

Annexure 5 to Directors Report

Conservation of Energy, Technology Absorption, Adaptation and Foreign Exchange Earnings and Outgo

SECTION 134(3)(m) OF THE COMPANIES ACT, 2013 READ WITH RULE 8(3) OF THE COMPANIES
(ACCOUNTS) RULES, 2014

A. Conservation of Energy 2017-18

i. The following Energy conservation measures were taken during the year 2017-18

The Company has dedicated 'Energy Cell', who is continuously working for Energy Cell, by identifying new and innovative measures, implementing across Company's plants, The Team also closely monitors specific energy consumption pattern across all manufacturing sites. We conducted Periodic Internal & external energy audits to improve energy performance. This resulted in reduction in energy footprint of products. Last year Key Focus area has been on heat integration in processes and waste heat recovery. Some Major Energy saving initiatives are mentioned below;

1. Fully automated waste heat recovery from Fume incinerator installed for hot water generation which eliminated fresh steam requirement in adjacent plant.
2. Installation of Back pressure turbine which generate Electrical Energy by utilizing Kinetic energy of pressure reducing station. Here substantial energy cost saving is achieved.
3. Developed in-house online condenser ball cleaning system which help to sustain Heat transfer coefficient of condenser & coefficient of performance of refrigeration system.
4. Steam and power reduction through reflux optimization in cooking stage of reaction by close loop control.
5. Substitution of conventional furnace oil (FO) with low Sulphur FO in process steam boiler which is having good impact on reducing GHG emission.
6. Reduced specific power consumption upto 12% by reducing condensing temperature by 4 Deg C in refrigeration plants.
7. Added CO-GEN plant at Unit 05, which has increased overall efficiency of Power Plant.
8. Adopted new concept of smokeless & flameless induction cooking appliances in canteen.
9. Installation of Super Energy Efficient fans.

The Company has been awarded by ISO 50001 certification for Unit-2, Ankleshwar which as per Bureau Veritas is the First Agrochemical plant.

ii. Steps taken by the company to utilize alternate source & reduce energy consumption:

1. We have 760 KWH Roof top Solar photo voltaic power generation proposal for one of largest site at Jhagadia with investment of 6 Crores. This will utilize building and warehouse roofs for solar power generation.
2. We are already entered in to agreement for sourcing Wind power @ 45 lac units per annum for our plant 01. We have also planned for purchasing Wind energy @ 40 lac units per annum for plant 05.
3. For our upcoming mega site at Dahej Gujarat, we have considered to integrate with Solar Photo voltaic power generation.
4. We have planned to capture most of Steam Pressure reducing systems to recover Kinetic energy to generate power through Back pressure Turbine. This will reduce conventional energy consumption. This year we have installed 3 such Turbines, and 5 more are under progress. With this measure UPL will reduce Total conventional power of 14 MW, last year we achieved @ 6 MW.
5. We have installed Rain Water Harvesting system at Unit 01, Unit 10, and under progress in all other plants. This will not only harvest rain water but also save pumping power.
6. UPL had initiated several Energy consumption reduction program through innovative measures, like process pinch, Heat integration, achieving higher overall efficiency, Closed loop condensate & Flash recovery system and Heat recovery through Heat Pipe.
7. We have started harvesting natural day light through light pipe and translucent sheets in security, offices, canteens and ware-houses.
8. We have reduced @0.65 MW load through conversion of Lighting to LED lights.

iii. Capital Investment on energy conservation equipment's:

1. A total of 27 Crores was invested into installation of energy efficient equipment. All future projects are being evaluated and approved based on the lowest energy and carbon foot print.
2. The Company's units have been recipients of multiple awards as a recognition of our energy conservation measures and Sustainability.