

UltraTech Cement Limited
Hirmi Cement Works
Raipur (Chhattisgarh)

Unit Profile

The cement manufacturing unit at Hirmi is the second cement unit of UltraTech after Awarpur Cement Works and has a capacity of 2.75 Million Tonne Per Annum (MTPA) of Clinker. Hirmi is located about 58 Km from Raipur and actually is a small village on Raipur-Baloda Bazar road. The cement plant has a township equipped with requisite civic facilities including a school and hospital. The construction started in February 1992 and was completed on 31st March 1994. Plant is having Captive power of DG of 30 MW, 6MW set under commissioning. Balance power requirement is met by the Chhattisgarh State Electricity Board Grid power.

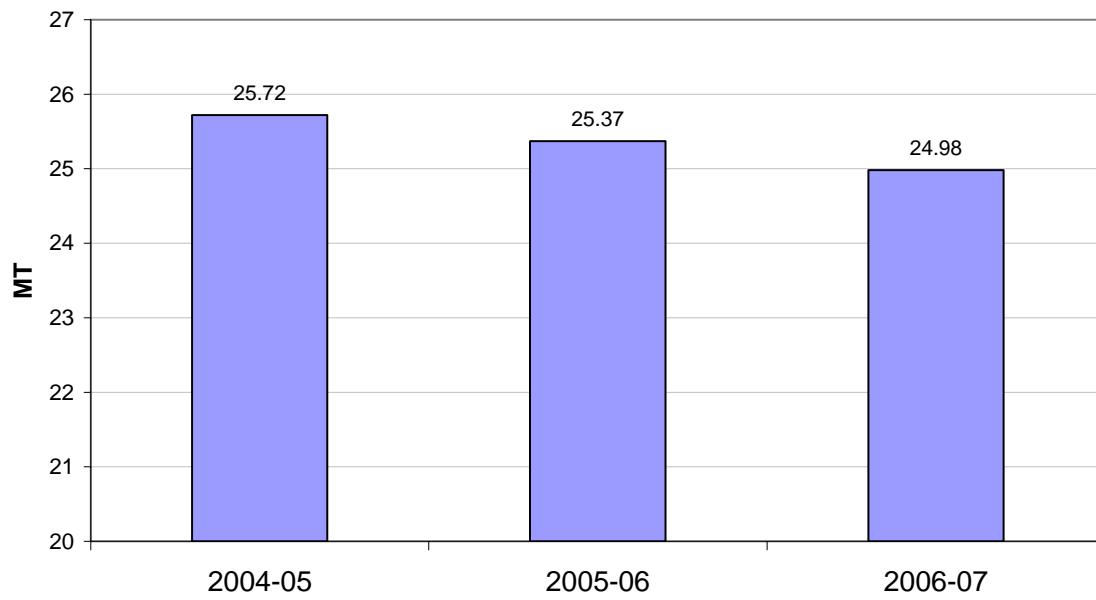
Due to rising cost of HFO, the unit is installing 2 x 25MW Coal based Thermal Power Plant, with provision to expand it to 4 x 25MW plant. The Plant is expected to be commissioned in mid of 2008.

Unit's major raw material requirement is met through its 4.2 MTPA Captive Limestone Mine. Clinker from this plant is sent to our two grinding unit one located at Jharsuguda (Orissa) and other at Durgapur (West Bengal). This Plant of UltraTech caters to cement requirement of Eastern India covering Chhattisgarh, Madhya Pradesh, Orissa, Jharkhand, West Bengal and North East states.

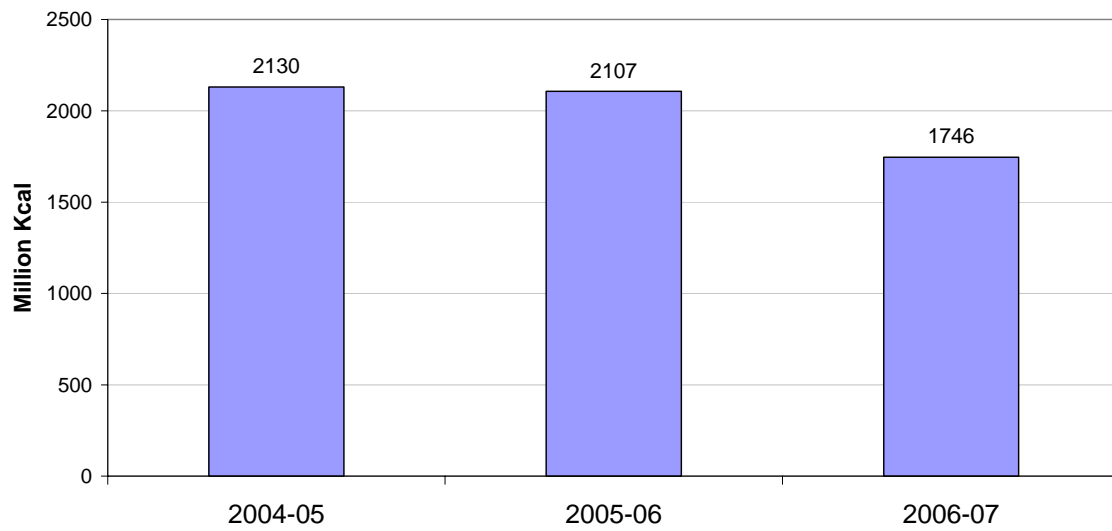
Energy Consumption

	Unit	2004-05	2005-06	2006-07
Annual Production	MT	25.72	25.37	24.98
Total Energy consumption per annum	KWH (Lacs)	2178.1	2120.05	2153.18
Total Thermal energy consumption	Million Kcal	2130	2106.6	1746.102
Total Manufacturing cost in Rs (Lacs)	Rs (Lacs)	23338	26954	20604
Total Energy cost in Rs (Lacs)	Rs (Lacs)	14677	16159	16701
Energy cost as % of Raw Material cost	%	74%	71%	76%
Limestone Crushing power Consumption	kWh/MT	1.25	1.27	1.30
Raw Mill Grinding power consumption	KWh/MT	18.7	17.91	17.24
Kiln and Coal mill power consumption	KWh/MT	25.06	25.03	24.63
Cement Grinding power consumption	KWh/MT	35.01	35.02	30.94

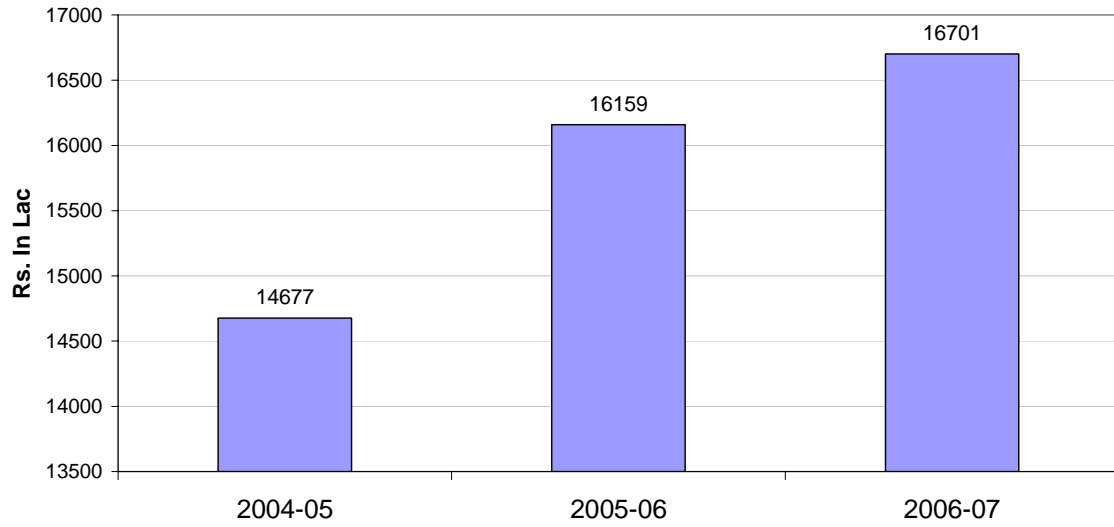
Annual Production



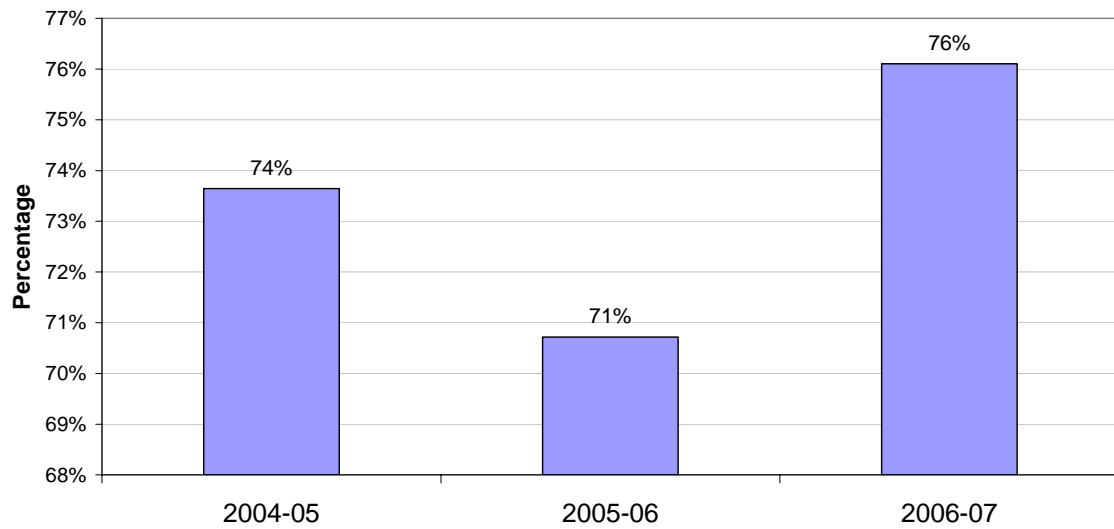
Thermal energy consumption



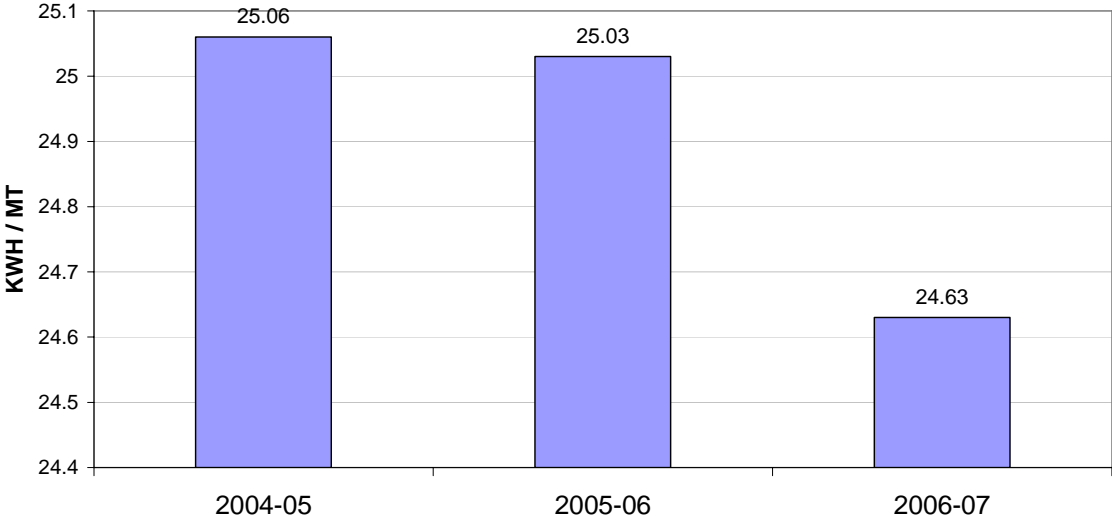
Energy Cost



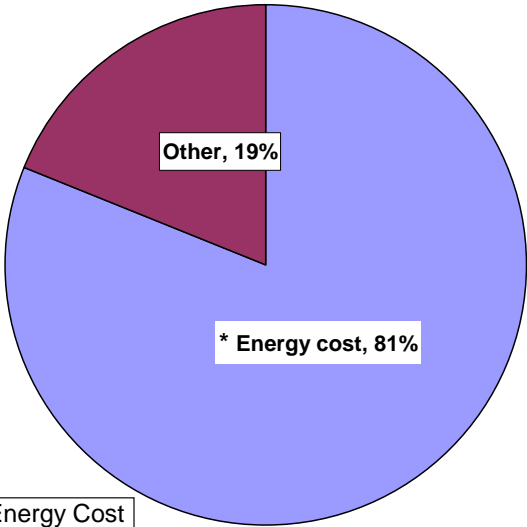
Energy cost as % of Raw Material cost



Kiln and Coal mill power consumption



Manufacturing Cost Vs Energy Cost for the Year- 2006-07

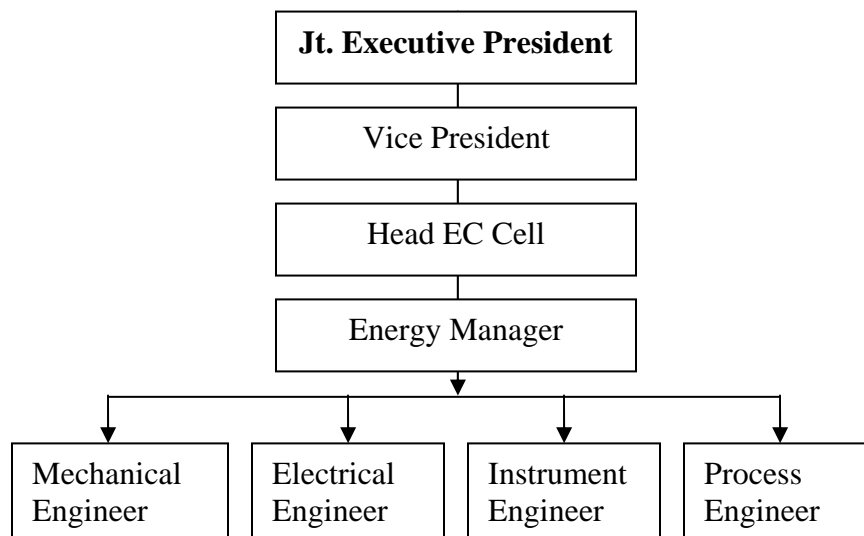


100 % Mfg. cost * 81% Energy Cost

Salient Features of Energy Conservation Cell

The unit has Energy Conservation Cell at HCW headed by Manager (Electrical & Instrumentation) assisted by Energy Manager & supported by two engineers from each department forming a team. This Team finds various energy saving potential in their working areas, brings the proposal to Energy Cell for elaborate discussions & brain storming sessions for finalization and implementation. The unit committed to fine tuning operations & maintenance continuously to achieve the goal, technology Upgradation with energy efficient process & equipments and motivating, training and encouraging employees to achieve a target of reducing the power by increasing blended cement production and by increasing proportion of fly ash from 27 to 30 %.

ENERGY CONSERVATION CELL STRUCTURE



Energy Management Policy

"We are committed to conduct our operations by utilizing various forms of energy in the most cost effective and efficient manner so as to conserve energy resources and to make cleaner environment for our future generation.

Our emphasis is to:

- Adopt energy conservation measures to enhance energy efficiency.*
- Monitor & control the consumption of energy through effective energy information system & through periodic reviews.*
- Create awareness through training amongst all Employees as part of Mass Energy Conservation Movement*

- ❑ *Carry out regular energy audits through internal / external resources / agencies to identify areas of improvement.”*

Energy Conservation Achievements

The plant has undertaken the following initiatives to reduce energy consumption:

1. *Modification of equipment to reduce power consumption*

For year 2006-07, major modification was Linearization of Air Flow through Raw Mill. This modification contributed saving of about 25lakhs kWh in the year 06-07. This saving in terms of Rupees amounts to about Rs. 119 lakhs.

2. *Production optimization*

Optimization of Kiln process was done by

- introducing Dip Tubes in pre-heater cyclones
 - Six sigma study carried out for homogenization of Raw-Mix as pile formation stage, grinding stage and at raw-meal blending stage to reduce standard deviation and to achieve steady operation and better throughput of kiln.
 - Operation of cooler are for effective heat transfer and avoidance of fine dust in tertiary air facilitating better repurcation efficiency of cooler.
 - For a 5-stage pre-heater the specific heat consumption is about 720-720kCal/kg Clinker. However, due to raw mix design and measures taken; this has resulted in improved specific heat consumption. This offered a saving of about Rs. 46 lakhs on account of power and about Rs. 9 lakhs on account of coal reduction.
 - Saving on account of HFO usage is about Rs. 5.8 lakhs
- *Cement Production was optimized by*
- Direct feeding of fly ash at mill discharge feeding to separator and removal of separable fines through separator has resulted in saving of grinding power of total fly-ash
 - Grinding media re-grading and distribution of grinding media charges, subsequent operation of separator and circulating loads
 - This offered a saving of about Rs. 180 lakhs

Environment and Safety

Safety:

HCW has a safety department maintains stringent safety standards & insure that safety measures are being followed strictly.

Unit has a Central control room which functions round the clock with junior management level officers as in-charge. Where an engineer / Officer will be the In-charge who will co-ordinate and organize necessary help required from out side agencies as well as In –house in case of emergency.

HCW has a first aid centre in complex managed by Doctor round the clock. An Ambulance is readily available to shift the patient in case of emergency.

Environment:

As part of culture, it is units' endeavor to maintain all the plants with zero leakage of dust, as well as air & water. A special team in each area monitors & ensures housekeeping of the highest standard.