Grasim Cement

Grasim Vihar, Raipur

Grasim Cement – Raipur
(A Unit of Grasim Industries Limited)

(i) Unit Profile:

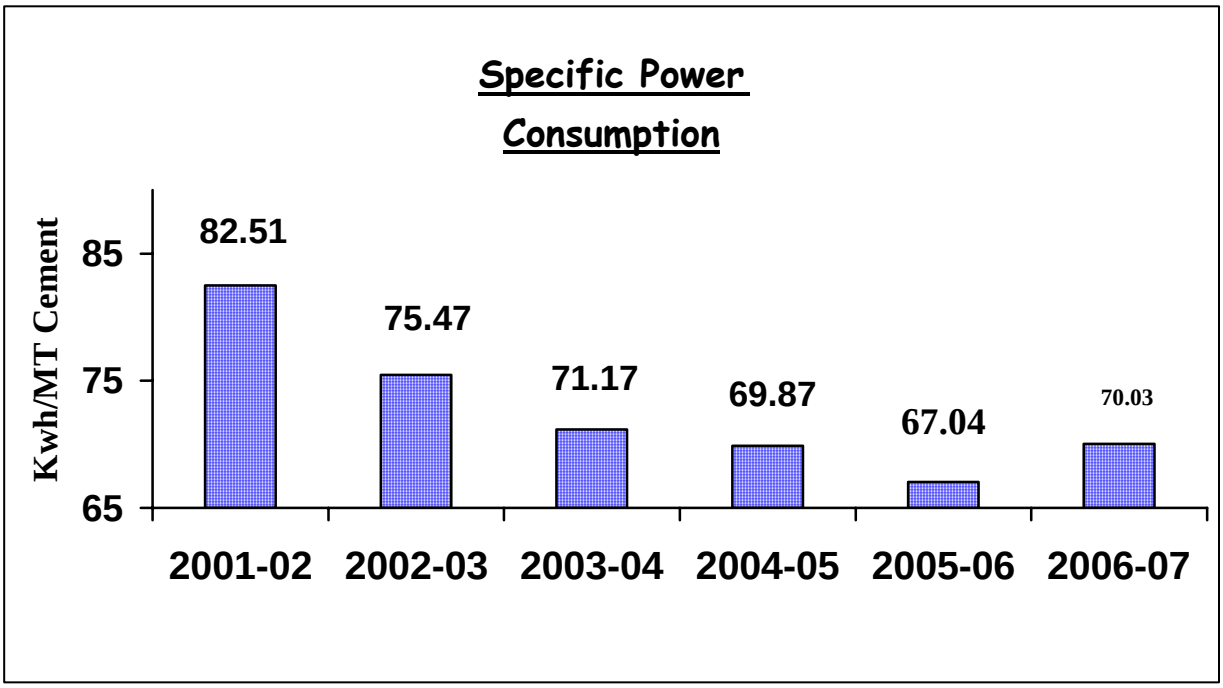
Grasim Cement, an ISO-9001, ISO-14001:2004, OHSAS 18001 & SA 8000 certified company of Aditya Birla Group, is located at village Rawan of Dist. Raipur in Chattishgarh State. The Cement plant of 1 MTPA capacity was successfully commissioned in March 1995 with most advanced State-of-Art technology available in the world. The plant capacity was soon enhanced to 1.7 MTPA by putting up a separate Slag Grinding & Mixing Unit. Presently the unit has reached the capacity of 2.16 MTPA after several minor modifications. Our Unit manufactures high quality OPC (Ordinary Portland Cement) & Blended Cement (PPC & PSC) with greater consistency keeping customer at the center of business. Our prime aim is to produce more blended cement so as to utilise the Granulated Blast Furnace Slag & Flyash, the wastes of Steel Plants & Thermal Power Plants respectively.

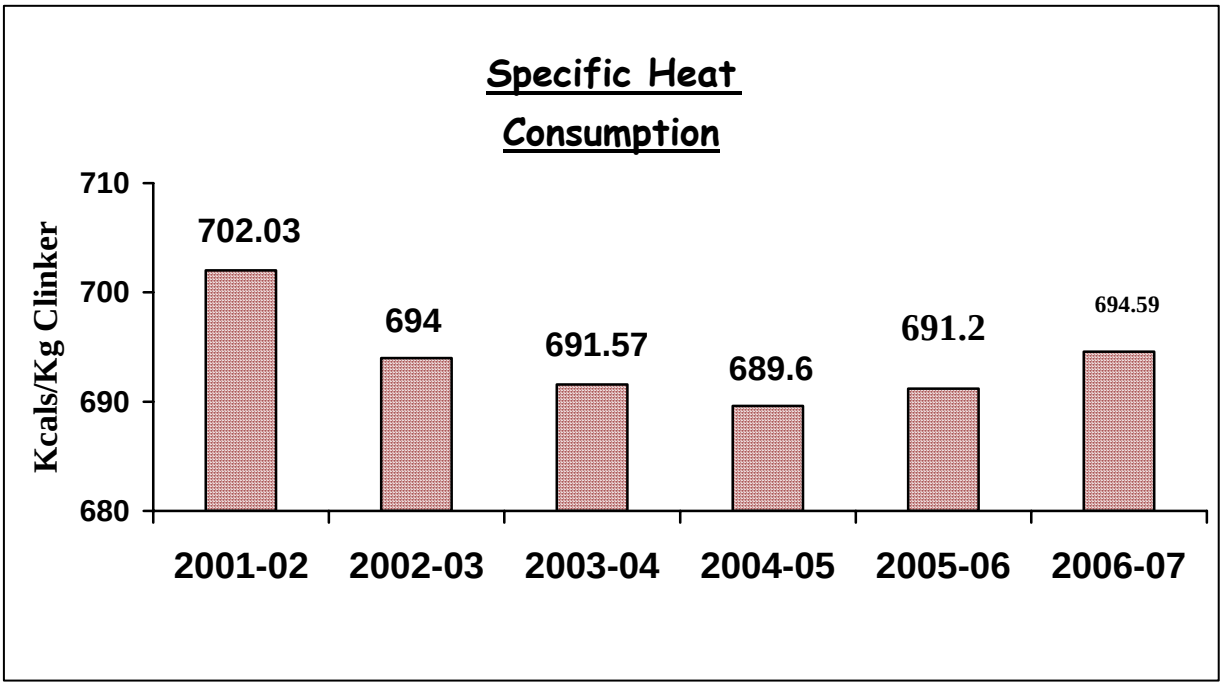
(ii) Energy Consumption:

The Cement Industry is highly energy intensive. The primary energy inputs are in the form of Coal for Clinkerisation, Furnace Oil for DG sets (Captive power generation) and Electrical power from State Electricity Board and captive power plant. As a result of implementation of various energy conservation measures on continual basis, there is a steady decline of specific energy consumption. Last four years' specific energy consumption figures are shown in the table and graphs as below:

Performance Indicator

SL No	DESCRIPTION	Unit	2004-05	2005-06	2006-07
1.	Electrical Energy	Kwh/T Cement	69.87	67.04	70.03
2.	Thermal Energy	Kcal/Kg Clinker	689.6	691.2	694.59
3.	Total cost of production	Rs. Lakhs	21743	25500.8	25801.69
4.	Total Energy Bill	Rs. Lakhs	8545.28	9935.65	10259.65
5.	Energy as percentage of total cost of production.	%	39.3	38.96	39.76


Specific Power Consumption
Kwh/MT Cement
85
75
65
82.51
75.47
71.17
69.87
67.04
70.03
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07

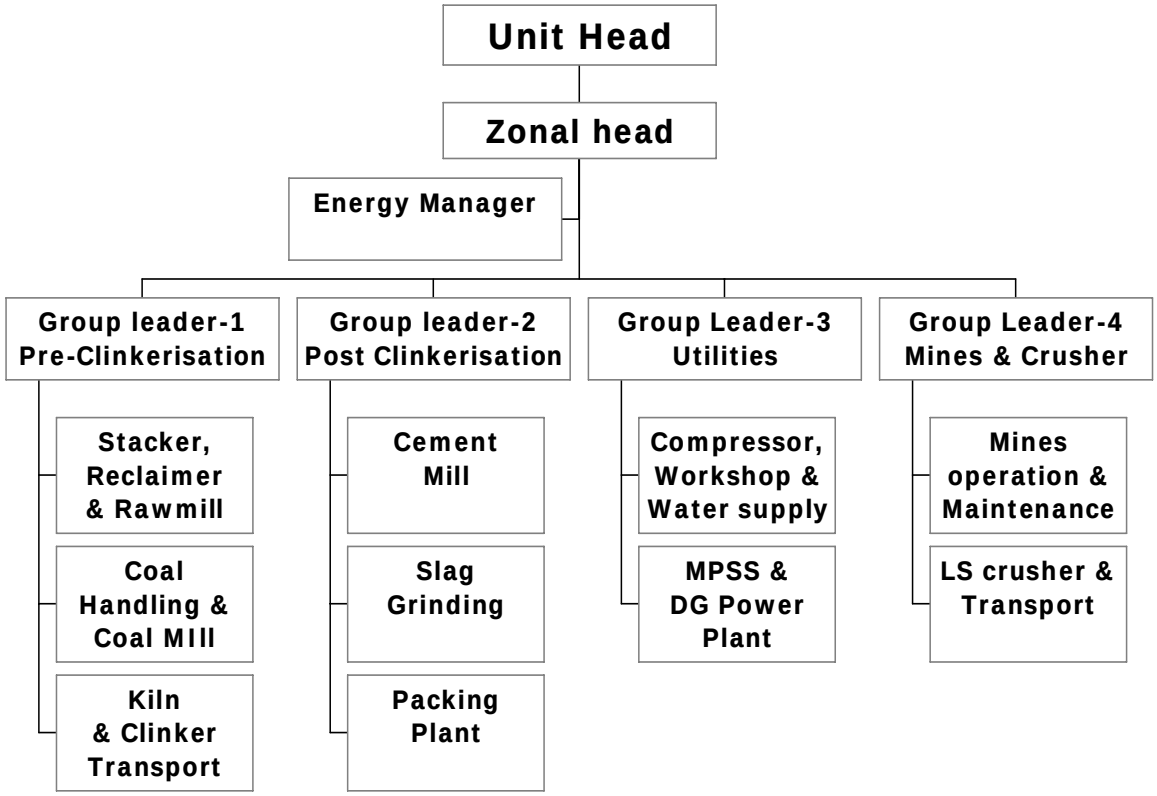

Specific Heat Consumption
Kcals/Kg Clinker
710
700
690
680
702.03
694
691.57
689.6
691.2
694.59
2001-02
2002-03
2003-04
2004-05
2005-06
2006-07

(iii) Energy Conservation, commitment, Policy & Set up:

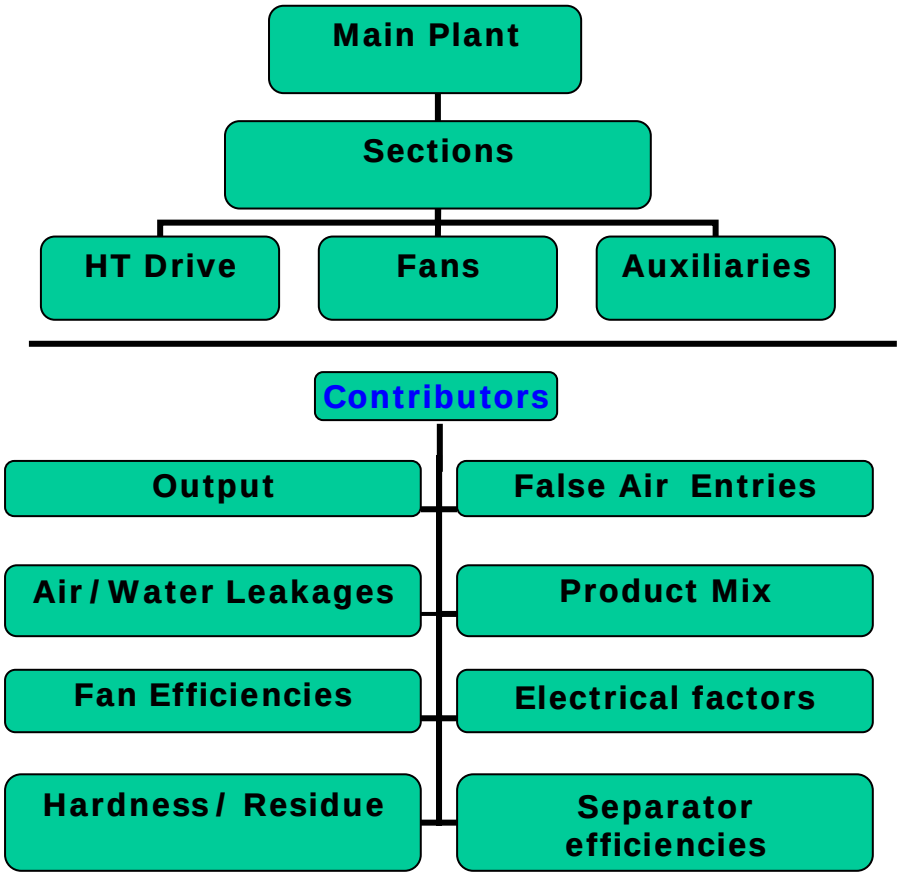
The management is fully committed to conserve the fast depleting energy resources and measures for energy conservation have been followed from design stage of the plant itself. We have been continuously striving for reduction in energy consumption since inception of the plant. To achieve this goal, a daily Technical co-ordination meeting is held in which day to day energy parameters are monitored and analysed. The Cross Functional teams for each section monitor and analyses energy consumption at drive level every day and give feedback to Unit Head. The concept of energy conservation is percolated down the line through WCM team leaders. Workers/ Staff contribute in reduction in energy consumption through Suggestion Scheme also. Good Suggestions are rewarded to motivate the people. Energy Performance parameters are also reviewed by Unit Head every month in Technical MPR (Monthly Performance Review) meeting. Energy Audits are also conducted by agencies like CTC (Central Technical Center, AV Birla Group) annually and other competent agencies like Optimum solution.

Please also refer **Annexure – B** for the details of energy conservation activities and methodology and **Annexure – H** for energy conservation policy.

Energy conservation cell structure



Electrical Energy Mapping



(iv) Energy Conservation Achievements:

Due to implementation of various energy conservation measures, the unit has been able to reduce its specific power consumption from 82.51 Kwh/tonne-cement in year 2001-02 to 70.03 Kwh / tonne-cement in year 2006-2007 and specific Heat consumption from 702 Kcal/ kg-clinker in year 2001-02 to 694.59 Kcal/kg-clinker in year 2006-2007.

The write up on the energy conservation and other projects completed during the year 2006-07 are given in **Annexure – B**.

(v) Energy Conservation Plans & Targets:

We are fully committed to our energy conservation drive and planning to implement following projects for further reduction in energy consumption:

Energy Conservation Measures (Planned)
Installation of VFD for process fans 4 nos.
Kiln upgradation to 5000 TPD capacity.
Replacement of DC motor with AC drive and SCIM in DAG and separator fan of Cement Mill
Replacement of 265 kw HT motor for bag house fan with VVVFD and LT motor.

Retrofitting with high efficiency impellor in coal mill booster fan
Installation of Solar Water heater in Guest house & Canteen
Installation of SPRS in 850 kw pre heater fan - III tower
Installation of of SPRS in 750 KW close circuit fan.

(v) Environment & Safety:

Grasim is dedicated towards ethics organization discharges its public responsibility simply by "Do what you say" motto. Therefore, "Fair Policies" have become core competency of Grasim.

Company has firm commitment towards public health and safety, environmental protection and waste management which is evident by:

1) Awarded ISO-14001 in Feb-98 for Environment Management System by maintaining World Class Environment i.e. pollution free, accident free, with elaborate Environmental Management Programmes.

2) Elaborate Safety Management Aiming at "Zero Accident" Disaster Management Plan. Grasim Cement is certified OHSAS 18001 company. The unit has carried out a detailed section/ area wise hazard identification. We are proud to inform that we did not have any fatal accident for the past four years.

To achieve these objectives company has developed following:

a) High tech electrostatic Precipitator and Bag filters for particulate matter control in stock at various stages and monitoring mechanism to control emission well below permissible limits.

b) Water spray devices at various places where dust emissions is possible.

c) Oil separator / traps in effluent water.

d) Well-equipped sophisticated environment laboratory with training personnel.

e) Strict Monitoring schedule including the near miss accidents

f) Environmental Audits / Safety Audits / Waste Management Audits.

g) Fire fighting tender and trained personnel / Mock drills.

h) Community satisfaction on surveys on Environmental Management Systems.

Following are some of the environment conservation activities:

- The water harvesting schemes in place by creating ponds for collection of monsoon rain water. The ponds area made in catchments area.

- Rain water harvesting systems installed in shopping complex and hospital roof top for collection and recharge to bore well to maintain ground water.

- The treated water from the Sewage treatment plant is used in horticultural activity through separate pipe lines.

- The domestic waste are segregated into bio degradable and non-biodegradable. The biodegradable waste is converted to manure by burying them in the pits. The non-biodegradable waste is segregated into polythene, metal & others to be sold for recycling purposes.

- Plant uses the old conveyor belts as constraints for localizing the dust as well as suppressing with water spray

- First time in Chattissgarh area Grasim has been transporting fly ash by closed tankers

- Fine iron metal particles segregated from slag grinding process are collected and turned into useful material for alloy making.

- Collection of traces of oil from the water used for working main equipment by installing oil separators and using the same for burning in pre-calciner of pyro-system

- Grasim has carried out massive plantation program and has 75000 sapling per year as target.

- Further we have plan to plant 1,00,000 saplings of Jatropha for bio-diesel

Material conservation

1. Fly ash, the solid wastes from thermal power plant and Slag, waste from steel making plant are used to manufacture blended cement. This replaces clinker in cement to an extent of 28% & 50 %. By manufacture of cement from clinker to an extent of 1.44 times , saves on the natural resource limestone as with less limestone more cement is produced.

2. Iron ore used is reject material from sponge iron instead of direct material from iron ore mines.

3. Use of by-product gypsum from fertilizer industry in-place of mineral gypsum.

4. De-silted mine pit water is used for industrial cooling. All the plant water consumption is from the mines pit water.

5. Slag mixing in PSC cement enhanced from 50% to 60%.

6. Utilisation of F-grade coal in place of B-Grade coal by installing Coal washery.

As show case of the efforts taken, Grasim cement has bagged several national and state level awards in energy conservation and environment protection.

"We continually strive to conserve energy and natural resources"

******