Annexure - C to Boards' Report

Conservation of energy, technology absorption, foreign exchange earnings and outgo.

Pursuant to provisions of Section 134(3)(m) of the Companies Act, 2013 read with Rule 8(3) of the Companies (Accounts) Rules, 2014.

A. Conservation of energy

1. Steps taken or impact on conservation of energy:

- Replaced conventional and Metal Halide lights with energy efficient Light Emitting Diode light fixtures in office, production bays, testing and store areas. All upcoming infrastructure investments are planned with installation of energy efficient Light Emitting Diode
- Power saving in lighting achieved by installing motion sensors in washrooms. Installed Timers in High Bay Light fixtures of Core, Assembly and Active part area in Large and Medium Power Transformers factory. It has resulted in Energy saving by controlling the operation of lights in day hours
- Installed Variable Frequency Drive (VFD) in Air compressor. It resulted in energy saving by reducing energy losses in load and no-load cycle of Air compressor
- Power factor for the year 2020 was maintained at 0.99 by replacing Faulty capacitors, increasing the frequency of periodic/ preventive maintenance to identify faulty units, replacement of fixed capacitor bank by Automatic power factor correction panel
- The old centralized air compressor system is upgraded by installing new energy efficient, automated, Variable Frequency Drive based Air compressor near to the load in Live Tank Breakers and Instrument Transformers factories. It has resulted in saving in energy by reducing the line losses and by increasing the cut off hours of the compressor
- The old underground Mild Steel line of fire hydrant network replaced by stainless steel pipes. It has resulted in saving in water and energy by reducing the frequent operation of Jockey Pump
- Reduction in operating pressure of compressor and attending the leakages thus reducing the operational hours of compressor
- New Reverse Osmosis (RO) Plant was installed for treatment of process water from Central Effluent Treatment Plant
- Centralized Effluent Treatment Plant (CETP) for efficient handling & treatment of process water from production lines
- Treated water (~ 30%) from RO plant is recycled back to the process thereby reducing freshwater intake from the river
- Water audit conducted to find out leakages in the existing network and actions to cap the leakages

2. The steps taken by the Company for utilising alternate sources of energy:

- Rooftop solar Photo Voltaic power in factory locations
- Buying green (solar and wind) from energy service companies (wheeled power) for factory operations

3. The Capital Investment on energy conservation equipment's:

- Light Emitting Diode lighting, Motion sensor system for lighting control
- Variable Frequency Drive (VFD) in AHU air compressors
- Power factor improvement solutions
- Centralized Effluent Treatment Plant (CETP)
- New Reverse Osmosis (RO) Plant

B. Technology absorption

1. The efforts made towards technology absorption:

- Development and type testing of IMB 145 cost out and IMB 420, 3kA legacy design
- Development of Dielectric Dissipation Factor switch in Hybrid Capacitor Voltage Transformer portfolio
- Oil Impregnated Paper Electro-magnetic Unit optimization and introduction in Hybrid Capacitor Voltage Transformer
- Facility for manufacturing and testing of 800kV High Voltage Direct Current converter
- Short Circuit test on largest rated 7760 kVA Dry type Excitation transformer
- Successfully deployed pilots to demonstrate Digital Transformer technologies on new and installed power transformers
- Adopted and applied Transformer design technology for Ester fluid insulated units up to 400kV (under execution)