

# HOTELS



## ITC THE MAURYA

New Delhi

### Hotel Profile

Acknowledged as the preferred residence of visiting heads of state and global business leaders for over 25 years – ITC Maurya epitomizes the luxury hotel experience. The Hotel has started its operation in the year 1977.

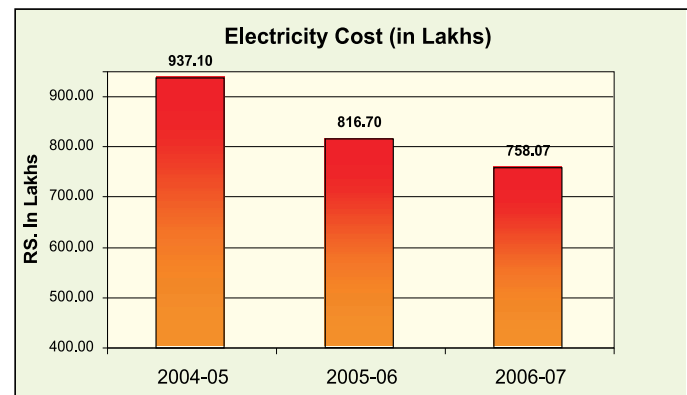
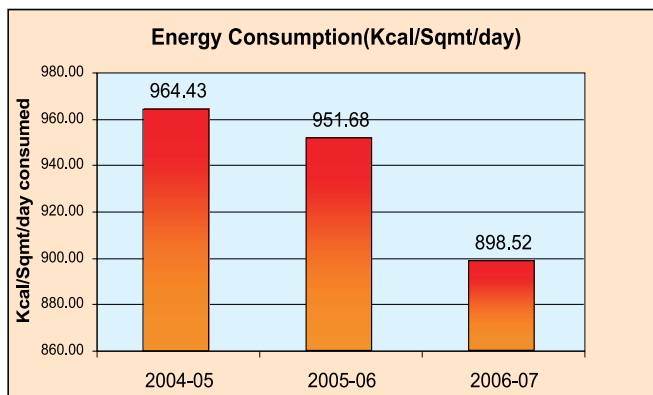
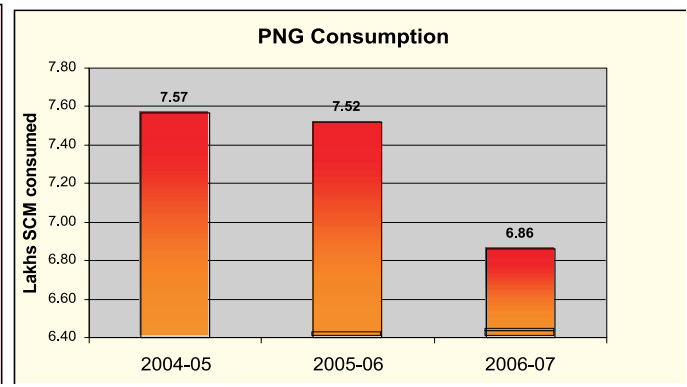
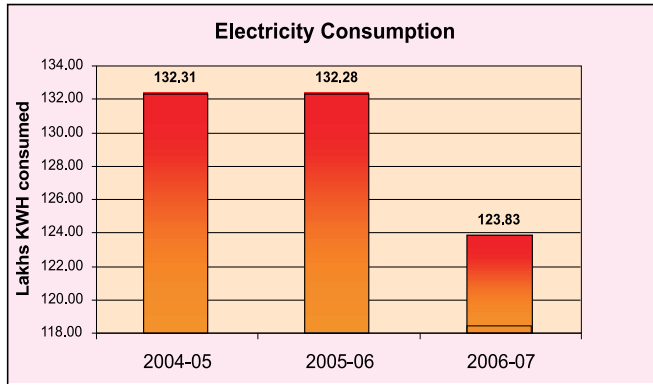
The Maurya is a luxury business hotel with modern and contemporary facilities, located in the heart of the exclusive Diplomatic Enclave, offering a superb view of Delhi's green belt – the forested ridge.

Named after the Mauryan Dynasty of the 3rd century, B.C. it is an imposing structure of superb luxury with 440 Rooms, inclusive of 29 uniquely designed Suites. The striking pyramidal architecture of the hotel inspired by the Buddhist stupas and ambiance are a tribute to the age of the great Mauryan Dynasty, which gave Indian history its golden era.



The total area of the hotel is 6 acres; air-conditioned area being 41283 sq meters and total built up area 55044 sq meters. Temperature maintained through out the air-conditioned space is 22 degree. The connected load of the hotel is approximately 4657 KW.

## Energy consumption trends for ITC Maurya

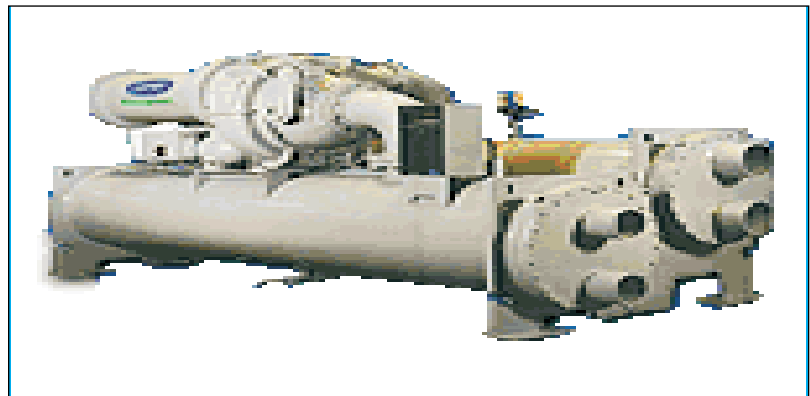


## Major Energy Conservation measures implemented at ITC Maurya during 2006-07

1. Installation of two nos of VFD operated energy efficient and eco-friendly 19 XR centrifugal compressors chillers. These new chillers were installed replacing two of the existing fixed speed centrifugals which were in good working condition.



Before



After

2. Installation of primary and secondary chilled water system with highly efficient motors (EFF 1) for airconditioning plant in place of conventional direct pumping.

3. Replacement of three way valves to two way valves for all guest room FCUs to work in tandem with the secondary system of pumping. This has resulted in saving energy through slowing down of the secondary pumps during low load conditions
4. Rationalization of two transformers as part of electrical system revamp. The reduced number of transformers resulted in energy saving by eliminating the fixed losses
5. Screw air compressor in place of old reciprocating compressors for laundry air requirement.



**Before**



**After**

6. All transfer pumps and fountain pumps were replaced with highly efficient Grundfos make pumps .
7. Replacement of FCU thermostats in Guest Rooms and Offices: -- in place of old conventional thermostats with Biport valves in water lines.
8. As part of main building room renovation state of art lighting power, Airconditioning system controls are installed at bed for energy conservation.
9. Upgradation of Capacitor Bank Panels to Maintain Unity Power Factor.
10. Two way Automatic Balancing chilled water valve for Basement /Ground Floor AHU's.
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12. Usage of Flow Regulating Devices to Extend To All Taps to Reduce Water Consumption By 10%
13. New energy efficient cooling towers in place of old cooling towers with VFD operated motors..
14. VFD installation( 15 Nos) for DG Exhaust, AHU Motors Etc
15. Installation of kitchen energy star rating equipments during First phase of renovation.
16. Saving in PNG achieved by adopting following measure- repairing of pipe line with proper insulation, changed all the steam traps for better utilization of steam and energy.

### ***Energy conservation measures under implementation during 2007-08***

- 1. Replacement of two more fixed speed centrifugal chillers with Variable Speed Screw Chillers (This project has been completed in Sept 07 and is yielding good results)**
- Existing EFF-2 motors will be replaced with energy efficient NEMA premium super E Baldor Motors to 70 Nos of AHU's and TFA's.
- 3. Installion of State of the art energy efficient PNG fired Engine with exhaust heat recovery through exhaust gas boiler to generate steam for to operate existing double effect vacuum absorption chiller.**
- 4. Energy efficient steam boilers in place of existing VINTAGE boilers with total steam engineering RE DONE (along with state of the art skid mounted plate heat exchanger in place of old shell and tube heat exchanger with proper automation.)**
- Energy efficient PNG fired Calendar machine in place of existing steam heated calendar machine.
- Centralized voltage regulation for lighting circuits in order to save energy.
- Occupancy Sensors for all guest room bathrooms and public areas.
- Energy efficient motors of Airconditioning plant.
- Bifurcation of water line as lower head and higher head requirement to save the pumping energy and for water conservation.
- As part of Tower block (111 rooms) renovation bed side CFL's are being replaced with energy efficient LED's and also LED's based lights in lift landings corridors etc.
- All Cold Storages in Main Kitchen will be of CFC free and energy efficient – stand alone Cooling Unit.
- Ozone Injection System to used in the Laundry for Reduction in the Chemical and energy.
- Enhancement of ETP to STP Plant with energy efficient pumps blowers etc.
- Direct PNG Fired energy efficient Tumbler Dryer for laundry with heat recovery.
- Heat Pipes for TFA's for RH management and reduction of airconditioning load.
- Ozone injection thus reducing fresh air in intake in to AHU's –reduction in air-conditioning load.
- Conversion of the entire Electrical Oven to PNG Oven in kitchen.

### ***Energy Conservation at ITC Maurya during 2004-05 & 2005-06***

The following energy efficient measures have been implemented in the following areas

- 1. Building Management System ( PC based):-** The Building Management System is key centre for retrieving the datas of all AHUs, TFAs & exhaust used for kitchen. It uses DP

sensor for sending the details of for eg. For AHU / TFA the load conditions of the corresponding area in terms of return air and supply air temperature, accordingly adjust the frequency for the drive. For the exhaust, being the most essential part for the kitchen operation DP sensor gives the running condition of the exhaust.

## 2. Energy management strategy for Airconditioning:-

- a. **Chilled water flow** for the all AHUs and TFAs is adjusted by the use of two way valves in the pipeline which according to the load adjust the flow of water through the coils.
- b. **Cooling Towers** fans speed is adjusted according to the return water temperature from the Tower and hence, save lots of energy.
- c. **VFD's for Condenser & Chilled Water Pumps**
3. **Lighting Upgrade/ Modification:** - Extensive use of CFLs and PL bulbs in place of incandescent bulbs. Use of T5 28 watts tube lights in place of ordinary 40 w tubes.
4. **Modernization of Elevators:-** Hotel has total 14 elevators out of which it has replaced 12 numbers with VVF ( variable voltage and frequency) Mitsubishi elevators which according to the load and call adjust its operations.
5. **Up gradation of generators:** - Installation of 2 numbers 1500 KVA diesel generator which are in accordance with EURO NORMS for environment and energy saving.
6. Installation of Capacitor banks for improving power factor.
7. Installation of Water & Energy Metres for tracking water and electrical consumption.
8. Installation of burners for boilers to use PNG as fuel for energy conservation with almost negligible smoke.

## *Energy Conservation Commitment, Policy and Set up*

ITC Maurya has policy for environment and energy conservation on corporate level as well as on the facility level. List of the main programmes and initiatives related to environment, social responsibility, and sustainable development on corporate level are:-

- 1) ITC is a water – positive corporation and on its way to becoming a carbon- positive corporation too.
- 2) ITC's Social and Farm Forestry programmes have so far enabled farmers to plant 108 million saplings over 26,500 hectares.
- 3) ITC's e- Choupal currently empowers over 3 million farmers by leveraging Information Technology. E-Choupal has received the World Business Award from UNDP for its contribution to poverty alleviation.
- 4) ITC's e-Choupal network will cover nearly 1,00,000 villages, or one sixth of rural India, over the next 5 years.

- 5) ITC's Integrated Watershed Development Programme currently provides critical irrigation to over 8000 hectares of drought- prone land.
- 6) All ITC units has specific plans for "zero" waste water discharge.
- 7) Creating women entrepreneurs.
- 8) Educating rural children. More than 9000 village go to state run schools supported by ITC's primary education programme.

**Along with the above policies the initiatives and action taken by the hotel:-**

### **The Green Objectives**

- To achieve sound environmental practices across our entire operations.
- To comply fully with all environmental legislations.
- To minimize consumption of energy, water and other all other natural resources.
- To minimize waste and to reduce, reuse and recycle the resources consumed by our business wherever feasible.
- To reduce pollution (Air, Water, Ground and Noise) to a minimum and wherever appropriate, to treat and reuse effluents.
- To invite customer, suppliers and contractors to participate in its efforts to protect the environment.
- ITC's social cause range of creating cards launched in partnership with the SOS children's village of India.
- Greening waste lands. The programme has rejuvenated more than 19,500 hectares of waste lands by planting 66 millions saplings creating livelihood opportunities for nearly 2,00,000 people.
- ITC continues with its efforts to enlarge rain water harvesting (RWH) potential both with in its units and in socially relevant Water shed development projects. Net water consumption in 2003-2004 is 8.44 million KI and total (RWH) potential created Is 16.06 million KI.
- Carbon positive corporation – The company's commitment to Greening 1,00,000 hectares by helping grow more plantations in the coming years will make ITC a carbon positive corporations.