India supplying wide range of products & systems for thermal, nuclear, gas and hydro-based utility and captive power plants. BHEL has the capability to execute power projects on turnkey/EPC basis from concept-to-commissioning. BHEL supplies steam turbines, generators, boilers and matching auxiliaries up to 800 MW ratings, including sets of 660/700/800 MW based on supercritical technology.

BHEL has facilities to go up to 1000 MW unit size. To make efficient use of high ash content coal available in India, BHEL also supplies circulating fluidised bed combustion (CFBC) boilers for thermal plants. BHEL is the only Indian company capable of manufacturing large-size gas-based power plant equipment, comprising of advanced-class gas turbines up to 289 MW (ISO) rating for open and combined-cycle operations. BHEL engineers and manufactures custom-built hydro power equipments. Its range covers turbines of Francis, Pelton and Kaplan runners, pump turbines, bulb turbines and mini-micro hydro plants, with matching generators, for different head-discharge combinations. With realization of enhanced capability, the company is well positioned to capitalise on growing demand for power plant equipment in the country.

2x600 MW for Barh Supercritical Powe Project under execution by BHEL

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 manufactured sets account for 59% of installed capacity of around 1,80,000 MW in utility sector across the country as of 31.03.2012 and these sets accounted for 69% of electricity generated during 2011-12. During the XI Plan period, BHEL has commissioned 25,385 MW of Utility sets, nearly double of that contributed during X Plan period. Significantly, the landmark achievement during 2011-12 has been commissioning within a span of just 24 hours of a cumulative capacity of 1,625 MW comprising of thermal and hydro units at various power stations across the country. Another significant achievement was the commissioning of 13 sets of 500 MW during the year against previous high of 8 sets.

Industries

BHEL is a leading manufacturer of a variety of Industrial Systems & Products to meet the demand of a number of industries, like metallurgical, mining, cement, paper, fertilizers, refineries & petro-chemicals etc besides Captive / Industrial utilities. BHEL has supplied systems and individual products including a large number of cogeneration Captive power plants, Centrifugal compressors, Drive Turbines, Industrial boilers and auxiliaries, Waste heat recovery boilers, Gas turbines, Pumps, Heat exchangers, Electrical machines, Valves, Heavy castings and forgings, Electrostatic precipitators, ID/FD fans, Seamless steel tubes etc. to a number of industries other than power utilities. BHEL has also emerged as a major supplier of controls and instrumentation systems, especially distributed digital control systems for various power plants and industries.

The Industry business sector of the company is fully geared to execute EPC contracts for captive power plants from concept to commissioning.

Transportation

Electric Locomotive (25 kV AC, Type WAG 7)

Most of the trains of 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, smoothening reactors, exciters, converters, inverters, choppers and associated control equipment, viz. master controllers, chopper controllers, brake and door equipment, electronic controls including software based controls extending to rolling stock and other transport applications. Thet systems supplied are both with the conventional DC and state-of–the-art AC drives. India's first underground metro at Kolkata runs on drives and controls supplied by BHEL. Almost all the EMUs in service are equipped with electrics manufactured and supplied by BHEL. BHEL has proved once again its capabilities and

technological excellence by successfully establishing itself as an indigenous manufacturer of energy efficient IGBT based propulsion system for AC drives, a landmark achievement in transportation sector. BHEL has also diversified into the area of track maintenance machines and coach building for Indian Railways and undertakes retrofitting and overhauling of rolling stock.

Loco manufacturing capacity at Jhansi unit is under augmentation to meet increased requirements of Indian Railways.

Renewable Energy

In conformity with its concern for the environment, BHEL has been contributing to the national effort for developing and promoting renewable energy based products on a sustained basis. Starting from small applications like Solar Powered Street Lighting, Rural Water Pumping Systems, Railway signalling, Offshore Drilling Platforms, etc., BHEL has supplied and commissioned large size stand-alone as well as Grid-interactive Solar Power Plants. With an aim to perform a significant role in National Solar Mission's proposed target of 20,000 MW of grid connected solar power, BHEL signed an agreement with Abengoa, Spain, a leader in solar projects to provide EPC solutions in Concentrated Solar Thermal Power (CSP) areas. The company is working jointly with IOCL and IIT-Rajasthan for development work of product and systems in the Concentrated Solar Power (CSP) area. A new record has been set by installing 15MWp Grid Interactive Solar Photo Voltaic (SPV) plants across the country. In the context of Jawaharlal Nehru National Solar Mission, BHEL is executing the orders for Renovation and Operation & Maintenance of SPV plants (aggregate 2.15MWp) at various Islands of Lakshadweep.

Country Largest Diesel Grid-Interactive Solar Power Plant of 760 kWp capacity, commissioned by BHEL at lakshadweep

Oil and Gas

BHEL possesses expertise to design, manufacture and service various types of onshore rigs to suit the Indian service conditions. The range of equipment covers onshore deep drilling rigs, super-deep drilling rigs, helirigs, work-over rigs, mobile rigs and desert rigs with matching draw works and hoisting equipment. BHEL now has the capability to manufacture conventional on shore deep drilling rigs up to a depth of 9,000 meters, mobile rigs to a depth of 3,000 meters and well servicing rigs to a well depth of 6,100 meters. The company is in the process of manufacturing environment friendly AC technology based oil rings for on shore application.

BHEL is supplying onshore drilling rig equipment viz. Draw works, Rotary-table, Travelling block, Swivel, Mast and Sub structure, Mud systems and Rig electrics, Well heads & X-Mas tree valves upto 10,000 psi rating for onshore as well as offshore application to ONGC, Oil India Ltd. and Private Drilling Companies.

Transmission

400 KV Substation set up by BHEL on turnkey basis at Durgapur

BHEL has significant presence in the field of power transmission in India with a wide range of transmission systems and products. The products manufactured by BHEL include Power transformers, Instrument transformers, Dry type transformers, Shunt reactors, Vacuum and SF6 switchgear, Gas insulated switchgears, Ceramic insulators, etc. Major critical hardware such as capacitor banks, circuit breakers, control and protection equipment and thyristor valves are in its manufacturing range.

BHEL has successfully designed, manufactured and commissioned India's highest voltage Power Transformer of 1200 kV 333 MVA rating at the 1200 kV National Experimental Substation of PGCIL. The Single Phase Interconnecting Transformer has been developed and manufactured with in-house engineering and manufacturing technology. BHEL is executing the world's first ± 800KV 6,000 MW Ultra High Voltage Multi-Terminal DC Transmission link between North-East and Agra. The company has developed first 765 kV 80 MVAr single phase Shunt Reactor and emerged as manufacturer of largest Natural Air cooled Dry Type Cast Resin 3-phase, 50Hz Transformer of 15 MVA, 33/6.9 kV rating besides commissioning indigenously developed 36 kV and 145 kV Gas Insulated Substations (GIS).BHEL has the expertise and extensive on-the job exposure for design and applications relating to Power System Studies and Feasibility Studies etc. The Company accepts full project responsibility for feasibility / system studies, execution and commissioning of Fixed Series Compensation/Controlled Shunt Reactor schemes.

International Business

BHEL has, over the years, established its references in 75 countries across all inhabited continents of the world. These references encompass almost the entire range of BHEL products and services, covering Thermal, Hydro and Gas-based turnkey power projects, Substation projects, Rehabilitation projects, besides a wide variety of products like Transformers, Compressors, Valves, Oil field equipment, Electrostatic Precipitators, Photovoltaic equipment, Insulators, Heat Exchangers, Switchgears, Castings and Forgings etc.

The company has been successful in meeting the requirements of international markets in terms of complexity of work as well as technology, quality and other requirements. BHEL has proved its capability to undertake projects on fast-track basis. Continued focus on After-Sales-Services led to orders for Spares & Services from Indonesia, Bhutan, Oman, Malaysia, Bangladesh, Vietnam, Srilanka, Saudi Arabia and UAE during 2011-12. Besides undertaking turnkey projects

HRSG Drum supplied by BHEL for Grodno Power Project, Belarus

on its own, BHEL also possesses the requisite flexibility to interface and complement other international companies for large projects, and has also exhibited adaptability by manufacturing and supplying intermediate products. The company is firmly perched to expand its vista by taking a number of strategic business initiatives to fuel further growth in international business which includes exploration of opportunities in solar energy related projects, equipments and projects in Transmission & Distribution arena.

In International arena, in recent times, the prevailing environment of heightened uncertainties especially in the Euro zone, has also impacted the business prospects of BHEL. The widespread financial instability in Europe and political turmoil in Middle East & North Africa (MENA) region has caused delays in financial closure & project financing, resulting in postponement of finalization of new projects. In spite of such situation, BHEL was able to strengthen its foot print in 21 countries across the globe during 2011-12. The company is poised to maintain its references in the overseas market encompassing almost the entire range of products and services, covering Thermal, Hydro and Gas-based turnkey power projects, Substation projects and Rehabilitation projects, besides a wide variety of products like Transformers, Motors, Compressors, Valves, Electrostatic Precipitators, Photovoltaic equipments, Insulators, Heat Exchangers and Switchgear etc.

Technology Up-gradation, Research & Development

BHEL's products and systems are technology intensive and the company emphasizes on R&D / technology development in its endeavour to realize its strategic aspiration of becoming engineering conglomerate.

HRSG Training Simulator developed by Corporate R&D

Accordingly BHEL pursued the strategy of in-house product development by encouraging innovation in line with the "Decade of Innovations (2010-2020)" declared by Govt. of India. As a major step towards this, the company has updated its R&D policy.

UHV Test laboratory set up at Corporate R&D

Significantly during 2011-12, BHEL invested Rs. 1,198.82 Crore on R&D efforts – 22% higher than the previous year. BHEL's efforts for encouraging innovation have resulted in raising BHEL's IPR capital tally to 1786 with highest ever IPRs (351 no.) filed during 2011-12. A growth of 26% over last year has been recorded in turnover of Rs. 9,832 Crore from in house developed products and services. BHEL has been ranked the Ninth Most Innovative Company in the world by the renowned US business magazine Forbes. Significantly, BHEL is the only Indian engineering company on the list, and is ranked much higher than similar multinational companies in the power equipment field.

Plasma Nitriding System at Corporate R&D, Hyderabad

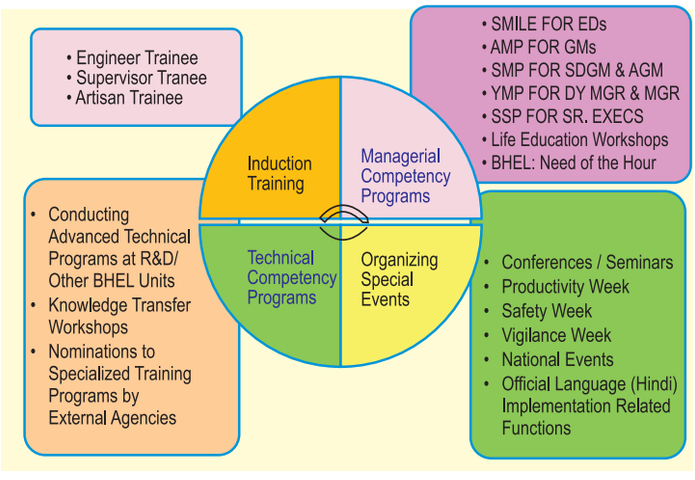
Centre for Nano Technology established by BHEL

In conformity with engineering and technology objective, the Corporate R&D Division at Hyderabad leads BHEL's research efforts using emerging technologies to offer state-of-the-art total engineering solutions. Research and product development centres at each of the manufacturing divisions play a complementary role. In order to facilitate advanced R&D activities in focused areas with state-of-the-art facilities and specialized manpower, BHEL has established 13 Centres of Excellence which include eight Centres of Excellence at Corporate R&D Hyderabad. In addition to the existing centres of Excellence for Simulators, Computational Fluid Dynamics, Permanent Magnet Machines and Robotics and Machine Dynamics, BHEL has established four new Centres of Excellence during the year in the areas of Advance Fabrication Technology, Coal Research Centre, Nano Technology application and UHV lab for GIS development. An MoU has been signed with Indian Institute of Science (IISc), Bangalore, covering a broad area of joint research opportunities to facilitate BHEL to engage in collaborative research. This aims at accelerating the pace of development and demonstration of new products, systems and concepts.

'R&D Advisory Council' has been formed of eminent scientists and dignitaries from Govt. of India to advise BHEL on R&D strategies for growth and to enable it face the new challenges in the market.

In addition to Corporate R&D Division, BHEL has four specialized Institutes, viz., Welding Research Institute at Trichy, Ceramic Technological Institute at Bangalore, Hydro Lab at Bhopal and Pollution Control Research Institute at Haridwar.

Human Resource Development Institute



Guided by the HRD Mission statement "To promote and inculcate a value-based culture utilizing the fullest potential of Human Resources for achieving the BHEL Mission", the HRDI through a step by step strategic long term training process and several short term need based programmes based on comprehensive organisational research, enables the human resources to unearth and hone their potential.

In line with changing market requirements, the knowledge and skills of BHEL employees are continuously upgraded. In a major advancement, an integrated Human Resource Management system was implemented which aims at reaching out to the internal stakeholders on real time basis and redefining the role of HR functions as a strategic partner in business, through process standardization, optimization and seamless enterprise integration. As a part of this process, competency mapping and assessment of behavioural competencies for select level has been completed in EDN, Bangalore & Jhansi and Power Sector Western region & Power Sector Eastern region during 2011-12.

During 2011-12, HRDI has prepared and implemented Learning modules for Boiler and Turbine for new entrants and trained 2000 workmen. Some of the Core programs conducted include Strategic need based

programmes; Competency based programmes and Functional Programmes like Advanced Management Programmes, General Management Programmes, Strategic Management Programmes, Senior Management Programmes, Middle Management Programmes, Young Managers Programmes and self starter programs for budding managers. In a bid to enhance participation of Minorities, 24.2% of minorities were nominated for skill and competency development programs during the year.

In addition, the HRDI provides professional support to Corporate HR and HRDCs at Units/Divisions. HRDI is also accepting consulting assignments from other organisations in a selective manner.

Major Highlights during the year 2011-12 in pictures

2xFrame 9E GTG Units commissioned by BHEL at PDO Amal in Oman

153 MW Captive Power Plant Commissioned by BHEL at GGS Refinery Bhatinda

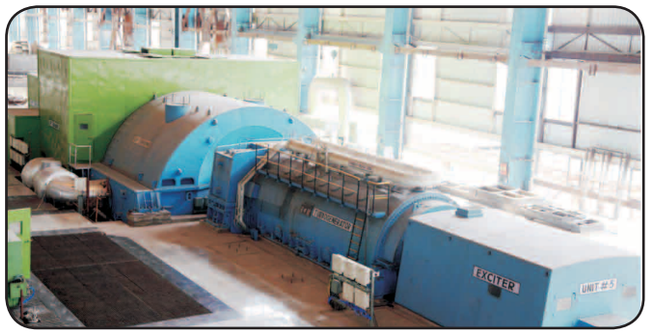
351 MW CCPP commissioned by
BHEL for GSEGL, Hazira

6000 hp electric locomotive of CLW equipped with BHEL's
IGBT-based traction & auxiliary convertors

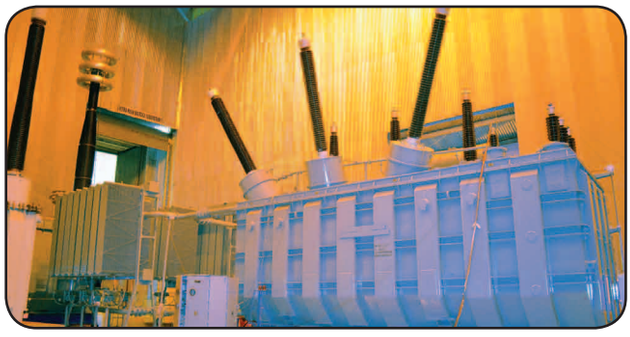
2x500 MW TPS commissioned by
BHEL for DVC, Durgapur

2x100 MW (Units 3&4) Hydro sets for THDC,
Koleshwar

1500 MW Pragati Combined Cycle
Power Project, Bawana



490 MW (Unit 5) of NCTPP Dadri commissioned by BHEL
- winner of goi's National Award frro Early Completion



Karnataka's Single Largest Grid-Connected Solar Power
Plant of 5 MW capacity commissioned by BHEL

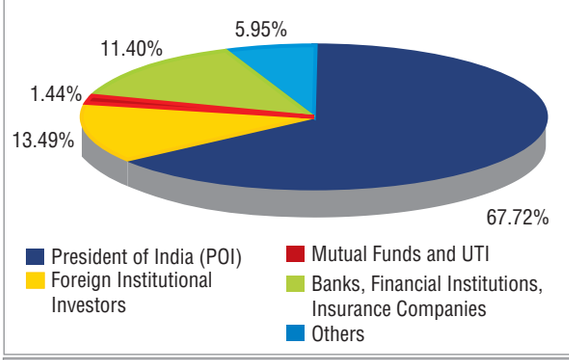
Commercilization of indigeneously developed 400 kV,
315 MVA (3 Phase), Phase Shifing Transformer

1x600 MW Avantha TPP set up by BHEL, appreciated by
KWPCL for maintaining high quality standards during
construction

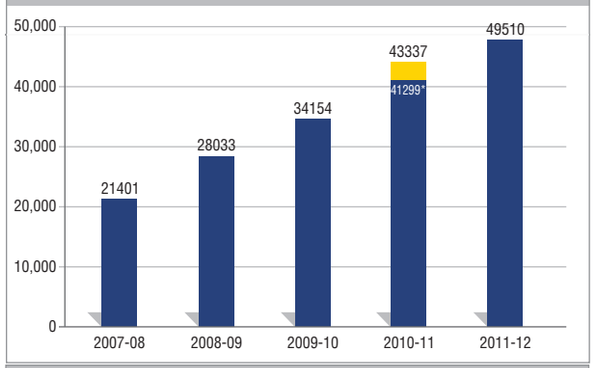
Vindhyachal STPS equipped with BHEL stes - winner of
Gold Mentorious Award 2010-11 for performance

BHEL performance at a glance

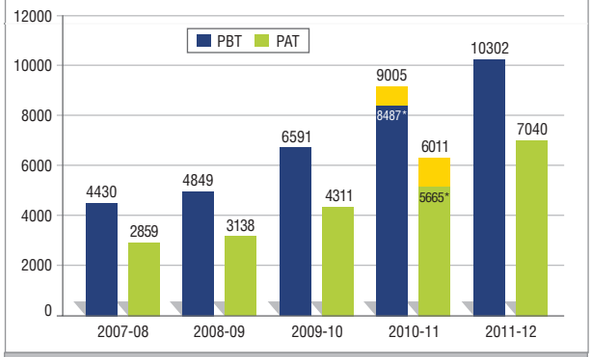
SHAREHOLDING PATTERN AS ON 31st MARCH, 2012



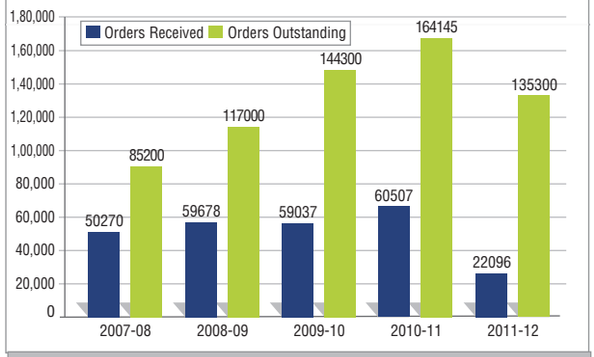
TURNOVER (in crore)



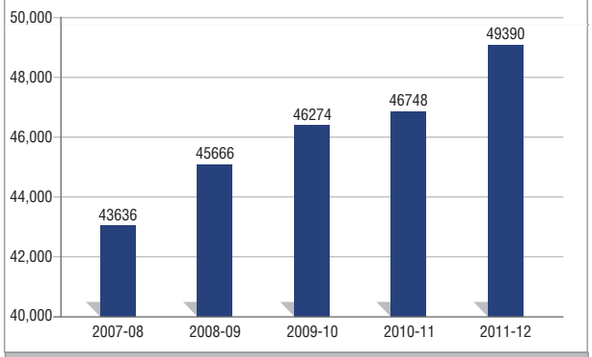
PROFIT BEFORE TAX / PROFIT AFTER TAX (in crore)



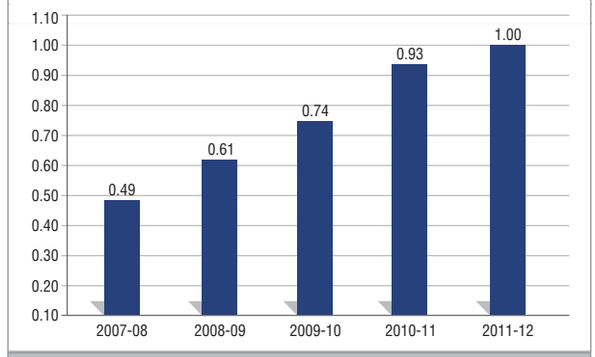
ORDERS RECEIVED/ORDERS OUTSTANDING (in crore)



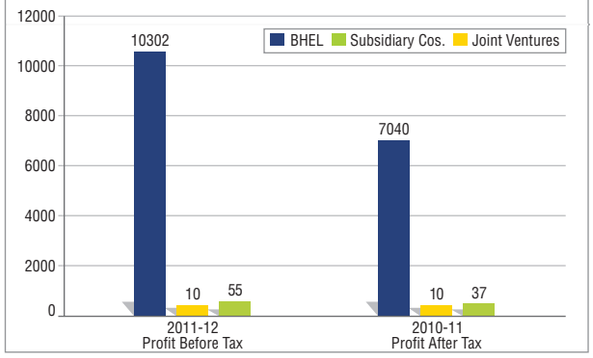
MANPOWER (in nos.)



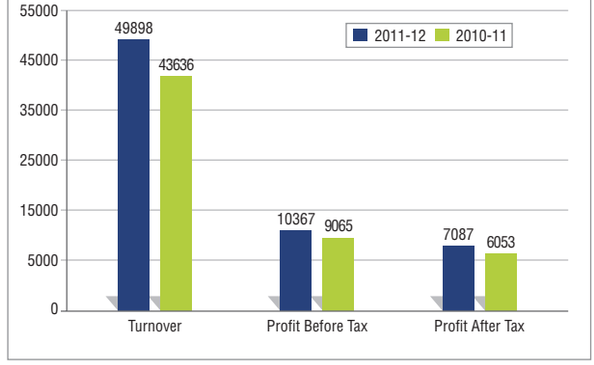
TURNOVER PER EMPLOYEE (in crore)



CONSOLIDATED FINANCIAL STATEMENTS - PBT/PAT (in crore)



CONSOLIDATED FINANCIAL PERFORMANCE (in crore)



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

Awards and Accolades

Continuing its tradition of winning prestigious national/ international awards, the organisation and its employees won several awards during the year 2011-12. Notable among these included:

- SCOPE Meritorious Award for R&D, Technology Development and Innovation'. The award was presented by the Hon'ble President of India, Smt. Pratibha Devisingh Patil to CMD, BHEL.
- 'MoU Excellence Award 2009-10' as the Top Performing CPSE in 'Industrial Sector'. The award was presented by the Hon'ble Prime Minister of India, Dr. Manmohan Singh to CMD, BHEL.
- BHEL became the only PSU to be unanimously selected for the 'NDTV Profit Business Leadership Award' for the second year in succession. The award for 2011 was conferred to BHEL in the industry vertical of 'Engineering'.
- BHEL was conferred the maximum number of 4 'ICWAI National Awards for Excellence in Cost Management', among public and private sector companies for 2010-11. BHEL was awarded the recognition for the seventh successive year.
- 'Essar Steel Infrastructure Excellence Award 2011' was awarded to BHEL by CNBC TV18.
- 3 'National Safety Award' to BHEL's Hyderabad and Trichy units for outstanding achievements in terms of longest accident free period and lowest accident frequency rate at their works.
- Under the Rolta Corporate Awards 2010 of Dun & Bradstreet, BHEL was selected as the top Indian company under the 'Engineering / Capital Goods' sector.
- The 'Intellectual Property Award 2011' was conferred on BHEL by CII.
- BHEL also won the 'Golden Peacock Award for Occupational Health & Safety 2011' and the 'Golden Peacock Award for Innovation Management 2011' in the Manufacturing Sector category.
- BHEL was awarded the 'EXIM Achievement Award' in the Import Category by the Tamil Chamber of Commerce.
- Other awards include 'Dainik Bhaskar India Pride Gold Award 2011' for excellence in Central and State Public Sector Enterprises in the category of Heavy industries; 'Gentle Giant' award from the Dalal Street Investment Journal and 'Enertia Award 2011' under the category Technology & Innovation for Conventional Energy (Thermal, Nuclear, etc.).
- For its outstanding export performance, BHEL has won the Engineering Export Promotion Council (EEPC)'s Top Export Award for the twenty second year in succession.
- BHEL has been ranked the Ninth Most Innovative Company in the world by the renowned US business magazine Forbes. Significantly, BHEL is the only Indian engineering company on the list, and is ranked much higher than similar multinational companies in the power equipment field.
- BHEL was recognised as the 'Best Engineering Company to Work For' in the Engineering & Automotive category by Business Today magazine.
- Continuing its winning streak in the CII Exim Award Scheme for Business Excellence as per the globally tgnised model of European Foundation for Quality Management, three units of BHEL namely HPEP Hyderabad, EDN Bangalore and Power Sector Eastern Region won the 'Commendation for Significant Achievements in TQM'. In addition, its BAP Ranipet Unit, was awarded 'Commendation for Strong Commitment to Excel'.

- 3 Quality Circles won Gold Medals for their case studies at the International Quality Circle Conference (ICQCC – 2011) held in Yokohama, Japan.
- 8 Prime Minister's 'Shram Awards' including 2 'Shram Bhushan' and 5 'Vishwakarma Rashtriya Puraskars'.
- The following awards in individual category conferred on CMD, BHEL:
  - 'SCOPE Excellence Award 2009-10' in individual leadership category (Maharatna & NavratnaPSEs) by the Hon'ble Prime Minister of India,Dr. Manmohan Singh.
  - 'Eminent Engineering Personality of India Award' from the Institution of Engineers (India) at the Indian Engineering Congress.
  - 'Forbes India Leadership Award 2011' in the 'Best CEO Public Sector' category.
  - 'Sivananda Eminent Citizen Award- 2011' of the Sanatana Dharma Charitable Trust by H.E. Sh. E.S.L. Narasimhan, Hon'ble Governor of Andhra Pradesh.
  - '9th Wärtsilä Mantosh Sondhi Award' by Mr. Björn Rosengren, President and CEO, Wärtsilä Corporation for outstanding contribution to the energy sector in India.

The then president of India presenting the 'SCOPE Meritorius Award for best practices in HRM to CMD, BHEL

CMD BHEL receiving SCOPE MoU award for excellence & Outstanding contribution to Public Sector Management 2009-10, from the Hon'ble Prime Minister of India

Hon'ble Union Minister for Commerce & Industry presenting the intellectual propery award 2011 to CMD, BHEL & Director (E, R&D)

CMD BHEL receiving the NDTV Profit Business leadership Award 2011 in the Engineering Category from the then Unioun Minister of Finence

Governance, Commitment & Engagement

Our Philosophy on Corporate Governance

BHEL has established a sound framework of Corporate Governance which underlines commitment to quality of governance, transparency, disclosures, consistent stakeholders' value enhancement and corporate social responsibility.

BHEL endeavours to transcend much beyond the regulatory framework and basic requirements of Corporate Governance focusing consistently towards building confidence of its various stakeholders including shareholders, customers, employees, suppliers and the society at large. The Company has developed a framework for ensuring transparency, disclosure and fairness to all, especially minority shareholders.

The Vision of BHEL envisages being a global engineering enterprise providing solutions for a better tomorrow and its Mission is "Providing sustainable business solutions in the fields of Energy, Industry & Infrastructure".

The Corporate Governance Policy of BHEL rests upon the four pillars of Transparency, full disclosure, Independent Monitoring and Fairness to all. To strengthen this, BHEL has signed a MoU with Transparency International to adopt 'Integrity Pact'. Our corporate structure, business procedures and disclosure practices have attained a sound equilibrium with our Corporate Governance Policy resulting in achievement of goals as well as high level of business ethics. BHEL's Corporate Governance policy is based on the following principles:

1. Independence and verfsatility fo the Board
2. Integrity and ethical behaviour of all personal
3. Recognition o fobligations towards all stakeholders - shareholders, customers, employees, suppliers and the society
4. High degree of disclosure and transparency levels
5. Total compliance with laws in all areas in which the company operates
6. Achievement of above goals with comassion for people and environmentt

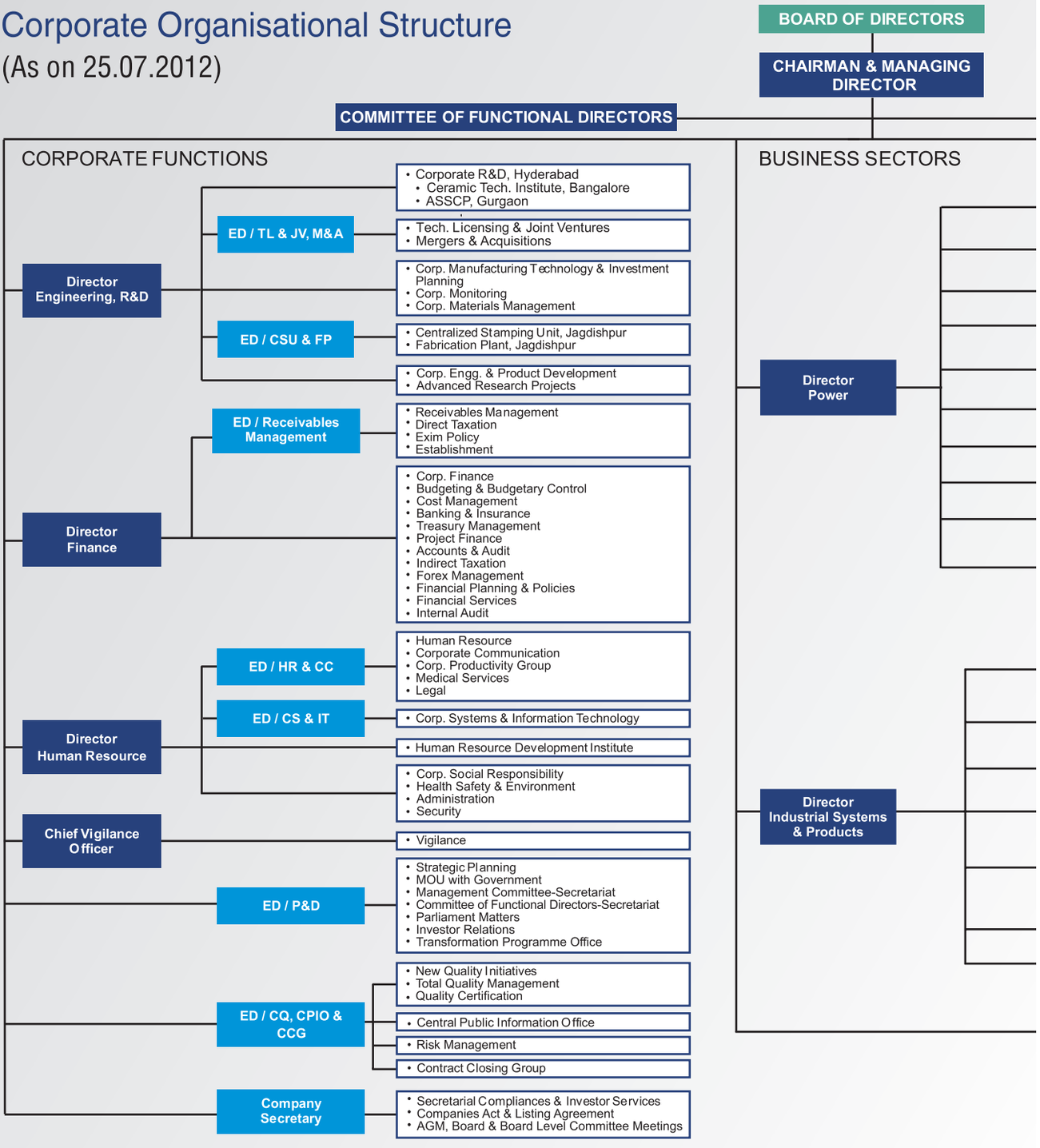
The Company believes that conducting business in a manner that complies with the Corporate Governance procedures and Code of Conduct, exemplifies each of our core values and positions us to deliver long-term returns to our shareholders, favourable outcomes to our customers, attractive opportunities to our employees and making the suppliers our partners in progress & enriching the society.

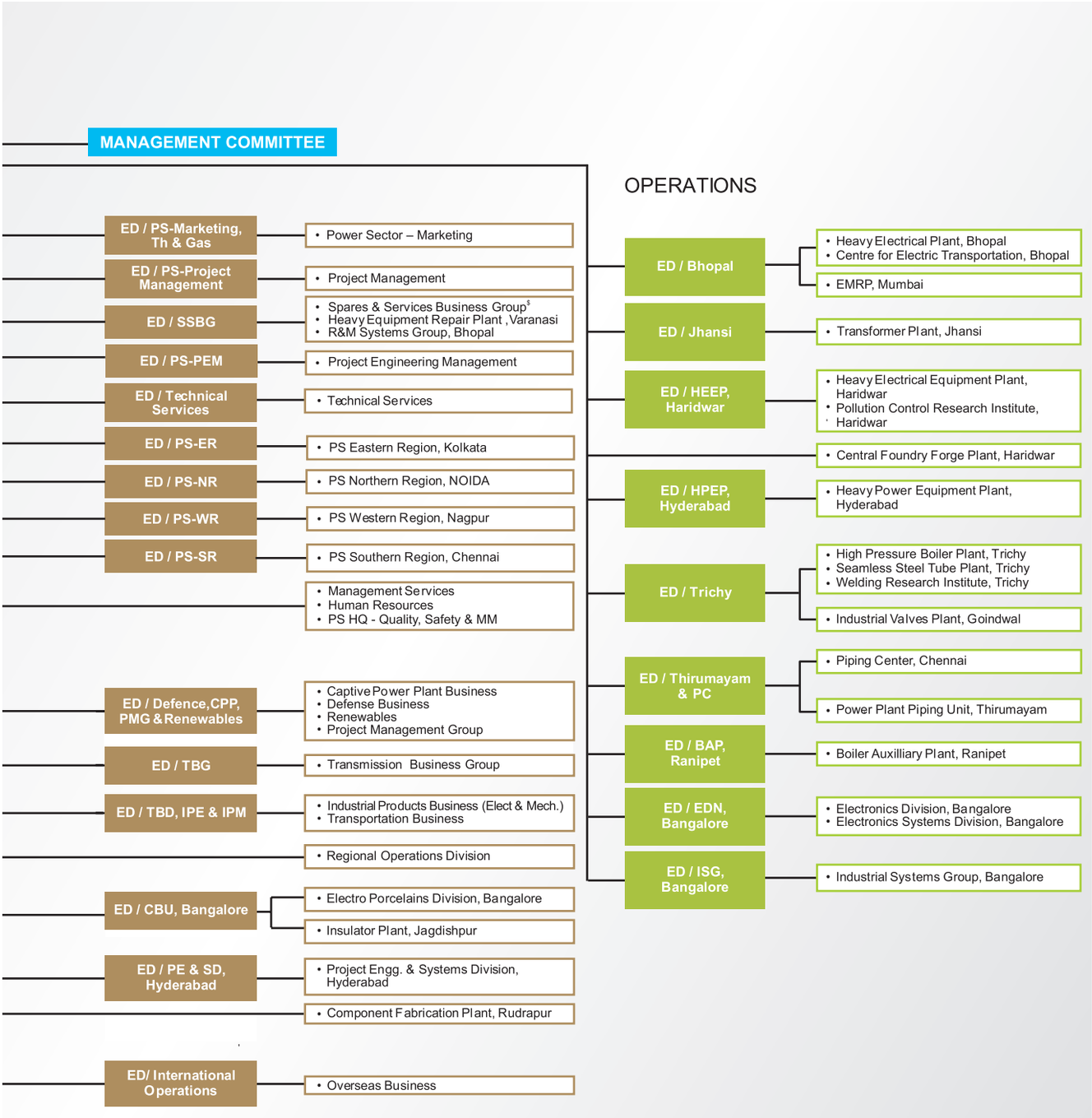
Corporate HSE & CSR Department is responsible for initiating sustainability in its core business processes. The corporate structure is mentioned below.

For further information on corporate governance please check our annual report posted at our website www.bhel.com

Corporate Organisational Structure

(As on 25.07.2012)





$ Matrix reporting to Director (IS&P) for Industry sector Business

Sustainability at BHEL

The concept of Sustainability has been ingrained in the DNA of BHEL which is evident from the Mission Statement – ***"Providing Sustainable Business solutions in the fields of Energy, Industry & Infrastructure".*** Sustainability is an integral part of the company's strategy. BHEL is committed to be an Environment friendly company in all its areas of activities, products and service, providing safe and healthy working environment.

In line with the company's strategy, Environment Improvement Projects and Community Development Programmes are given special thrust. Some of the major EIPs executed in the past at BHEL plants and townships included tree plantation drives, installation of rain harvesting plants, efficient water and energy management, reduction in noise level, improvement in chemical storage and handling systems etc.

In line with DPE Guidelines on Corporate Social Responsibility for CPSEs, the Board constituted the Board Level Apex Committee for CSR on 25th November, 2010 for proper & periodic monitoring of CSR activities. Further, in terms of DPE Guidelines on Sustainable Development, the Board of Directors mandated that the Committee will also oversee Sustainable development activities. Accordingly, the said Committee was re-designated as "Board Level Committee for Corporate Social Responsibility (CSR) & Sustainable Development (SD)" in year 2011. It is having independent and functional directors of BHEL as its members and is headed by independent director. BHEL has defined its SD policy keeping in view the scale & nature of organization's activities, products & services.

The SD projects are having thrust on the projects in the fields of Rain water harvesting, afforestation, captive power generation based on Solar energy, use of renewable energy, energy efficiency & conservation and waste disposal. The SD Policy of BHEL is produced below:

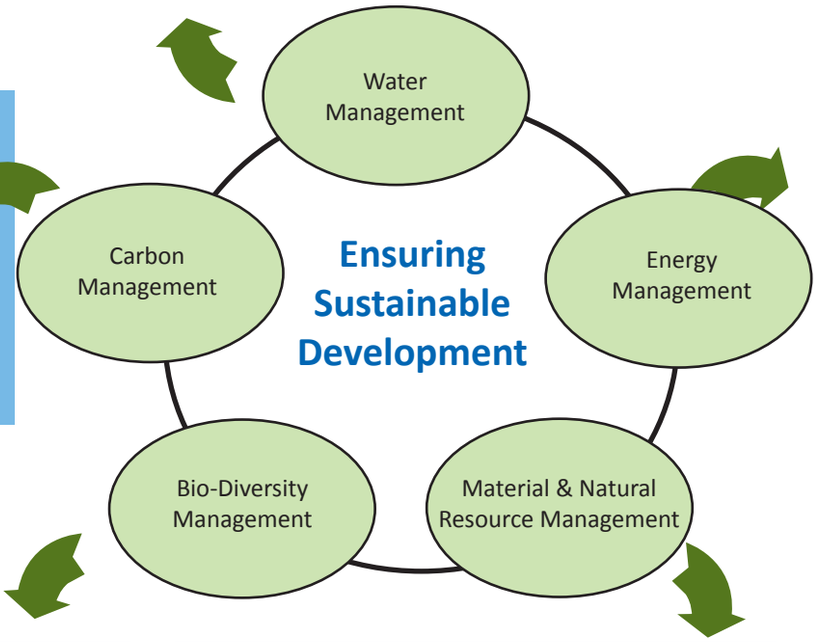
Sustainable Development Policy for BHEL

- *We at BHEL offer products, Systems and services designed to benefit the sociey.*
- *We are commited to undertaking practices that meet the economic, ecological and social responsibility tenets of Sustainable Development.*
- *We will work with all our shareholders to ensure contineous improvement in the sustainable Development of our operations within the ambit of the guidline issued by Government of India.*

In order to initiate Environment Sustainability, the Corporate Health, Safety & Environment (HSE) group in BHEL is vested with the responsibility to align the Global Reporting Initiative (GRI-G3) guidelines with existing

management system framework with compliance to principles of Inclusivity, Materiality and Responsiveness. Two Tier (Corporate & Manufacturing units) organization structure has been developed under Corporate HSE & CSR department to establish, implement, monitor, measure & improve the Environment performance towards Sustainable Development.

- Establishing Waste water recycling plants in all major manufacturing plants
- Rain water harvesting implementation
- Become a supplier of Waste water re-cycling equipment for Utilities. Urban applications, Municipalities adopting re-use of waste water. etc.



- Development of higher efficiency ESPs
- Develop & commercialize applications in the area of emerging technologies carbon capture, Co_2 sequestration

- Introduction of Energy Management System (EMS) in units by installation of suitable appliances, automation & controls
- Supplier of Energy efficient equipment viz. variable frequency drives, Static Synchronous Compensator (STATCOM), controlled Shunt Reactor (CSR) ect.
- Enhance use of renewable power at own units/ sites-use PV based street lights, emergency power, Solar heating systems, etc.

- Plantation of trees in manufactureing plants, Townships & catchment areas

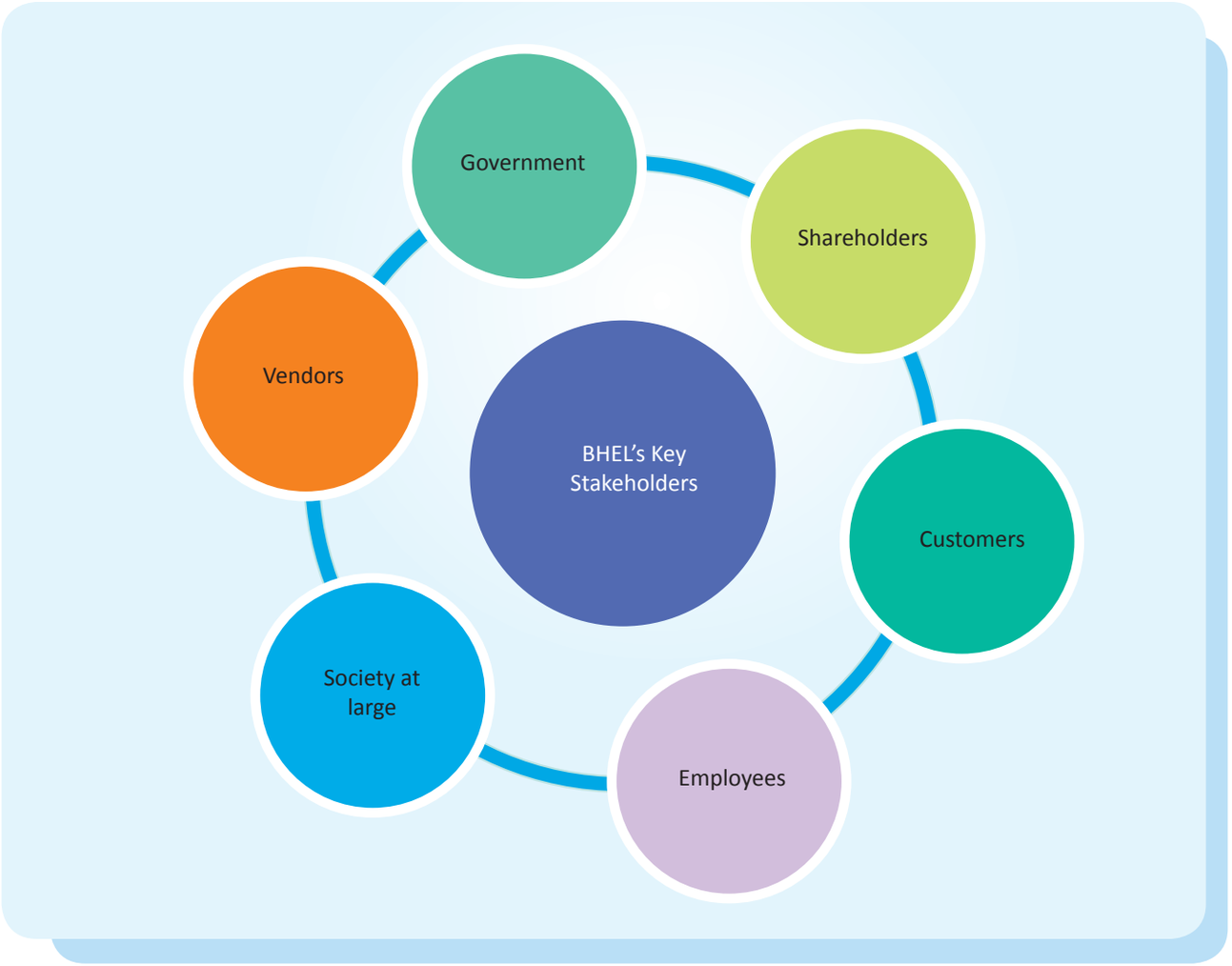
- Incorporate changes in packing philosophies using bio-degradable materials and avoiding using natural wood etc.
- Work towards designs of thermal plants with reduced footprint

At unit level, Nodal officers has been designated to co-ordinate the SD activities at unit supported by team of officials. Capacity building / appreciation programme for these nodal officers are organized periodically.

Further to address the Product Sustainability issue, under the aegis of the National Mission on Clean Coal Technology, BHEL, in association with IGCAR, NTPC and other organizations, is developing Advanced Ultra Supercritical Technology. In conformity with Green energy initiative, an energy efficient largest single cylinder non-reheat steam turbine for 100-140MW application has already been developed to harness waste heat. BHEL supplied Space Grade Solar Panels totalling to 221 sq. mtrs. in area are in use for various satellites of ISRO.

Stakeholder Engagement

The organization has a well developed framework for identification of stakeholders. BHEL is committed to being accountable to those on whom the organisation has an impact and those who have an impact on BHEL.



BHEL continuously maps its stakeholders and has regular processes in place to ensure inclusion of stakeholder concerns and expectations. Key issues are identified through ongoing stakeholder engagement and addressed by programmes or action plans with clear and measurable targets. To educate our internal stakeholders and disseminate the concepts of Sustainable Development, focused training programmes were organised at Bangalore, Hyderabad, and Bhopal and Trichy unit.

BHEL also endeavors to educate its stakeholders on various social issues as well. Save girl child, eradicate corneal blindness through vision to all – BHEL's call was taken in big way.

The Table 1 shows modes of engagement with the key stakeholder group and particulars of activities done in the year 2011-12.

Table 1. Stakeholder Engagement				
Stakeholder Group 2011-12	Level of Engagement		Mode of engagement	Particulars of activities conducted in 2011-12
	Corporate	Unit		
Customer	√	√	Customers' meet	Customers' meet, Customer Survey
Vendor	√	√	Vendors meet	Vendors Meet, Survey
Government & Statutory Bodies	√	√	MoU, Reports	MoU, Environmental Statement, Parliamentary Committee meetings
Corporate Bodies	√		Meetings	Meetings with members of SCOPE, FICCI, CII
Society at large	√	√	CSR Programme, Baseline Survey / need identification	CSR Projects, Interaction with people through site visits for CSR,
Employees	√	√	In-house magazine, Message from CMD, Employee engagement survey	Pratibimb, Arunima, CSR meet for nodal officers, SD Meet for Nodal officers, Employee engagement survey, Plant council & Shop Council Meetings
Shareholder	√		Annual Report, Press Releases	Annual General Meeting, Press release, Conference call with minority shareholders

Participation in the UN's Global Compact Programme

As the world's largest global corporate citizenship initiative, the Global Compact Program is the first and the foremost concern which is exhibiting and building the social legitimacy of business and markets. BHEL has continued to play a prominent part in the United Nation's Global Compact Programme on CSR by promoting the core values on human rights, labour standards, environment and anti-corruption and intends to advance these principles forming part of its strategy & culture within its sphere of influence. BHEL demonstrated its commitment through regular pooling of communication of progress (COP) on the UNGC website. BHEL periodically submits annual Communication of Progress on the relevant principle of global compact in respect of Environmental issues. It gives an excellent platform to engage with its stakeholders worldwide through UN Global network. BHEL has now become a life member of Global Compact Network, India.

Company publicly advocates with its employees and other stakeholders and regularly incorporates its commitments towards Global compact programme through its Annual report, press conferences and other public documents. This is considered to be an important tool by BHEL for engaging with our stakeholder on a worldwide platform.

Key Sustainability issues, opportunities and concerns

Based on stakeholder engagement framework, materiality analysis and market study, key Sustainability issues, opportunities and concerns have been identified. The same has been depicted in the diagram shown below. As it is clear from the diagram, environmental degradation & resource depletion, pollution and accident prevention, climate change and energy security, talent management and stakeholder engagement have been identified as major sustainability issues.

Key Sustainability issues, Opportunities and Concerns

Risk & Concerns

- Dependency of Growth prospects on policy intervention
- Uncertainininty about domestic conditions
- Lack of clarity on availability of coal, land issues, and environmental clearances
- Bleak market condition due to high interest rate & uncertainty in finalization of projects

Oppotunities:

- Energy Efficiency
- Tremendus demad for electricity
- Development & Deployment of low carbon Tech.
- Diversification into new segments
- Enhancing brand image through CSR

Threats:

- Increased competition from foreign players
- Shortage of vendors for BoP packages
- Policy uncertainty

Key Sustainability issues

- Enviromental degradation & Resource Depletion
- Talent Management
- Pollution & Accident Prevention
- Climate change and Energy Security
- Stakeholder Engagement

Health, Safety and Environment Management

BHEL gives utmost importance to health and safety of its employees going far beyond the statutory provisions and requirements of various legislations. BHEL ensures free medical services for the employees and their families through effective use of BHEL Hospitals/Dispensaries and other world class infrastructure available in the country. Not only this, even retired employees are also covered in the BHEL health scheme.

BHEL launched the Occupational Health & Safety (OHS) programme on its own on 3rd May 1976. The OHS program is a multi–disciplinary total health symphony, comprising of protective occupational hygiene and ergonomics monitoring of work–places and work–practices, detective toxicological studies to identify and eliminate dangerous chemicals from work processes, periodic "Man Maintenance" programs for risk–groups, effective "Well Person" Screening programs, health education and psychological guidance for employees either individually or, in groups, altogether making up an effective and comprehensive health promotive, curative and rehabilitative service.

In 1982, National Model Centre for OHS was inaugurated at BHEL Trichi by the Govt. of India, funded by the UNDP and executed in technical collaboration with the ILO. The OHS centre comprises of various functional units which facilitate high quality technical expertise. These Include Occupational Medicine, Occupational Hygiene, Audiology, Health Information Systems, and Health Education and Training etc.



BHEL is committed towards providing safe working environment to all its stakeholders. Plant Safety Committees consisting of equal number of union representatives of workers and management have been constituted to promote co-operation between the workers and the management in maintaining proper safety and health at work and to review periodically the measures taken in that behalf.

Safety awareness campaigns are organized by each BHEL's units/regions regularly on the date set by them. On safety day, 4th March every year, unit/region Heads address the gathering comprising of HODs, Safety Committee members, HSE coordinators, Representatives of Unions/ Associations & Cross section of employees. Safety banners, posters, & stickers are displayed at prominent places inside the factory premises. The suppliers / transporters are informed through normal communication channels. Laminated boards of HSE policy are displayed in prominent places.

Safety is an everyday activity in BHEL. Safety officers, Supervisors, Safety Stewards play a key role in promoting Safety. The safety week was observed at all the units of BHEL and objectives at units in 2011-12 were as follows:

- Involvement of maximum number of employees, propagate the message of safety to one and all
- Reduction in Incidents and Accidents
- Safety drills at Construction Sites
- Creating safety awareness amongst workers
- Involving all cross section of workers in safety commitment
- Creating roadmap for safe work environment
- Safety Calendar distribution and putting up safety related posters at strategic locations
- Creating more awareness among all employees regarding Health, Safety & Environment.
- Providing information to the employees regarding hazards involved in their work area.
- Training & Awareness programs for Slingers, Crane Operators, Welders, Machinists etc. for creating accountability amongst employees in accepting responsibility to prevent physical injuries, risk to health and damage to environment.

- Promotion of activities for conservation of resources by Environmental Management with focus on Oil, Electrical Energy and Chemicals.
- Providing information to eliminate / control / minimize risks and hazards arising out of Internal and External sources.
- Providing technical guidance on HSE issues to Production and Service and for new projects.
- Providing Technical guidance on PPEs, Lifting equipment.

To create mass awareness among Employees, Workers, CISF Persons, House Wives and School Children, following initiatives have been taken in 2011-12 :

- Poster Competition
- HSE Slogan Competition
- HSE Quiz
- Safety Talk / Shop Floor Demonstration
- Safety Banners
- Distribution of Safety Posters / Stickers / Badges / Caps / Wallets / Leather Belts etc.
- e-Quiz
- Safety Intranet Web Page
- Safety Lectures for ETs / MTs / STs / Artisans
- Training Programs for Slingers / Crane Operators / Welders / Machinists etc.
- Conducting Mock Drills
- Fire Fighting Training
- Major safety week initiatives are enumerated below:

BHEL's commitment towards environment is reflected in all its activities, products and services, providing safe and healthy working environment to all stakeholders.

All manufacturing Units of the company are accredited to international standards viz. ISO-14001 certification for environmental management and OHSAS-18001 certification for occupational health and safety management systems.

In conformity with its commitment towards environment conservation, the company has taken up a number of Environment Improvement Projects (EIPs). These projects helped in enriching the environment, conservation of precious resources like energy, water, fuel, oil, coolant, lubricant, mitigating environmental pollution. As a part of major EIP projects during 2011-12, the company has planted 27,545 trees and successfully completed the Water harvesting project in EPD Bangalore unit for Slip house ball mill building.

Further, in keeping with the commitment to use renewable power in units, the company has installed Solar Street lighting in and around ISG building in Bangalore; PV panel module on rooftop of PCB building in EDN, Bangalore and Emergency

Solar lighting at the main receiving stations at HPEP Hyderabad during 2011-12. In bid to ensure green supply chain, Study of Supply Chain Management was completed at Hyderabad unit. Energy audit was completed in Insulator Plant, Jagdishpur; EPD, Bangalore and HPEP Hyderabad units. A 250 KWp SPV Power plant has been commissioned at our R&D Hyderabad centre.

BHEL has been actively developing and acquiring clean technologies for power generation enabling its customers to minimize the impact of power generation on the environment. Reinforcing its commitment to optimum utilization of natural resources as well as its concern for the environment, BHEL has developed dynamic classifier system to improve combustion efficiency of boiler and reduction of NOx emission.

The Company won the prestigious 'Golden Peacock Award for Occupational Health & Safety 2011' for significant achievements in the field of Occupational Health & Safety.

Corporate Health Safety & Environment Policy

BHEL is committed to being an environment friendly company in all its activities, products, and services and to provide safe and healthy working environment to all employees as an intergral part of business performance through:

- Compliance with applicable Legislation and Regulations
- Continual improvement in the Occupational Health, Safety and Environmental Management
- Systems Performance
- Promotion of activites for conservation of resources by Environmental Management
- Enhancement of Environmental, Safety and Occupational Health awareness amongst employees,
- Customers and suppliers by proactive communication and training
- Periodical review of Occupational Health, Safety & Environmental Management Systems to
- Ensure its continuing suitablility, adequacy and effectiveness
- Communication of this policy to all employees and interested parties
- Coordination with concerned Government agencies/regulatory bodies engaged in Occupational Health, Safety & Environmental activities.

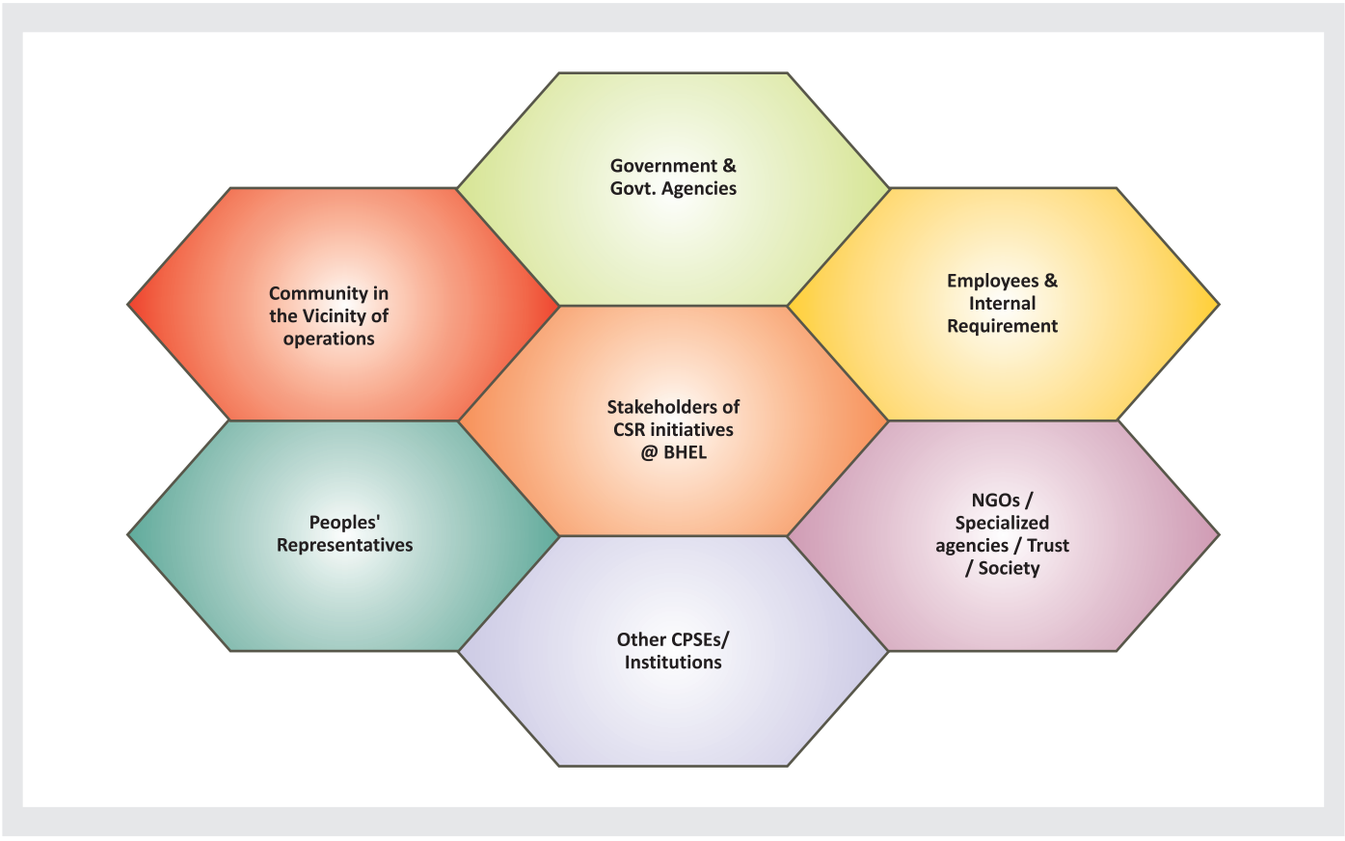
This policy shall be made available to all employees and interested parties.

Social Performance

Management approach towards CSR

In the 427th meeting of the Board of Directors of BHEL, held on 23rd July, 2010, BHEL adopted DPE guidelines on CSR as its CSR Policy with annual non-lapsable CSR Fund @ 0.5% of Profit After Tax (PAT) of previous year from 2010-11 onwards. For implementation of CSR activities Eight (08) Priority areas have been identified.

There exists a three tier committee structure in the Company consisting of Sub-Committee, Level 1 Committee and Board Level Committee (BLC) for CSR & SD. The BLC consists of three independent and two functional Directors.


Government &
Govt. Agencies
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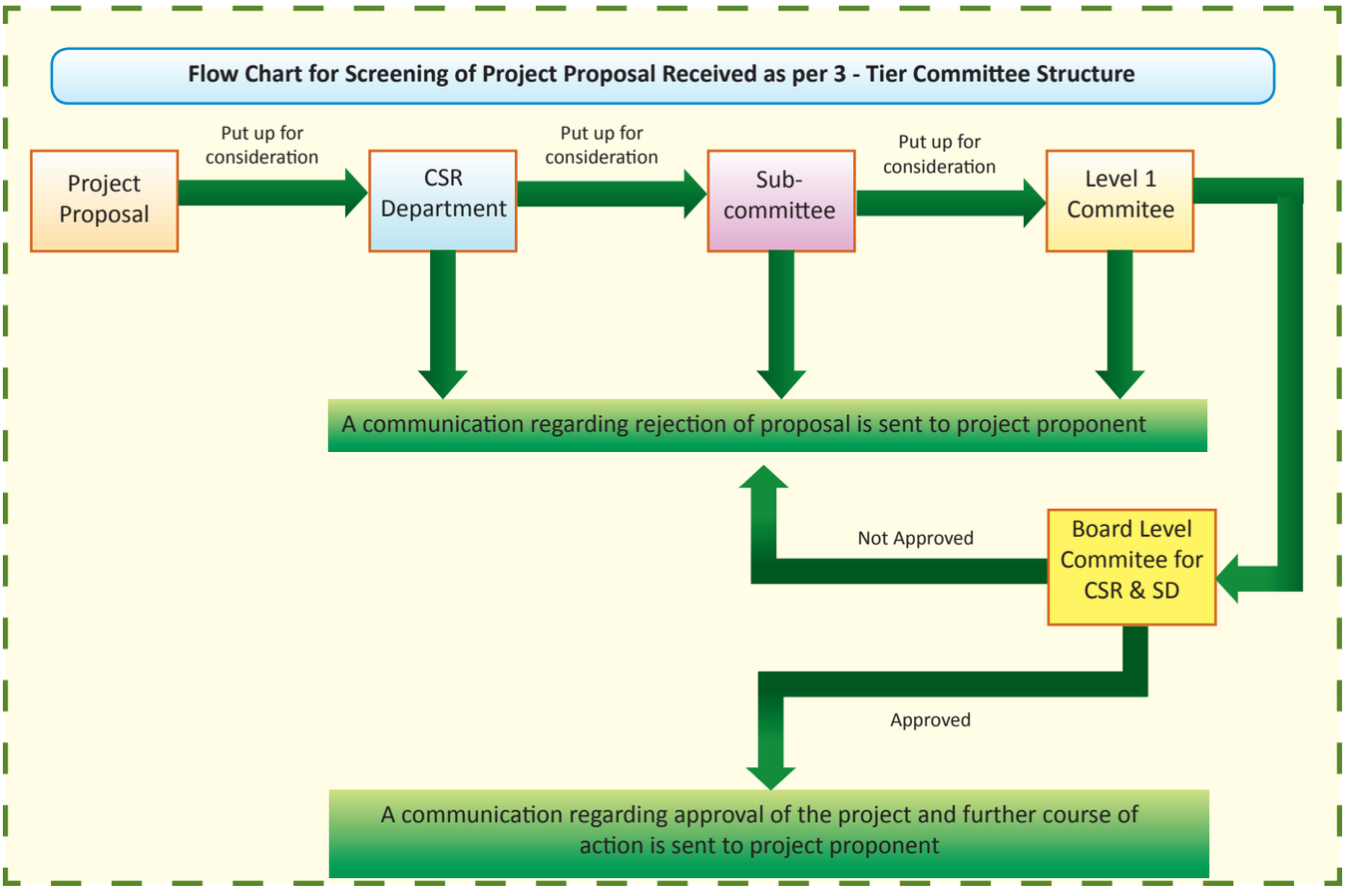
agencies / Trust
/ Society
Other CPSEs/
Institutions


Flow Chart for Screening of Project Proposal Received as per 3 - Tier Committee Structure
Project Proposal
Put up for consideration
CSR Department
Put up for consideration
Sub-committee
Put up for consideration
Level 1 Commitee
A communication regarding rejection of proposal is sent to project proponent
Not Approved
Board Level Commitee for CSR & SD
Approved
A communication regarding approval of the project and further course of action is sent to project proponent

After the approval from Board, the projects are aligned to different Units / divisions / regions for coordination and monitoring. Their implementation is being carried out by NGOs/ specialized agencies and reports at regular intervals submitted to aligned Units. The unit head is the nodal officer for CSR and a CSR Committee exists at unit / division/ region level which is involved in the monitoring, supervising and Coordination of CSR Projects/Initiatives.

Corporate Social Responsibility @ BHEL

Towards addressing the second pillar of Triple Bottom Line Approach for Sustainability, BHEL has developed a CSR scheme and its Mission Statement on CSR is "Be a Committed Corporate Citizen, alive towards its Corporate Social Responsibility". BHEL has adopted a CSR Policy in line with the CSR Guidelines issued by Department of Public Enterprises.

Fostering the tradition of repaying the society at large by actively participating in the welfare of local communities through numerous Corporate Social Responsibility initiatives, BHEL undertakes socioeconomic and community development programmes to promote education, improvement of living conditions and hygiene in villages and communities located in the vicinity of its manufacturing plants and project sites spread across the country. Thrust is being given in eight areas- Self employment generation, Environment protection, Community development, Education, Health management & medical aid, Orphanages & Old-age Homes, Infrastructural development and Disaster / Calamity Management. In addition, BHEL provides financial assistance to various NGOs/Trusts/Social Welfare Societies that are engaged in social activities throughout the country. Reaching out to the distressed victims in the earthquake-ravaged areas of Sikkim, BHEL has made a humble contribution to help alleviate their suffering during 2011-12.

Before Renovation | After Renovation

Submersible Sewerage Pump House, Haridwar

During 2011-12, as part of social commitment, 7,941 Act Apprentices were trained in the company. In addition, 8,419 students/trainees from various professional institutions underwent vocational training.

BHEL has been supporting socioeconomic and community development programmes to promote education, improvement of living conditions and hygiene in villages and communities located in the vicinity of its manufacturing plants and project sites spread across the country through various projects both at Unit level and by specialized agencies. BHEL's endeavour has been to bring a change in the lives of the communities existing around us so that people living in these communities can exercise control over the conditions that impact their lives.

Aforestation at Koppal District, Karnataka

Understanding the responsibility towards protection of environment, BHEL initiated a project in Karnataka which comprises of afforestation in a barren land at Ramadurga in Koppal district. The project involves planting of fruit-bearing

Earthen pond for storm water retention under construction, Haridwar

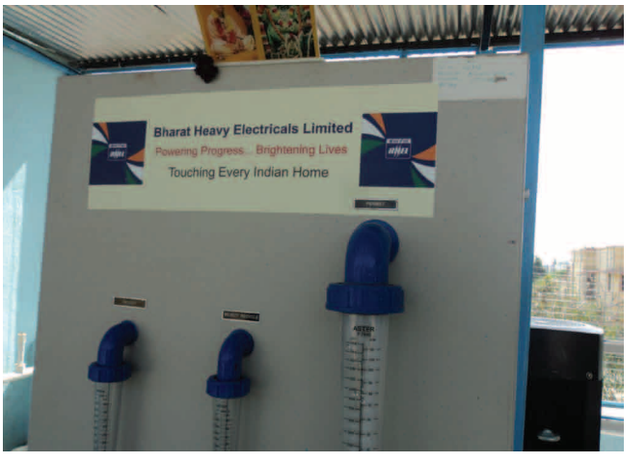
trees in a complete patch of barren land and preserving these trees for birds and animals thereby promoting species protection.

In this area, another project was started for rain water harvesting at Shivalik hills roots in Haridwar by building specially designed tanks and check dams for the purpose of collecting the flowing rain water which otherwise might have been wasted or caused flooding. The tanks have a capacity to store more than 45,000 cubic metre water thereby ensuring that the level of underground water table in the area has increased. The check dams will obstruct the fast flow of gushing water from the hills. The project has been successfully completed.

In our country, the basic needs of human beings like clean and hygienic living conditions, pure and safe drinking water, and access to basic medical facilities etc. are not getting fulfilled. Realizing the importance of providing these basic facilities and being alive towards the social needs of communities, BHEL successfully improved the sewage system at Haridwar, to supplement the requirement of Ganga Pollution Control Unit, Uttarakhand Peyjal Nigam, Haridwar. The company believes in the dictum of "Cleanliness is Godliness" and hence taking a number of initiatives in the field of sanitation and hygiene so that people can live in neat and clean surroundings, free of squalor and diseases.

Community Friendly Movement at Munger, Bihar

To supplement our health and hygiene programs, we have initiated a program called "Community Friendly Movement" in 25 villages of Munger district in Bihar. Through the program, we will achieve four different objectives of i) Dairy development, ii) Bio mass fuel, iii) Women Health & Hygiene and iv) Food Processing & Preservation, for the holistic improvement in existing living conditions of people in these villages. Under the program, a milk chilling unit will be installed for preservation of milk and supplying it to communities. Further, briquettes made through bio-mass fuel will be provided to villagers for convenient preparation of food without causing pollution that arises out of traditional 'chulhas.' The third initiative in this line is the installation of sanitary napkin making unit to provide low cost sanitary napkins to village women and provide the basic hygiene. A food processing and preservation unit will also be installed for the convenience of villagers.



Going beyond the basic needs of the community, and working in entirety for the communities by supporting the education programs, the company has successfully installed Six Reverse Osmosis plant units at Bellary, Hubli, Puri, Vrindavan, Gandhinagar and Vadodra to provide safe and pure water for school children in the base kitchens for mid-day meal programs managed by Akshaya Patra foundation.

In addition, we have also provided five food delivery vans in the Guwahati Region in Assam to supplement the mid-day meal programme under the “Sarva Shiksha Abhiyaan” by the Government of India in order to provide hygienic and hot food to school children.

Recognizing the importance of involving various communities for inclusive and participatory growth, we have launched a program at Hatia, Ranchi in our endeavor to provide care and support to senior citizens by building a self-sustainable old age home for them. Under the program, construction of cow shed, shed for making vermin compost, installation of Bio gas plant has been taken up.

Project with VISKASAN, a free home old helpless people , Ranchi, Jharkhand

Adopting a multi-disciplinary approach towards CSR in which health and medical care, hygiene, sanitation, provision of pure drinking water and education take the top most priority, BHEL initiated projects titled ‘Vision to all’ in (i) Guntur district of Andhra Pradesh to carry out cataract operations for five hundred patients; and (ii) another unique project, for carrying out 300 otsurgeries for eye-patients from Andhra Pradesh, Orissa and Chattisgarh commenced at Sankar foundation Eye Hospital in Vishakhapatnam (AP). In addition to this, the company has been organizing free health check-up camps for workers at its different sites/ regions as preventive measures for various ailments.

Realizing the extent of the spread of cancer in the country with thousands of patients suffering from the horrible disease, the company in its efforts to eradicate cancer from society, has joined hands with Shradha Cancer Care Trust for construction of a 30-bed Hospice in Rishikesh to provide free of charge in-patient medical care for terminally ill cancer patients.

In addition, we have also partnered with Global Cancer Concern India (GCCI) for detection of cancer amongst poor and helpless people. In this line, a series of cancer detection camps at Noida, Delhi and Gurgaon have been conducted for detection of cancer in patients and providing them medical assistance for its treatment.

At our Unit level, we have been undertaking several initiatives in nearby villages and areas for the development of community infrastructure, promotion of livelihoods, improving access to health care and education. Under this, we have taken renovation of one

Triveni girl's hostel near our Bhopal unit. We have provided furniture to old age homes near our EDN unit, Bangalore.

To provide hygienic sanitation facilities, construction of toilets for women at Aurangabad, Haridwar was successfully accomplished.

In this way, BHEL is trying to make a difference in the lives of the communities not only in the vicinity of our units but across whole country through in frastructure creation and providing services for public benefit.

Taking the focus on Community development beyond the basic needs of health and education, BHEL organizes various programmes for talent up-gradation of social and economically backward students for their empowerment in order to make them self-reliant. It supported one such program for Apparel training of students belonging to below poverty- line families in Chhindwara district, Maharashtra. Organized a Cutting and tailoring training programme through NGOs for ladies in Jhansi to provide livelihood opportunities and empowerment of women.

Toilets in Zila Parishad High School Madhavaram, Hyderabad

6 Class rooms constructed for Govt. middle School, Malaikovil, Thiruverumbur North

The Company is promoting various Scholarship Programmes for students to enable them pursue higher education. Under these programmes, financial assistance is provided to wards of widows in adopted schools and villages by units. Supporting need based Construction of hostels, classrooms, toilets etc. in educational institutes.

To meet nation's requirement of skilled manpower, BHEL has adopted various ITIs under the Government of India PPP scheme (Government ITI, Latur by Hyderabad Unit, Government ITI Bajpur by Rudrapur Unit, Government Women ITI, Khandwa & ITI, Khaknar by Bhopal Unit, Government ITI, Peramvalur by Tiruchy Unit – Under approval by state Technical Board), Government ITI, SIDCUL, Haridwar by Haridwar Unit – Under approval by state Technical Board).

Cutting and tailoring training programme for ladies in Jhansi

As part of its CSR initiative regarding talent up gradation/skill development, BHEL, in association with CIL, DVC & SSDA has set up Kabiguru Industrial

Training Centre (KGITC) at Bolpur, Santiniketan (West Bengal) to provide high quality technical education and to give a fillip to the economic development needs of the area. Phase-I of the Institute is ready. All the four trades, i.e. Fitter, Welder, Plumber and Dress-making have been affiliated under NCVT. The classes for Fitter trade with 42 students (including 02 girls) are in progress since Aug 2010. For the remaining 03 trades Welder, Plumber and Dress-making, admissions are in progress for the sessions to commence shortly.

Environment Performance

Management Approach

BHEL's Health, Safety & Environment policy is aligned to international standards on Environment Management systems (ISO-14001: 2004), Occupational Health, Safety Systems (OHSAS-18001: 2007). All manufacturing Units/Regions of the company are accredited to international standards viz. ISO-14001 certification for environmental management and OHSAS-18001 certification for occupational health and safety management systems.

In order to initiate Environment Sustainability, the Corporate HSE is given responsibility to align the GRI-G3 Environment performance indicators with existing management system framework with compliance to principles of Inclusivity, Materiality & Responsiveness as per Accountability AA 1000 APS. Two Tier (Corporate & Manufacturing units) organization structure have been developed under Corporate HSE department to establish, implement, monitor, measure & improve the Environment performance towards Sustainable Development.

Material Consumption

BHEL stresses upon lesser & effective utilization of various natural resources used in the manufacturing of its diverse range of products. The consumption of major raw materials at BHEL categorized by the nature of raw materials and specific units of measurement has been given below.

Due to large portfolio of products, the raw materials are also diverse in nature and their measurement in terms of either weight or volume is not possible. Due to this non-uniformity of measurement units, it is very difficult to compare raw materials consumption on year to year basis as clear from Table 2 shown below.

Table 2. Material Consumption data

Description	Unit of Measurement	Total Quantity (2011-12)	Total Quantity (2010-11)	Total Quantity (2009-10)
Ferrous materials	MT	647585	697453	633825
	Meters	16084481	13749271	9088417
	Nos.	5839126	5184210	3831321
	Sq M.	50035	958	12
Non ferrous materials	MT	6101	31797	26376
	Meters	3050477	1757921	2144535
	Nos.	211852	274269	187313
	Sq M.	96	242	194
	RL	26960	27781	20902
Insulating materials	MT	33058	76561	17489
	Meters	79130216	68635813	60428160
	Nos.	469400	730866	427241
	Sq M.	2024396	1766852	2156714
	RL	135391	216335	177783
	LT	5268930	7290736	4592485
	ST	509	411	397

However, integration of units provides BHEL the opportunity to reduce its environmental footprint through optimal material utilization and waste reuse/recycling. BHEL has a good system of recycling/reusing its waste. Scrap generated from all the units is sent to Central Forge & Foundry Plant (CFFP), Haridwar where it is converted into usable material which serves as raw material for the manufacturing of Castings & Forgings, required for the manufacturing of power equipment. The total ferrous scrap from BHEL's sister units to CFFP Haridwar and its own recycling of ferrous scrap constitute around 28278 MT. Realizing this, BHEL has taken some initiatives to reuse the raw material wherever possible, BHEL recycled/reused nearly 3-5% of its materials as recycled input materials, therefore reducing impact on natural resources.

Energy Consumption & conservation

Direct: The major primary sources of energy and total energy consumed at identified 14 units has been given in Table 3 below.¬

Table 3. Energy Consumption data

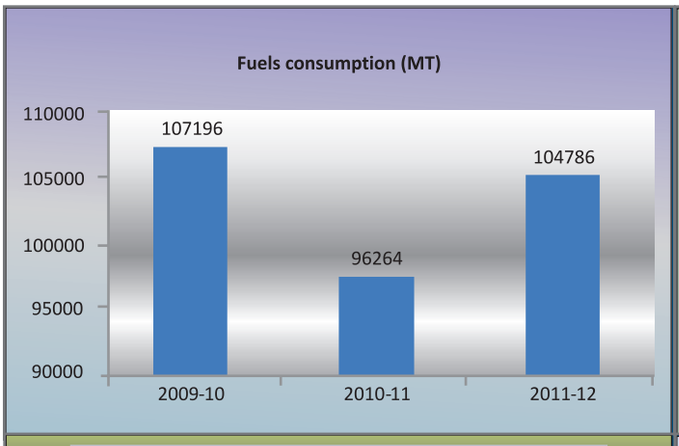
Description	Energy Consumed in TJ (2011-12)	Energy Consumed in TJ (2010-11)	Energy Consumed in TJ (2009-10)
Direct Energy			
Primary Energy Fuels Consumed (Diesel, Coal, LPG, Kerosene etc.)	3167	2885	3273
Primary Energy Produced (Through Solar Energy generation)	0.11	0.21	0.19
Indirect Energy			
Electricity Consumed	1400	1256	1234
Total (TJ)	4567	4141	4511

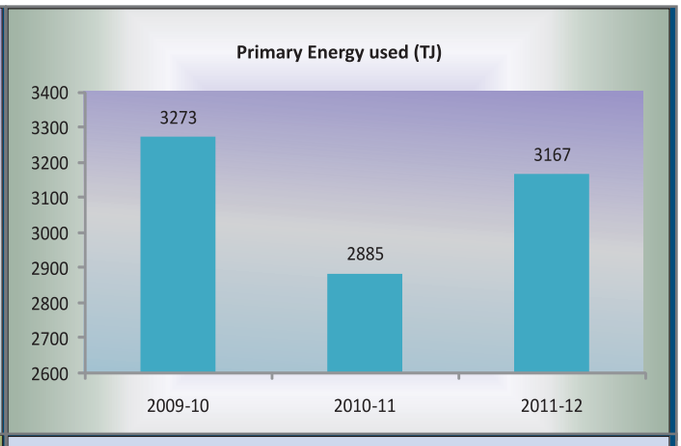
New Electronic Shop - a Green Building at BAP Ranipet

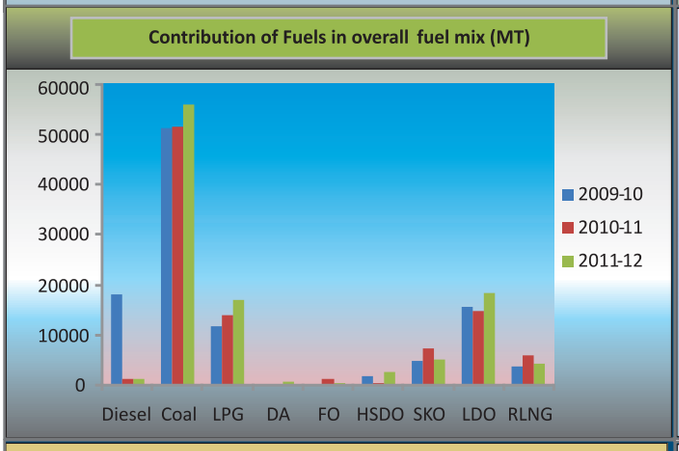
Solar Water Heating System for ET Hostel at R&D Hyderabad

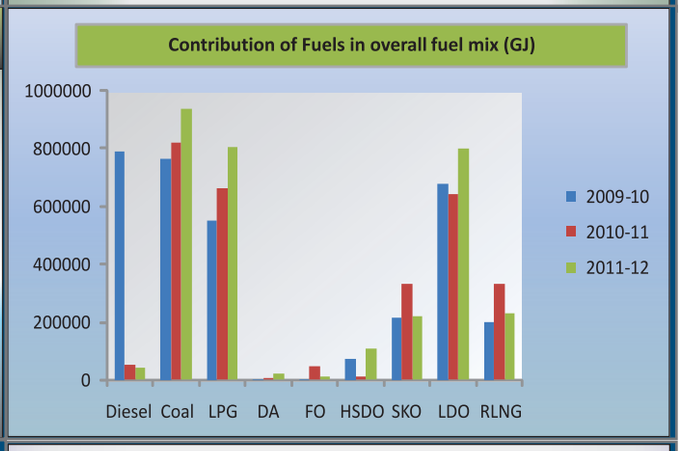
The conversion factors for fuel consumed have been taken as per IPCC Guidelines. The average direct energy consumption for the last three years was 3018 TJ whereas the 3 years average of indirect energy consumption due to electricity was 1297 TJ. Put together, the total average energy consumption for the last there years was 4406 TJ. The figures below show the different energy consumption, the fuel mix and other related information.

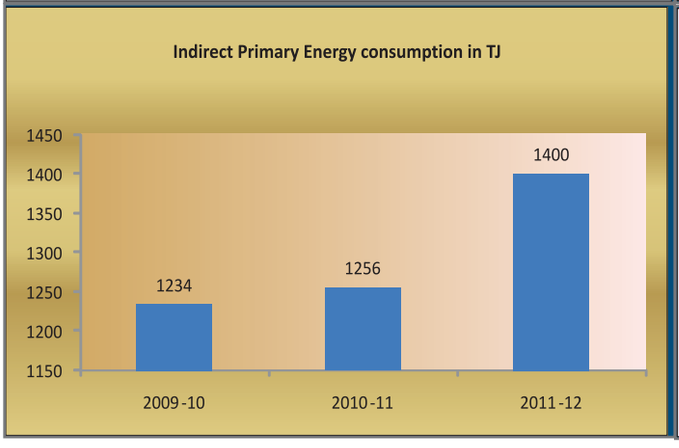
consumption for the last there years was 4406 TJ. The figures below show the different energy consumption, the fuel mix and other related information.

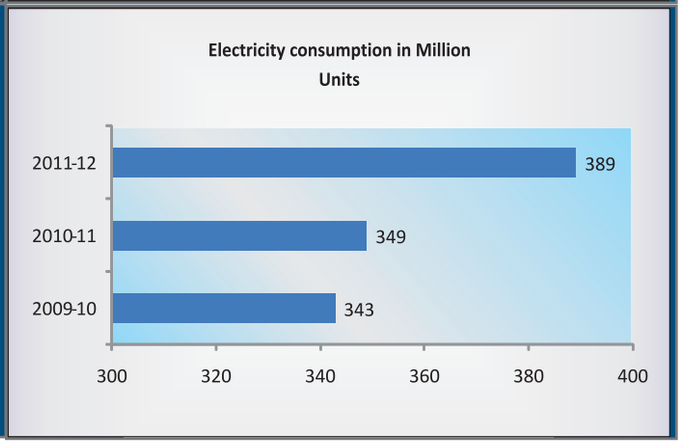




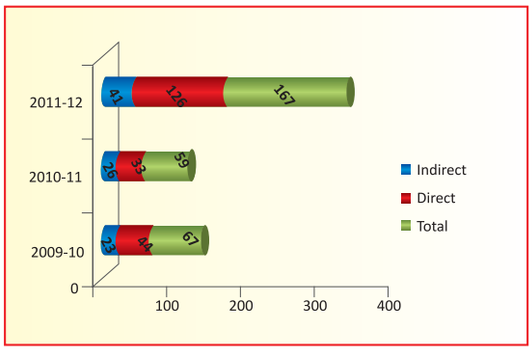


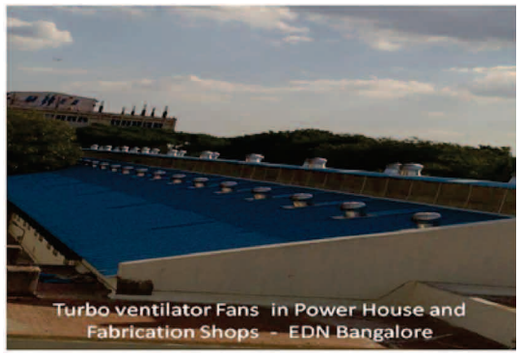






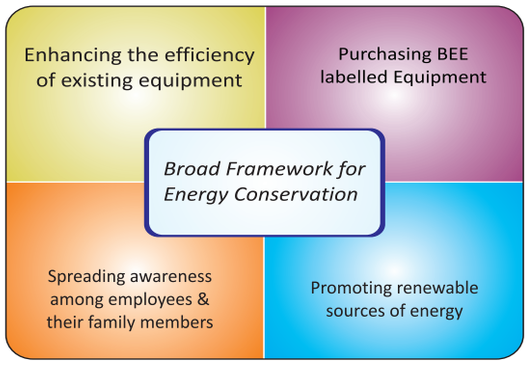
Energy Management is an important thrust area in BHEL so energy conservation and energy efficiency has always been a very important endeavor for BHEL. As a result of various energy efficiency and conservation initiatives in the process redesign, conversion/retrofitting of equipment, changes in personnel behavior etc. taken at units, total 167 TJ of energy has been avoided during 2010-11. During this period nearly 11 Million Unit of electricity usages was





avoided due to such initiatives. This year the major contribution of energy use avoidance has come from fuel switch (126 TJ).

BHEL has formed a broad framework for energy conservation across the organisation.

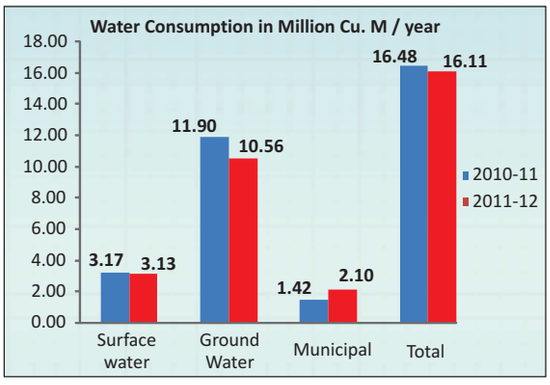


Major activities undertaken for energy conservation (during the financial year 2011-12) were:

1. Key personnel were certified as Energy Manager/ Energy Auditor at manufacturing units.
2. Energy conservation week was celebrated across the company from 14th to 21st December. Several competitions like painting, essay writing in regional language, quiz, were organized in units/ offices, schools and townships.
3. Energy audit was conducted by external agencies like PCRA, TERI etc. at HPEP Hyderabad, IP Jagdishpur, and EPD Bangalore to find OFI (opportunities for improvement).
4. Solar street lighting had been installed to tap renewable energy.
5. Guidelines for Procurement of Energy Efficient Equipment on the basis of LCCA (Life Cycle Costing Analysis) were issued.

Water Management

Water Management is one of the major Environment Improvement Projects (EIPs) at BHEL. As is evident from the graph below the major source of water for BHEL is Ground water/Surface water, the next in line is municipal water supplies. The total water consumption at BHEL manufacturing units the year 2011-12 was 16.11 Million M3 (industrial as well as domestic consumption). It also includes 39724 Cu Mtr. of waste water used at EPD Bangalore unit. It may be observed from the data that over the period, the water consumption in BHEL has not gone up, thereby establishing that there is decoupling between water usages and increase in turnover.



This has been made possible by BHEL's concerted efforts in developing rainwater harvesting potential within its units. In our smaller units these are mostly of based on the buildings. However in the larger units, independent rain water harvesting structures have been created resulting in huge quantity of rainwater being recharged to the ground.

Ceramic membrane based micro filtration ~ 200 nm – Reuse of Waste Water at EPD – Bangalore

Re-cycling and reuse of water is also a major strategy for reduction in the consumption of fresh water resources. Water is mostly being recycled in Industrial cooling and reused in horticulture & Ground water recharging at units.

Units such as BHEL-Trichy & BHEL- Ranipet have taken steps proactively on water conservation by way of ground water recharge through rain water harvesting on one hand and making their unit as Zero discharge unit on the other hand. At Trichy unit, 100% treated trade effluent water is used for irrigation within the complex to maintain Zero Discharge hence avoiding contamination of the water body. Recycling of Hydro Test Water, cooling tower from SSTP, treated sewage water from Township and factory are the facilities operating in full capacity.

1 Million Gallon Rain Water reused after treatment in Filtration Plant inside Factory area

A Stop Dam constructed inside Factory Area for Rain Water Conservation - Bhopal

Jawahar Baug – rain water Harvesting at Bhopal

Rooftop Rainwater Harvesting at EPD Bangalore

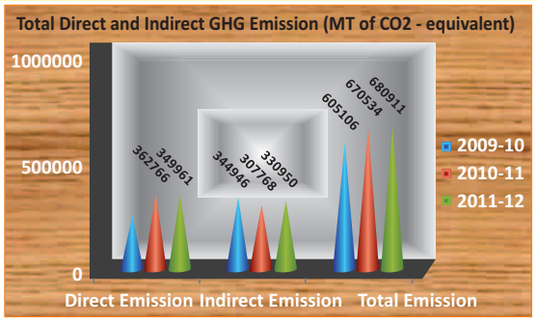
Also as part of its strategy, water discharge from the process and sewage is treated at Effluent Treatment Plant / Sewage Treatment Plant and reused for horticulture. BHEL reflects compliance to the environmental norms as the quality parameters for the discharged water are within the limits as specified by the state Pollution Control Boards for each of the units. Out of total quantity of water drawl, approximately 27% was discharged as waste water during 2011-12.

Biodiversity

As such none of the BHEL units is surrounded by any biodiversity / protected area. With respect to its concern for environment, BHEL has undertaken afforestation activities such as tree plantation & development of

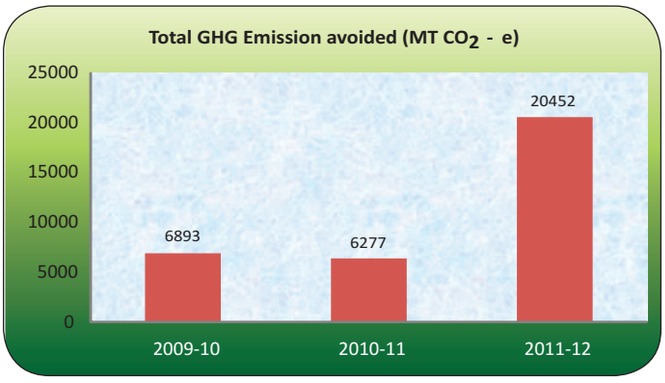
green belt, resulting in development of approximately 47 Lakh Sq. M of green coverage and plantation of around 30 Lakh trees in and around units. 27545 trees have been planted across various units of BHEL in 2011-12. BHEL Trichy unit has a tree density of 3600 / hectare and one of the effects of high tree density / hectare is that the ambient temperature here is about 2^0C lesser than that in the city. Also here the rainfall is more as compared to the city.

Emissions



BHEL units have initiated quantification of relevant gaseous emissions; however the emission of NO_x, SO_x, SPM & other significant parameters are within the prescribed limits of the state governments. Control & monitoring emissions is undertaken regularly. The total direct & indirect GHG emission for past three years has shown in the figure. It shows that as compared to 2010-11, the direct emission has gone down whereas the indirect emission has gone up.

Fume Extraction System at CFFP Haridwar



Mobile Fume extraction system at HPEP Hyderabad

Due to various initiatives taken up to reduce the direct and in-direct GHG emission, BHEL has avoided GHG emission of approx. 20452 MT CO_2 – equivalent. This is a quantum jump from avoided emission of 6277 MT CO_2 – e. This can be attributed to reduction in Kcal of fuel consumption at CFFP Haridwar resulting in significant emission avoidance.

At most the units use of ODS in refrigerators and chillers has been stopped and at the remaining units it is being phased out. The emission of ODS was 173 kg of CFC – 11 equivalent for the year 2011-12.

Waste Management

The hazardous/Non-Hazardous wastes generated from all the units are categorized as Ferrous, Non-ferrous & Others. At all the units disposal of hazardous/non-hazardous wastes is done through MSTC/Other Authorized agencies as shown in Table 4.

Table 4. Waste Generated

Types of Wastes	Unit	Quantity (2011-12)	Quantity (2010-11)	Quantity (2009-10)	Disposal method
Non-Hazardous	MT	76522.08	83727.22	71917.60	Through MSTC/ Other Authorized Agencies
	M3	9863.19	7710.21	8090.45	Through MSTC/ Other Authorized Agencies
	MT	3426	2585.45	3325.58	Through MSTC/ Other Authorized Agencies
	Ltr.	0.00	34980	84035	
	Nos.	0.00	35	855	

The different types of waste reused / recycled at BHEL for 2011-12 is given below in Table 5.

Table 5. Waste Utilized			
Non-Hazardous	MT	2373	Reuse/Recycle
	M^3	640	Reuse/Recycle
Hazardous	MT	4.0	Reuse/Recycle

The above also includes Wood reused for manufacturing wooden boxes used for packaging of the product. This reduces the input material for packaging purposes. Also non-hazardous waste include ferrous and non-ferrous scrap also which are recycled and reused at units.

Significant spills

No significant spill has occurred during the reporting period. However, minor spillage particularly at the time of preventive machine maintenance is taken care of according to environmental management practices (ISO 14001: 2007) adopted.

Coolant Recycling Plant at HEP Bhopal

Environmental Impacts of Products & Services

Being a major player in the arena of Power equipments, BHEL understands that it has imperative to help the customer in mitigating the environmental impacts of power generation through its equipment. With this view, BHEL has been actively developing and acquiring clean technologies for power generation enabling its customers to minimize the impact of power generation on the environment. Product pertaining to power generations has been evolving since inception of company based on the current needs. These products became efficient in terms of heat rating. Some examples of various initiatives taken by BHEL in Power plant equipment design to mitigate the environmental impacts of its products and services are as below:

- Supercritical units: These units have a better heat rate than the conventional sub critical units and consume less coal per MW. This aids in reduction of CO_2 emission.
- Electrostatic precipitators: The fly ash from the flue gases are segregated & collected by the Electrostatic precipitators. Besides they also reduce Particulate matter emission.
- Boiler Burner design for Low NO_x: Low NO_x burners and Over fire air arrangement help to reduce Nitrogen Oxides emission.
- Circulating Fluidised bed boilers: It leads to higher absorption of sulphur in the combustor with lime addition and also reduces the emission of Sulphur Oxides.
- Flue gas desulphurising systems (FGD): It helps in removal of sulphur oxides from the Flue gas thereby reducing sulphur oxides emission.

In addition, BHEL has taken several steps for process improvements to minimize the impact of power generation on the environment. Some of these steps are:

- Boiler Chemical cleaning: Change from HCL to EDTA (a comparatively mild acid) with a changed procedure.
- PADO systems (Performance, Analysis, Diagnostics and Optimisation): Improved efficiency through better operations thereby leading to reduced coal consumption and emission levels during power plant life cycle.

BHEL also supplies energy efficient products like AC Drives, IGBT based propulsion systems, variable speed / frequency drives etc. To address conservation of energy, BHEL manufactures products like Static VAR Compensator, phase shifting transformers, Control shunt reactor, FACTS etc.

Additionally, BHEL units have taken many steps to reduce the environmental impacts in its boundary as well which are given in the following section

Initiatives taken with respect to:

Materials used

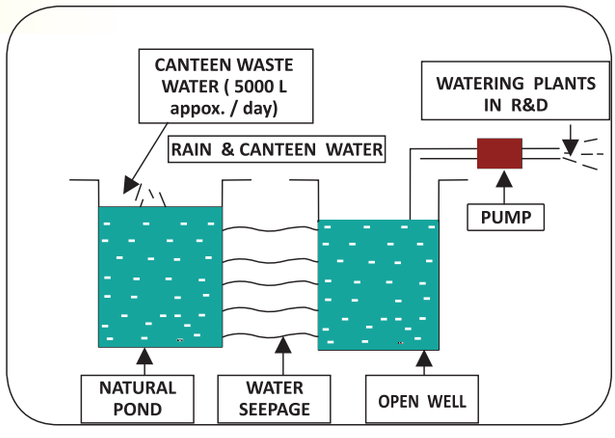
- Design Improvement for Material conservation in Large Industrial Machines – Bhopal
- Optimised design of ESP pent house-Use of roof beams instead of angle truss, Use of optimised ESP insulation retainers, Use of steel boxes instead of wooden boxes for emitting electrode packing, Modified packing methodology for Collecting electrodes, emitting suspension frames, collecting suspension frames, Optimised insulation design for ESP hoppers, Optimised collecting drive arrangement for ESP leading to reduction in inter ESP gap, Use of high strength steel for ESP supporting structure leading to reduction in material usages – BAP Ranipet

Effective utilization of day light by using light efficient (Ultra-violet stabilized)poly carbonate sheets in north lighting at EDN Bangalore

- Modification of forging & casting drawing or product with optimum machining allowances. This helps in conserving raw material as lesser is used due to redesigning – HERP Varanasi

Water used

- Recycling of water coming out of drain and Recycling plant for treated industrial effluent resulting in less use of ground water – HEEP Haridwar
- Water which is used as coolant is recycled and exhausted within the process leading to Zero water discharge - Varanasi
- Modification in the design of Fan leading to reduction in consumption of cooling water by 88% – BAP Ranipet



- By optimization process, the lube oil system capacity is reduced to 20 lpm, whose cooling water requirement is 12m^3/Hr only against 32m^3/Hr per boiler, leading to reduction in cooling water consumption by 62% - BAP Ranipet
- Treated sewage used in gardening at many of the units.

Emissions

- Development of fixture for paint spray gun resulting in VOC emission reduction through modification in paint spray gun – HEEP Haridwar
- Installed a fumes extraction system in fabrication shop resulting in Reduction in fugitive emission – Hyderabad
- Heat treatment process eliminated in shock bars and lifting holders making the fabrication process simpler and thereby eliminating thermal heating – BAP Ranipet.
- Use of Scrubber is used to capture Acid mist – EDN Bangalore
- Replacement of Coal fired Boiler to RLNG fired boiler and Conversion of Oil fired HTK to RLNG fired leading to reduction in SPM to the extent of 82% - IP Jagdishpur

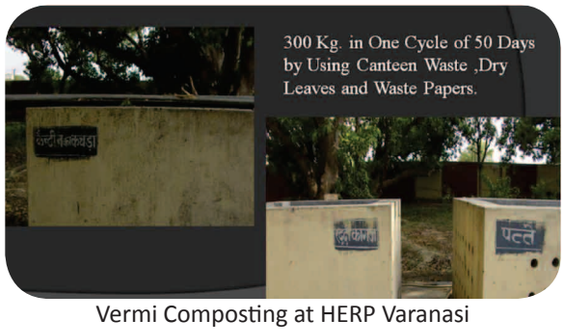
New Scrubber erected at ACID Texturisation System for washing the exhaust mist at EDN Bangalore

Noise

- Silencers are provided to fans, whose suction is open to atmosphere and acoustic insulation are provided to all the fans – BAP Ranipet
- Acoustic enclosure is used in DG Room – EDN Bangalore

Waste

- Scarps produced from cutting of M.S/ASTM plates / Rods is used as virgin material about 2.2 MT for manufacturing small sized flanges, pins, keys etc. – HERP Varanasi
- 1.8 MT Vermi compost produced from papers, dry leaves & canteen kitchen wastes, Salvaging of scrap wood for manufacturing new packing boxes, again used as packaging material (9200 CFT) which helps in conserving raw wood from being used – HERP Varanasi



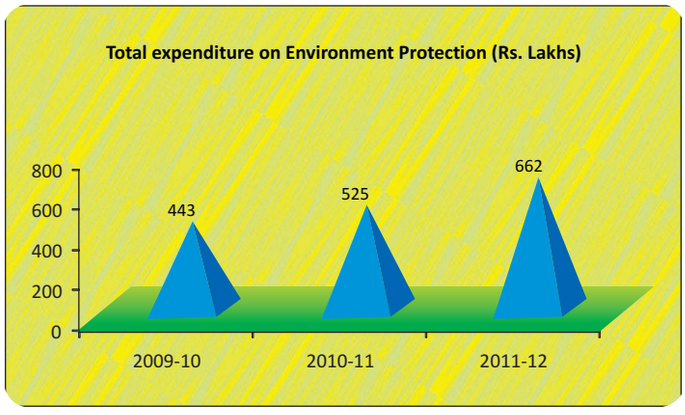
Vermi Composting at HERP Varanasi

Compliance

BHEL is ISO 14001 Certified Corporate and hence have created a Legal Framework to proactively identify applicable legal requirements. The framework so designed not only helps in compliance with the environmental legislation but also provides opportunity to take certain proactive measures much before enforcement of any statute.

Environmental Protection Expenditures

BHEL has been taking many Environment Improvement Projects (EIPs) to improve the overall environment in and around the units. It has been spending more than 0.1 % of PAT every year for such activities. Total environmental expenditure of BHEL for the year 2011-12 amounts to Rs.662 Lakh which is 26% more than the previous year 2010-11 (Rs. 525 Lakh). In 2009-10, the expenditure on Environment related activity was Rs. 443 Lakh. The main cost components include maintaining pollution control devices, green initiatives, environmental, legal & certification expenses. This expenditure does not include the salary paid to the BHEL employees who are fully involved in such activities.



GRI Content Index

Reference No. as per GRI	GRI Aspect	Page / Remarks
	Strategy & Analysis	
1.1	Statement from the most senior decision maker of the organisation	
1.2	Description of the key risks & opportunities	
	Organisational profile	
2.1	Name of the organisation	Bharat Heavy Electricals Limited
2.2	Primary brands, Products & Services	
2.3	Operational structure of the organisation	
2.4	Location of organisation's headquarters	BHEL House, Siri Fort New Delhi-110049 (India) Phone: 011-6633700 (15 Lines) Fax: 011- 66337533 http://www.bhel.com
2.5	Number of countries where the organisation operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report	
2.6	Nature of ownership and legal form	
2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	
2.8	Scale of the reporting organisation:	
2.9	Significant changes during the reporting period regarding size, structure or ownership:	None
2.10	Awards received in the reporting period	
	REPORT PARAMETERS	
3.1	Reporting period (e.g. fiscal/calendar year) for information provided	
3.2	Date of most recent previous report (if any)	
3.3	Reporting cycle (annual, biennial, etc.)	As per management's requirement
3.4	Contact point for questions regarding the report or its contents	
3.5	Report Scope and Boundary Process for designing report content	
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers)	
3.7	State any specific limitations on the scope or boundary of the report	None
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organisations	Outside Reporting Boundary

3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report	
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g., mergers/acquisitions, change of base years/periods, nature of business, measurement methods)	Not Applicable
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	Not Applicable
3.12	GRI Content Index	
3.13	Policy and current practice with regard to seeking external assurance for the report. If not included in the assurance report accompanying the sustainability report, explain the scope and basis of any external assurance provided. Also explain the relationship between the reporting organisation and the assurance provider(s)	
4.1 -4.17	Governance, Commitments & Engagements	
	Environment Performance Indicators	
	Materials	
EN1	Materials used by weight or volume	
EN2	Percentage of materials used that are recycled input materials	
EN 3	Direct energy consumption by primary energy source	
EN 4	Indirect energy consumption by primary source	
EN 5	Energy saved due to conservation and efficiency improvements	
	Water	
EN 8	Total water withdrawal by source	
EN 10	Percentage and total volume of water recycled & reused	
	Biodiversity	
EN 11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	
EN 12	Description of significant impacts of activities	
	Emissions, Effluents & Wastes	
EN 16	Total Direct and Indirect Greenhouse Gas Emission by weight.	
EN 18	Initiatives to reduce greenhouse gas emissions and reductions achieved	
EN 19	Emissions of ozone depleting substances by weight	
EN 20	NO_x, SO_x and other significant air emissions by type and weight	
EN 21	Total water discharge by quality and destination	
EN 22	Total weight of waste by type and disposal method	
EN 23	Total no. and volume of significant spills	

	Products & Services	
EN 26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	
EN 27	Percentage of products sold and their packaging materials that are reclaimed by category	Quantitative information on total packaging material reclaimed by all units is not possible due to huge product portfolio and vast national & international markets.
	Compliance	
EN 28	Monetary value of significant fines and total no. of non-monetary sanctions for non-compliance with environmental laws & regulations	
	Overall	
EN 30	Total environmental protection expenditures and investment by type	

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