



★ **“ CONSERVATION OF ENERGY “** ★

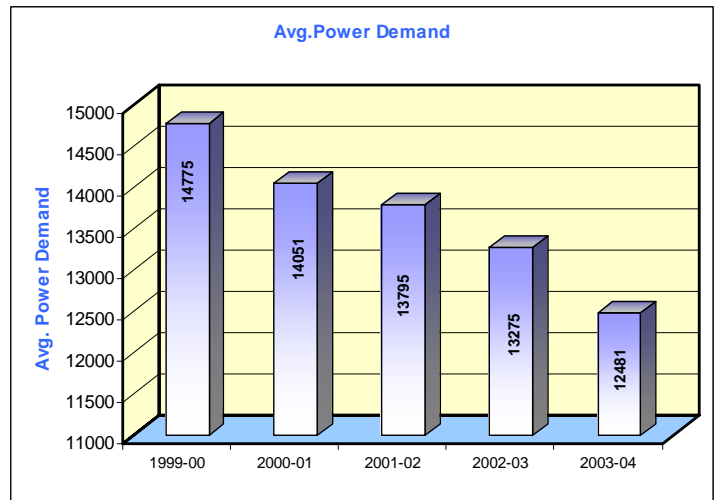
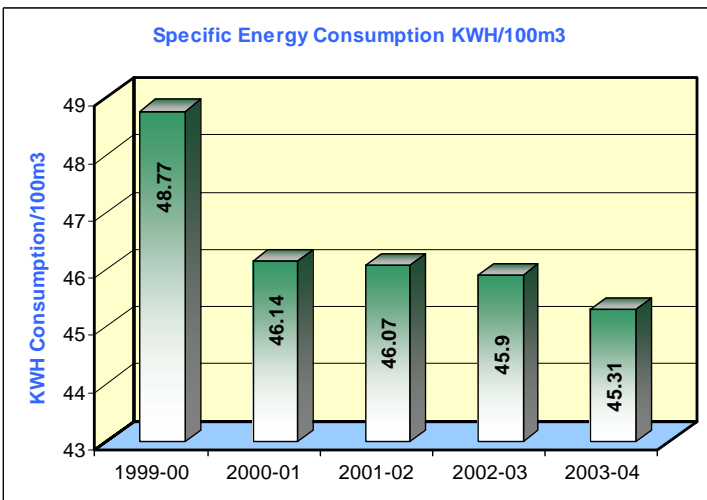
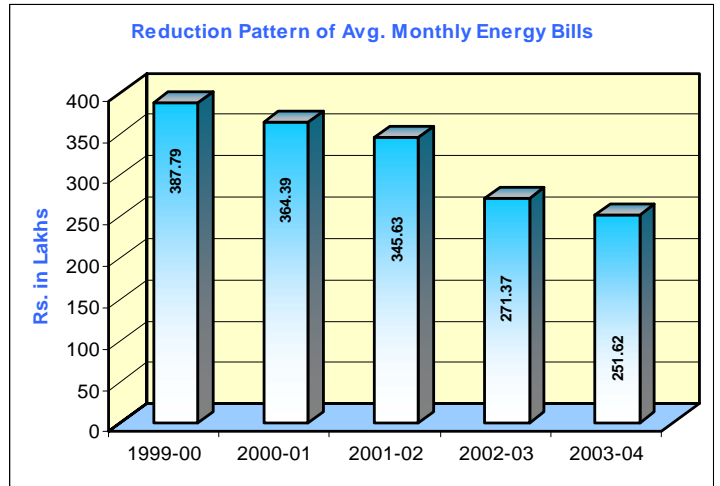
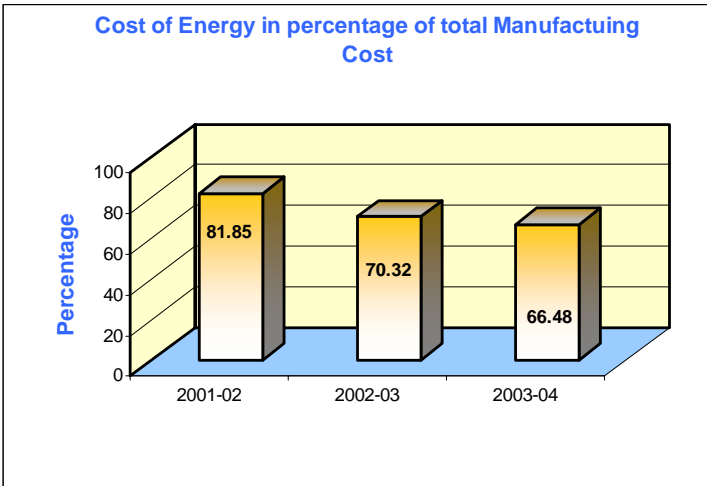
at MIDC's Barvi Water Works, Jambhul

Unit Profile :

Barvi Water Works has been established by Maharashtra Industrial Development corporation in the year 1973 with a capacity of 300 MLD. The capacity of the water treatment plant have been augmented to its ultimate capacity of 900 MLD in three stages (450, 600, 900 MLD) in the years 1989, 1996 & 2002. Presently the plant is operating for 600 MLD as per the demand. The treated potable water of this plant is supplied to both the Industrial as well as domestic consumers of Ambarnath, Badlapur, Ulhasnagar, Kalyan, Dombivli, Thane & New Bombay townships. MIDC have been constructed & maintaining by its own 132/22 KV sub station for getting uninterrupted & qualitative power supply to the Barvi water works.

In the production cost of the water treatment the major contributing components is Energy Cost which is takes about 70% of the total production cost as it involves lifting of water by 115 mtrs from source to Hill service reservoir. As such improving the efficiency of the pumping machinery reducing the pumping head to the optimum level is the major goal of Engineers working in water treatment plants which ultimately reduces the production cost. MIDC has rightly fixed a goal of supply of uninterrupted good quality potable water at lowest possible rates to its

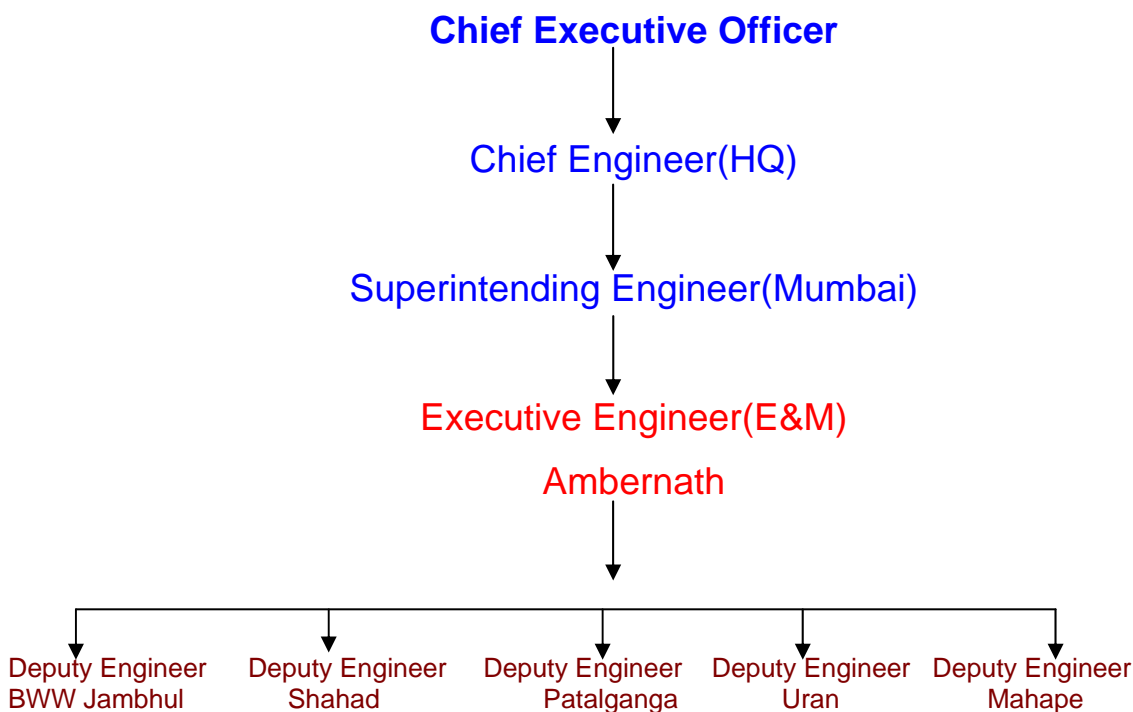
customers. To achieve the said goal it is fixed the priority to conserve the scarcely available energy to minimise the production cost. During the last five years it has been identified and implemented various energy saving projects in the Barvi Water Works, Jambhul and achieved savings in energy cost by an average Rs.300 Lakhs per year in the last three years. It can be seen from the following graphical presentation, the pattern of reduction of various energy cost components.



Energy supplier MSEB has announced an incentive in Energy Bills (upto 7% of energy bills) for consumers maintaining power factor above 0.95 upto unity with affecting from august-2003, Therefore in anticipation of commencement of MSEB incentive for power factor, MIDC has taken an advance action of enhancing the power factor from 0.93 to 0.97 and MIDC availed the incentive of power factor from the first month itself i.e. from **August-2003**. Again gradually the power factor further enhanced upto unity at 100 KV level and

started receiving the incentive of power factor @ 7% of the energy bills, which amounting to 144 Lakhs/year. Also the contract demand of the system has been substantially reduced from 13795 to 12481 & thus demand charges in the energy cost is saved by 55 Lakhs.

III. Organisation Setup Chart for energy Management:



IV. Energy Conservation Achievements :

- a) Pure Water pumping head is reduced to the actual water level required in the service reservoir from the full supply level with a minor modification in the system & thus achieved the saving of 14 Lakhs/year in energy cost.
- b) Enhancing the system power factor from 0.98 to unity by providing HT capacitors for Raw water pumping systems with an expenditure of 23 Lakhs and achieved saving in energy cost by 4% of the energy bills which amounting to 90 Lakhs/year.
- c) Complete overhauling of 22/3.3 KV (3 MVA & 2 MVA) 8 Nos of transformers to reduce di-electric losses and increasing the

efficiency of transformers with an expenditure of 18 Lakhs and achieved saving in energy cost Rs. 75000/- per year.

d) MIDC have been received a certificate of appreciation for its achievement in energy conservation at Barvi Water Works, Jambhul for the year 2003 in the Maharashtra State Level Award for excellence in “Energy Conservation & Management”.

- V. It has been planned for next two years to reduce the energy cost by 13.9% which amounting to 470 Lakhs per year savings by segregation of pure water pumping to low level area consumers & higher level area consumers (250 MLD @ 30mtr head & 350 MLD @ 68 mtr head) with a project cost of 778 Lakhs.

- VI. MIDC is adopting all the statutory laws pertaining to environment and safety at Barvi water works, Jambhul