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भारत हेवी इलेक्ट्रिकल्स लिमिटेड  
Bharat Heavy Electricals Limited



**BHEL's Commitment in Support of U.N.G.C. Programme**

Established in 1964, BHEL is one of the India's largest engineering and manufacturing enterprises in the energy and infrastructure sector and a leading power equipment manufacturer globally.

BHEL serves the core sectors of the economy and provides a comprehensive portfolio of products, systems and services to customers in power, transmission, transportation, renewables, water, defence & aerospace, oil & gas and industry from its widespread network of 16 manufacturing plants, 2 repair units, 4 regional offices, 8 service centres, 15 regional marketing centres, 3 overseas offices and more than 150 project sites across India and abroad. In all, BHEL has footprints in 83 countries in all the six inhabited continents.

The worldwide installed base of the power generating equipment supplied by BHEL exceeds 185 GW – making it the undisputed leader amongst Indian power plant equipment manufacturers. BHEL has installed more than 1000 utility sets in thermal, hydro, nuclear & gas based power plants, contributing more than 50% to the total installed conventional power generation capacity in the country.

Safeguarding the environment has always been one of our major concerns. We have well established Environment Management System (EMS) accredited to ISO 14001: 2015 Management System Certification. The EMS provides us an excellent framework to proactively identify & manage the risks related to Environment in a systematic manner.

Our impeccable track record especially in the fields of - Corporate Governance including anti-corruption, development and deployment of cleaner technologies for safeguarding the environment and respect for human rights including labour standards – indicates that BHEL has internalised the 10 principles of UNGC in its organizational culture and strategy and continued to play a prominent role in UNGC programme.

BHEL stands committed to advance these UNGC principles within its sphere of influence. The company publically advocates these principles to its stakeholders through Annual Report, Press conference, and other public communications. BHEL performance on each of these principles for the year 2019-20 is hosted on UNGC website as well as company's website [www.bhel.com](http://www.bhel.com).

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30.07/2020  
(Anil Kapoor)

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## BHEL Performance 2019-20 – Global Compact Principles

### Human Rights

***Principle 1): Business should support and respect the protection of internationally proclaimed human rights***

BHEL policies are in line with the principles of Human Rights, the Constitution of India, various Labour Laws, etc. Special provisions have been made in BHEL to safeguard women employees at the workplace. Internal Committee (IC) has also been formed to look into cases of Sexual Harassment of female employees at workplace. The Principles of Natural Justice are scrupulously followed in “The BHEL Conduct, Discipline and Appeal Rules” applicable to all its employees except workers who are governed by the Standing Orders.

***Principle 2): Make sure they are not complicit in Human Rights abuse***

There is no reported instance of Human Rights abuse in the Company.

### Labour Standards

***Principle 3): Businesses should uphold the freedom of association and the effective recognition of right to collective bargaining***

The Government of India has enacted various labour laws to adequately protect the interests of the working class. These laws are strictly followed in BHEL. Further, all BHEL Units/Divisions are required to submit quarterly reports on compliances of different laws to the Board of Directors, so as to ensure that the interests of the workers are protected.

Apart from this, BHEL has various bi-partite fora for workers, where the issues / problems pertaining to the workers are discussed and settled. Towards this end, BHEL has an apex level bipartite forum namely “The Joint Committee for BHEL” wherein the elected representatives of all units of BHEL, along with the Central Trade Union Organizations, to which the Unions are affiliated, are represented from the workers’ side whereas the Management is represented by Chairman & Managing Director and Functional Directors along with the Heads of Units.

Continuing its thrust on taking the participative culture to higher pedestal, there are Plant Council & Shop Council(s) operating at the unit level, which meet regularly and discuss issues related to production in financial and physical terms, productivity, order book, cash collection, despatch, general administration and discipline etc. The Plant Council as well as the Shop Councils have representation from representative unions besides Supervisory & Executive Associations. Suggestions on cost reduction, meeting the production targets,

sequential deliveries and quality of goods are accepted which are evaluated for implementation. Besides, both structured and unstructured meetings between the Management and employee representatives as well as cross section of employees are also held from time to time in a congenial atmosphere.

***Principle 4): The Elimination of all forms of forced and compulsory labour***

The Company neither subscribes to nor indulges in such coercive practices. Towards this, it never asks its employees to deposit their original documents pertaining to their education qualifications or date of birth.

***Principle 5): The Effective Abolition of Child Labour***

As per BHEL's Recruitment Policy, the minimum age for employment in the Company is 18 years. It is not permissible to employ any person below this age in BHEL. As such, child labour is not employed in BHEL and hence the issue of its abolition does not arise.

***Principle 6): Eliminate discrimination in respect of employment and occupation***

Uniform set of rules are mentioned in "The Human Resource Manual" of BHEL, which apply equally to all employees, irrespective of factors such as sex, caste, religion, race etc. BHEL has always been an equal opportunity employer. Hence, all recruitments are conducted in a transparent and impartial manner, thereby, giving equal opportunity to all eligible candidates, without any discrimination whatsoever.

## Environment

***Principle 7): Businesses should support a precautionary approach to environmental challenges***

The mission statement of BHEL – "Providing Sustainable business solutions in the fields of Energy, Industry & Infrastructure" emphasises how the tenets of Sustainable Development are deeply ingrained into our business processes.

To translate the mission statement into practices/systems/procedures, BHEL has been instrumental in development of cleaner products which are having lesser environmental footprint. In our internal processes, we always strive for conserving of natural resources including water through deployment of 3-R principle (Reduce-recycle-Reuse), moving towards sustainable energy mix through increasing the share of renewable energy generated through solar systems installed at our premises, conserving energy through energy efficiency improvement projects, reducing carbon footprint in our operations, protecting the biodiversity through enhancing our green cover by tree plantation etc.

Safeguarding the natural environment is a key focus area for the organization. Our units are having ISO 14001:2015 certification which has proven to be bulwark for managing environment related risk and achieve excellence in our environmental performance. Many new initiatives were taken this year to enhance the effectiveness of HSE training including awareness programme on ISO 14001: 2015.

As a noble initiative towards demonstrating greater environmental responsibility, BHEL/Trichy unit has started a special initiative to create BHEL Van as a part of its management plan to increase the verdant cover by half a million native trees by 2022 which will add to its existing inventory of 1 million native trees planted since 1960s. This initiative was inaugurated on 5<sup>th</sup> June 2019 by planting 4500 saplings.

***Principle 8): Undertake initiatives to promote greater environmental responsibilities***

For BHEL, Sustainability is a continuous journey which helps us in reaching newer summits of corporate excellence through implementing sound corporate governance framework, enhancing stakeholder value, reducing environmental footprint of our products & services as well as internal processes, promoting inclusive growth in the society, and enhancing brand equity. As an organization we believe in engaging with all our stakeholders in a structured manner and take them along towards the path of sustainability.

In the following sections, glimpses of activities carried out under the ambit of sustainable development is presented for the year 2019-20.

**A. Responsible material and natural resource consumption:**

Being a major player in capital goods business bestows us with a lot of responsibility towards managing our resource consumption in a sustainable manner. The principles of reduce-recycle-reuse (3-R) is meticulously followed in our units for conservation of virgin natural resources. Activities like reuse of scrap in shops of our manufacturing units such as 2100 MT of Mild Steel scrap and 42 MT of copper scrap in foundry shop of Bhopal, despatch of scrap to CFFP Haridwar for making large castings and forgings, reuse of packing wood for packaging of products & making cupboards for storage, reuse of waste oil and recycling of hydraulic oil in machines such as recycling of 22.8 KL of coolant in Bhopal, use of electrostatic oil filtration machine in FSIP Jagdishpur unit for reusing 10 KL of hydraulic oil in machine, reclamation of 1800 MT of sand in foundry shop of Bhopal, making use of site returned cables for in-house electrical works were some of the specific activities carried out at our premises during 2019-20.

**B. Sustainable Energy Management:**

Energy management in a sustainable manner has always been considered an important element in our management decisions. Some of our units are energy intensive and to harness the potential of energy

optimization, these units have undergone ISO 50001 certification which has helped them in managing their energy requirements in a systematic manner. Energy conservation/efficiency activities such as reduction in lighting load through switching to energy efficient lighting fixture in office/street lights in HEEP Haridwar, HPEP Hyderabad, CFP Rudrapur, BAP Ranipet, HEP Bhopal, FSIP Jagdishpur, Trichy etc., switching to 5 star rating AC equipment at HEEP Haridwar, optimization of air compressor operation through capacity reduction / intermittent operation at HEEP Haridwar and BAP Ranipet, use of transparent roof sheeting at HEEP Haridwar & Trichy, installation of variable frequency drive at 2 EOT cranes at BAP Ranipet, Cycle time reduction in Stress Relieving (SR) furnace at FSIP Jagdishpur, etc. are some of the specific activities carried out during 2019-20.

In recent years, generation of renewable energy through solar systems for inhouse consumption has gained much traction. It has led to lesser dependency on DG sets and achieving sustainable energy mix in our operations. Due to these ground based and rooftop solar systems, during the year 2019-20 nearly 32.43 Million Units of electricity was generated as compared to 27.6 Million units during 2018-19 which in turn translates into enhancement in green energy generation to the tune of 17.5% during 2019-20.

### **C. Water and biodiversity Management:**

Managing water and wastewater in a sustainable manner and enhancing the green cover across our premises is one of the mainstays of our business activities. We have 12 STPs and 12 ETPs installed across our premises which helps us in meeting the discharge norms and making most of our units as zero liquid discharge (ZLD) units. Further, to maintain the green belt across our establishments, the treated wastewater is reused for horticultural purpose which helps us in reducing the demand for fresh water. Reduction in water supply hour at HEEP Haridwar and FSIP Jagdishpur, storage of STP treated wastewater in factory in four big size aquifers of dimension 50MX50MX1M for ground water recharge and creating 28 rain water harvesting ponds having total capacity of 16.23 million litres in Trichy complex, development of 2 nos. dams one masonry and other earthen near Dhanvantri park, Habibganj having capacity around 30,000 cubic mtr. of rain water harvesting in Bhopal, installation of roof top rain water harvesting system installed for 4 buildings in EDN & ESD, Bengaluru, changing normal water taps to sprinkler type in office of ISG Bengaluru, etc. are specific activities carried out for water conservation during 2019-20.

At our units, the day of superannuation of employees, visit of dignitaries, and World environment Day etc. are celebrated with tree plantation to commemorate such important occasions. During 2019-20 more than 36000 trees were planted across the premises of HEP Bhopal unit and overall more than 46000 trees were planted across BHEL premises adding to its rich verdant cover. Biodiversity parks have been established in many of our townships like Noida, Trichy etc. The green belt helps us to maintain water table around our presence as well.

**D. Carbon Management:**

Our concerted efforts in the field of energy management through energy conservation / efficiency, use of cleaner fuels in our operations, enhanced share of renewable energy in our total energy mix have helped us in reducing our overall carbon footprint. Due to renewable energy generated through solar systems installed at our premises, a carbon footprint avoidance of nearly 31130 MT of CO<sub>2</sub>-equivalent was achieved during 2019-20 which is 17.5% more as compared to 2018-19.

Replacement of LPG Cylinder by PNG Gas by laying Line for Canteens and enhancing natural light in civil store by providing polycarbonate sheet at roof at HEEP Haridwar & Trichy, installation of 20KVA online UPS for plant lighting load at night during power supply failure for saving of Diesel in DG set at CFP Rudrapur etc. are some of the additional activities carried out during 2019-20 for carbon footprint reduction.

About 5 lakh saplings of variety of trees will be planted in next 3 years inside the factory and township of Trichy which is already home to over 1 million native trees and treated wastewater from the factory STP will be used for watering. This will be very much helpful in enhancing the capacity of carbon sink.

**E. Waste Management:**

It is a common understanding that waste is a resource in the wrong place. Keeping this in view, our nesting plan for metal sheets is made in such a way so as to minimise the generation of waste. Once the scrap is generated, it is recycled or reused in the units to the extent feasible and otherwise either sold to authorised recycler or sent to CFFP Haridwar for melting in the furnace and subsequently utilised in making heavy castings and forgings. Hazardous waste is being disposed as per the regulatory requirement and records are maintained for scrutiny by authorities.

Specific activities related to responsible waste management during 2019-20 included getting 12 out of 14 townships of BHEL viz Noida, ISG Bengaluru, EDN Bengaluru, EPD Bengaluru, HERP Varanasi, TP Jhansi, Haridwar, Trichy, HEP Bhopal, RC Puram Hyderabad, HPVP Vizag, and FSIP Jagdishpur declared as “**Single Use Plastic Free**” townships based on 3<sup>rd</sup> party certification audit, placement of 443 nos. of scrap bins & 12 nos. of chemical storage bins by various project sites of PSER, installation of 200 kW of rooftop solar power plant using non-saleable lower wattage PV modules (from our production line), site returned cable accessories and inhouse hardware at EDN & ESD Bengaluru as an example of waste to energy project, vermi-composting of kitchen waste at HERP Varanasi, Trichy complex etc. A special initiative was taken by Trichy unit in using plastic wastes for laying about 50 mtr. road in township on a trial basis and this practice is planned to be continued.

**In this way BHEL has ingrained sustainability into its core management processes.**

***Principle 9): Encourage the development and diffusion of environment friendly technologies***

BHEL is contributing to a greener environment through development of environment friendly technologies, reduced emissions and improvement in efficiency of its equipment. Some of the steps taken in this direction are detailed below:

1. In parallel to the improvements made in carbon footprint of BHEL's operation, company is also working towards reducing the carbon footprint of BHEL made products during its running lifecycle. BHEL in association with IGCAR, NTPC, is developing **Advanced Ultra Supercritical Technology** under the aegis of the National Mission on Clean Coal Technology. The technology will yield targeted efficiency of 46% against efficiency of ~38% of subcritical and ~41-42% of supercritical sets. In result, this will further reduce coal consumption and CO<sub>2</sub> emission by about 11% as compared to Super Critical plants and by about 20% as compared to Subcritical power plants for single unit pf power generation. Company has already introduced Super Critical Technology in India which has lower carbon footprint in comparison to previous generation of subcritical technology.
2. Further, new emission norms which have come into force for generation utilities, BHEL is ready with the solutions required to meet the stipulated norms. The company has initiated several measures like modification in boiler design, modifications in the **wind box firing system** of Boilers and development of SCR catalyst and systems for NO<sub>x</sub> reduction, installation of Flue Gas Desulphurization (FGD) systems for SO<sub>x</sub> capture and improvement in particulate collection efficiency of **Electro Static Precipitators (ESPs)**. BHEL has developed **Selective Catalytic Reduction (SCR)** technology exclusively for high ash coal fired Indian thermal power plants through its dedicated R&D efforts and the same has been demonstrated at NTPC Simhadri Super Thermal Power Station.
3. BHEL is working indigenously on development of technology for the conversion of high ash Indian coal to methanol. The technology will be demonstrated initially at pilot scale with the production of 0.25 TPD of methanol. Successful implementation of this technology will help in utilizing the vast coal reserve available and significantly curb the rising imports bill of the country due to crude oil and improve upon the energy security of India.
4. BHEL is contributing significantly to the nation's green initiatives of promoting renewable energy by manufacturing state-of-the-art solar cells and solar modules. In addition, space-grade solar panels using high efficiency cells and space-grade battery are also being manufactured. BHEL has also in-house developed Photo voltaic (PV) products ranging from Solar Inverters, Solar Passive Trackers, Solar PV cells and PV modules.

5. BHEL has undertaken development of high efficiency solar cells using Passivated Emitter Rear Contact (PERC) technology at pilot scale. The project includes development of mono and multi-Si Solar cells with efficiencies of 21% and 19 % respectively and shall be commercially deployed for production of higher efficiency Solar cells/ modules. R&D project on development of Passivated Silicon Heterojunction (PIHJ) Solar Cells with 21 % efficiency is also under progress.
6. Electric mobility is fast emerging as a future mode of transportation to reduce emission from vehicles. BHEL through in-house R&D efforts has developed & successfully tested at ARAI, Motors, Controllers & Charging infrastructure for E-Bus application. BHEL's 12 m E- Bus has been homologated at ICAT Manesar.
7. BHEL is also working on development of environment friendly green technology for power generation and has successfully developed 5 kW PEM (Proton Exchange Membrane) fuel cell stack for strategic applications and further working to increase the capacity. BHEL has also developed and demonstrated Proton-exchange membrane (PEM) Fuel cell powered 1.25 kW Hybrid Electric Golf cart vehicle for drive range extension of electric vehicles.
8. BHEL is working on waste to energy generation projects and taken up development of incinerator of lower capacity with the help of academic institution.
9. BHEL is offering environment friendly technology of Air cooled condenser to ensure water saving in modern thermal power plants. Further in-house developments are also undertaken to make it more cost competitive.

## **ANTI-CORRUPTION**

***Principle 10: Businesses should work against all forms of corruption, including extortion and bribery***

**Approach:** The Vigilance function of BHEL is headed by Chief Vigilance Officer (CVO), who acts as an extended arm of Central Vigilance Commission (CVC), which is the apex body of Government of India, on Anti-Corruption. Each Manufacturing Unit / Power Sector Region / Industry Sector of BHEL has a separate Vigilance set-up headed by a Senior Officer reporting to the CVO.

**Framework:** BHEL has a detailed and time-tested framework of policies, guidelines and manuals, which clearly define roles and responsibilities and also delegation of powers for various function(s) relating to day to day discharge of various processes of the company. These guidelines have been designed to bring out transparency in the working of the officials and provide basis on which a decision is required to be



made. These framework of guidelines/ manuals forms the basic structure for Anti-corruption work in the company and qualifies discretionary powers of officers by defining how the discretion(s) is to be used. The vigilance department ensures that these policies and guidelines and strictly followed in letter and spirit by carrying out systems study, surprise inspections, scrutiny of reports and verification of complaints received

The findings of the inspections/ scrutiny's form the basis for vigilance recommendations for modification of various provisions of BHEL Policies / Guidelines / Manuals so as to minimize opportunities for corruption and reduce discretionary powers and to bring clarity in provisions where there is scope for misinterpretation. Accordingly, revised Reverse Auction (RA) Guidelines-2020, Amendment to Guidelines for Suspension of Business Dealings with Suppliers/Contractors and Guidelines for QCBS based procurement have been issued during the year.

Major procurement in the company i.e. above Rs.5 crores is carried out under the provisions of Integrity Pact. This Integrity Pact is a set of measures which both the vendor and the company undertake to ensure corruption free procurement without delay or biases. All these procurements are independently monitored by Independent External Monitors (IEMs) appointed by Central Vigilance Commission.

**Online vigilance complain system:** The Vigilance Department of Company has as an Online Vigilance Complaint System where any person or company can report corruption issues in a confidential manner to the Vigilance Department. The system also provides the person with a mechanism to check the status of their complaint from time to time till they are finalized. Out of 228 complaints received (202 during the year) through offline and online mode, 213 complaints were disposed off and the rest are under different stages of disposal. BHEL also has an extensive and well established 'Whistle Blower Policy'. Any employee of the company can report corruption matter in confidentiality to the Top Management. The policy provides for protection of 'Whistle Blower' for harassment of any kind and for protection of his identify enabling him to report issues without any fear.

**Do's and Don'ts:** In order to assist the executives to take decision in an objective manner, a set of Do's and Don'ts have been prepared as a ready reckoner. This is likely to help executives in implementing Company's policies and guidelines in letter and spirit. Accordingly, the Do's & Don'ts for following areas of operation have been finalized with the concerned department and notified:

- Procurement (with Corporate Sourcing Strategy & Policy Department)
- Vendor Registration (with Corporate Sourcing Strategy & Policy Department)
- Finance & Execution of Works and Purchase (with Corporate Finance Department)
- Quality and Third Party Inspection (with Corporate Quality Department)

**Participative Vigilance:** As per the direction of CVC, Vigilance Awareness Week is observed in the last week of October every year with the aim of bringing awareness among all the Stakeholders' i.e. Employees, Vendors, General Public about Anti-Corruption Measures and to seek their participation for creation of corruption free business environment and society. Various programmes i.e. quizzes, debates, essay writing competition, elocution, panel discussions, lectures, training programmes, poster competition, slogan competition, Walkathon, Marathon, Cycle Rallies, Human chain formation etc. were also organized for employees of the organization, students of various schools (9804 students of 43 schools in 16 States) / colleges (3910 students of 25 colleges in 11 States) and general public (480 citizens from 6 Gramsabhas). Stickers with Vigilance Awareness theme were pasted on Trailers/Trucks going from BHEL units to project sites all over India. 10 grievance redressal camps were organized for vendors/ sub-contractors across BHEL units.

**Publication of quarterly News Letter:** Corporate Vigilance also brings out a quarterly e-Newsletter 'DISHA' with a view to create awareness about procurement policy, rules and procedures etc., to disseminate the instructions/ guidelines issued by CVC and Government of India from time to time and to share best practices, case studies, experience of other PSUs and articles. The magazine serves as a ready reckoner for the employees and help them to adopt Anti-Corruption measure in their day to day function. Four issues of the e-Newsletter were published during the year and twenty-seven issues have so far been published since 2013. The e-newsletter is given wider publicity and is sent to all employees through e-mail and also hosted on BHEL's units/ Regions Intranet webpage.

**Preventive Vigilance:** Vigilance Department also interacts frequently with the executives of various units/ regions in structured training programmes on the issues of preventive vigilance and enable them to act in a transparent and unbiased manner. **93** Training programmes/ Workshops on Preventive Vigilance were organized for employees associated with decision making process across the Units/Regions.

**Punitive Vigilance:** Besides preventive and participative vigilance measures, punitive vigilance has its own importance. It acts as deterrence to others and also provides for an opportunity to deviant officers to mend their ways and align their actions with Company's policies. During the year, 19 cases were taken up for detailed vigilance investigation by the Vigilance department. Wherever lapses / irregularities were established, suitable disciplinary proceedings and systemic improvements were recommended. During the year 57 penalties (23 Minor & 34 Major) and 19 warning advisories were issued to the employees for violating company guidelines, Manuals and conduct rules. Recoveries of Rs.578 lacs (approx.) have been made from various agencies, employees, vendors and contractors, on the advice of Vigilance.

BHEL is committed to work against all forms of corruption including extortion & bribery by laying down a framework of anti-corruption measures. The Whistle Blower Policy provides for fearless reporting of corruption by employees of company while practice of Integrity Pact, IEMs, Online Vigilance Complaint system provides for reporting of corruption related issues promptly and without fear by all stakeholders.