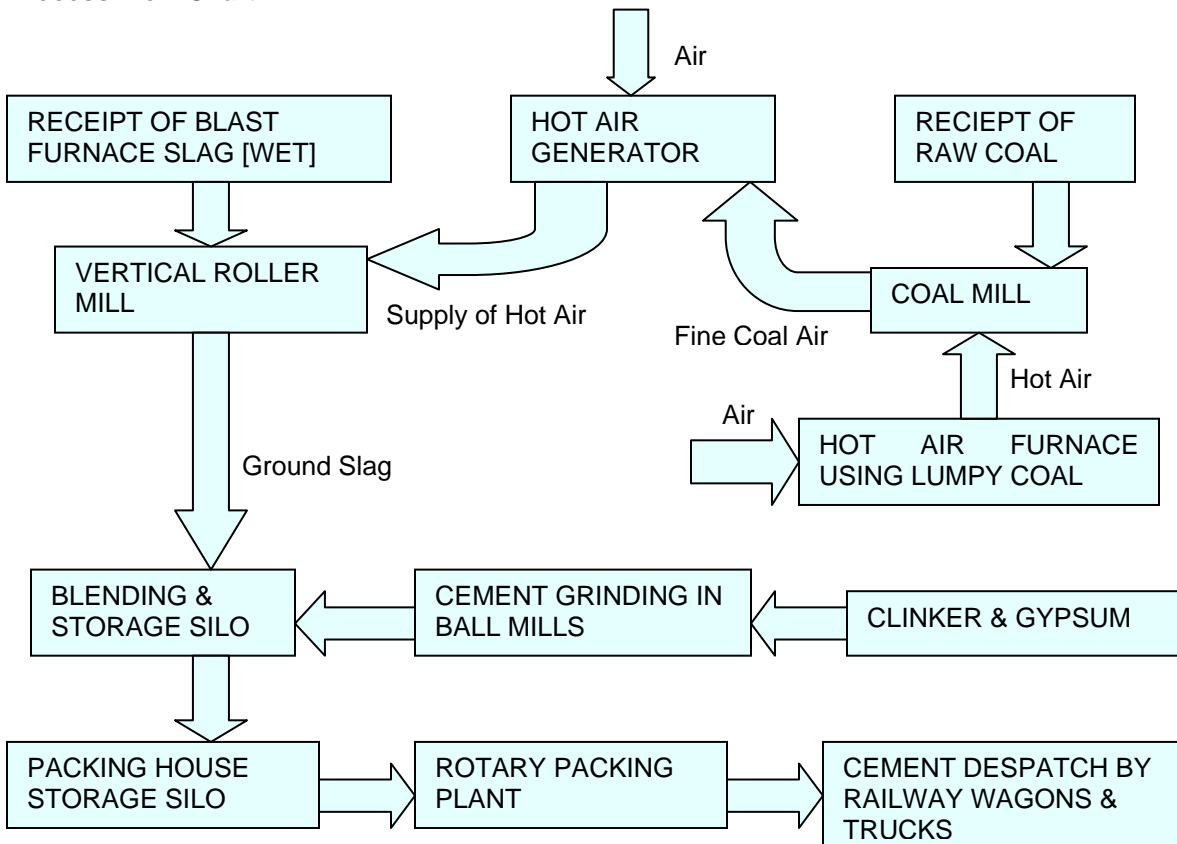


# The Associated Cement Companies Limited Sindri Cement Works, Sindri, Dhanbad, Jharkhand

## Unit Profile

Sindri Cement Works, a part of The Associated Cement Companies Limited, is the manufacturer of Blended Cement (**Portland Slag Cement**) in the name of "ACC Super". The total annual sales turnover of the works for the financial year 2003-2004 is Rs. 21486 Lakhs. It is situated in Sindri, Dist. Dhanbad in Jharkhand state. It is an ISO 9001 & ISO 14001 certified unit. It got ISO 9001 certificate in February 2000 and ISO 14001 certificate in July 2002.

## Process Flow Chart

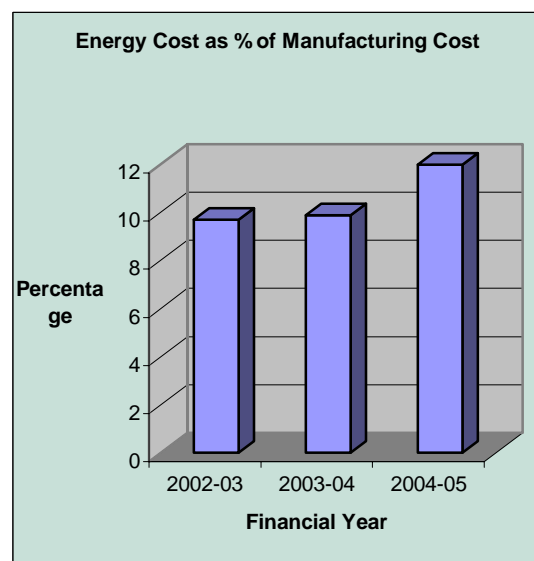
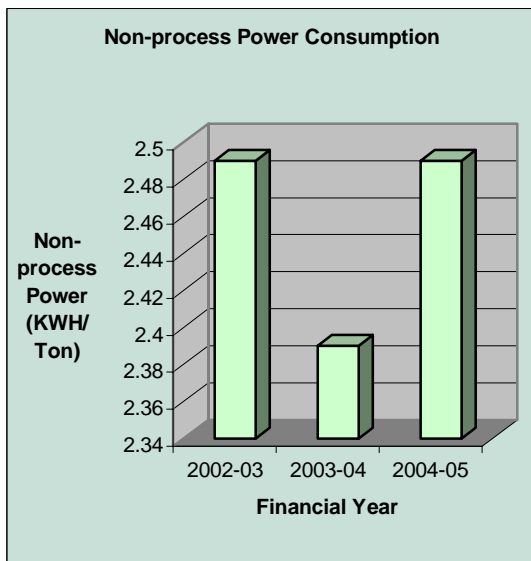
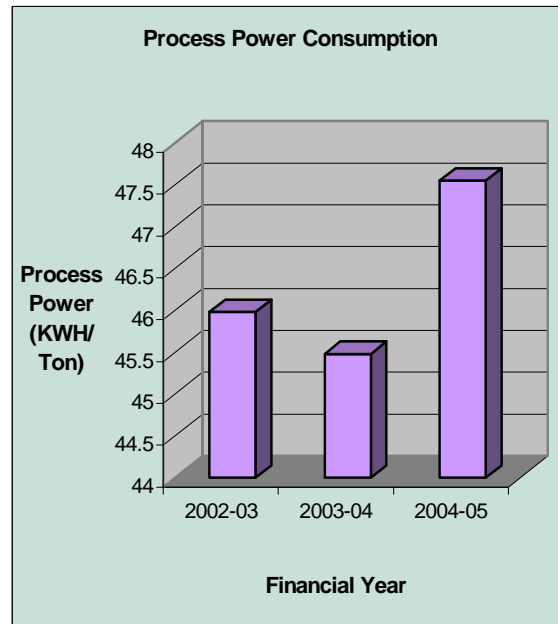
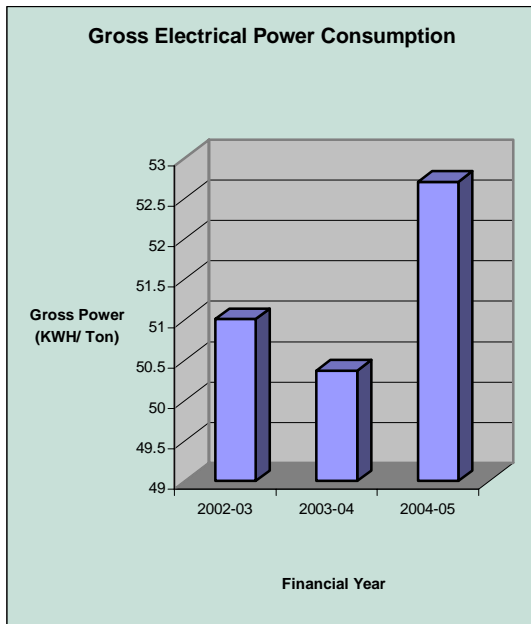


## Energy Consumption

There has been a steady decrease in the Electrical Energy Consumption over the last few years, which is very much clear by looking into the graphs given below.

DESCRIPTION	UNIT	2001-02	2002-03	2003-04
Annual Production	Lakhs Ton	6.47	7.08	7.3
Total Electrical Energy Consumption per annum	Lakhs KWH	348.307	361.667	367.720
Specific Electrical Energy Consumption	KWH/ Ton	53.83	51.08	50.37

YEAR	ELECTRICITY CONSUMPTION (KWH/ Ton)	% REDUCTION OVER 2002-03
2002-2003	51.01	--
2003-2004	50.37	1.25
2004-2005	52.71	- 3.33



## Energy Conservation Commitment, Policy and Set up

The ACC considers Energy Saving as a multi – disciplinary approach. Although the company's energy profile consists of mainly electrical energy, energy conservation projects still are being taken exclusively and budget is provided if required.

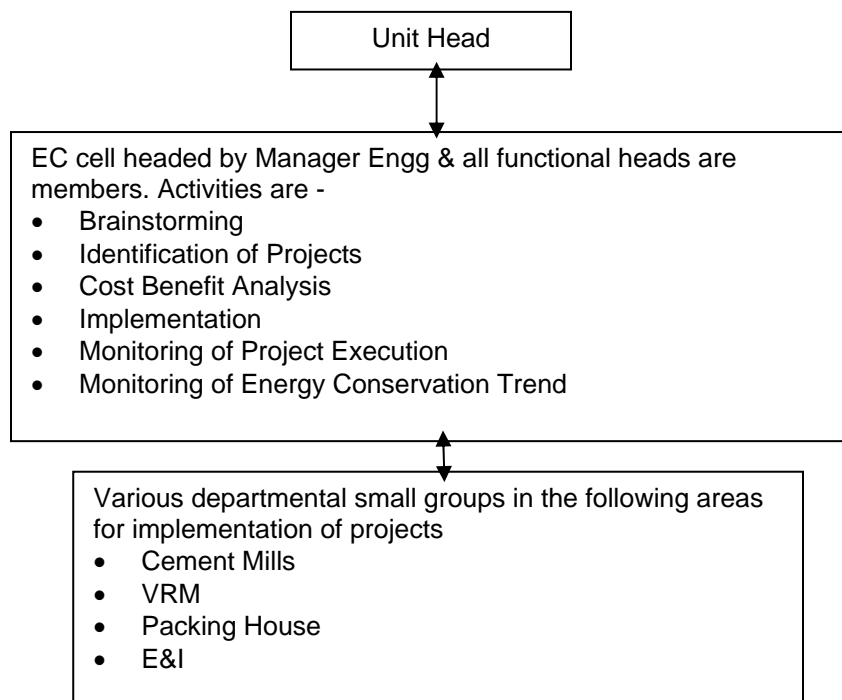
Energy Conservation week is celebrated every year from 14<sup>th</sup> December to 21<sup>st</sup> December. A poster, slogan and rangoli competition for children and ladies on energy saving and in – house programmes for employees are conducted. Suggestions on the energy saving are asked from the employees and the best ones are handsomely rewarded. One unique activity during this week is the honoring the housewife of the family having the least power consumption or best power saving record. The importance of the energy saving is emphasized through various SHE activities and TPM forum.

### Energy Management Policy

- Promote & encourage Energy Saving & conservation of natural resources.
- Create awareness among all people concerned with organization for Energy Saving.
- Encourage involvement through various training programme for conservation of Energy.
- Minimize wastage of any kind in daily activities in and around plant & colony.
- To make an effort to reduce the Energy cost on continual basis by adopting effective Energy Management.

### ENCON Cell Structure

EC Cell is headed by Manager Engineering & all the functional heads are member of the EC Cell. This cell meets everyday to monitor the power consumption pattern of previous day. Apart from this, monthly power consumption is also reviewed in meeting of all management staffs. This meeting is held every second Saturday and is chaired by Vice President. Projects evolved out of these meetings are executed in the departments by the departmental QC groups. The structure of the EC Cell is given below.



## Energy Conservation Achievements

### 1. CM3 separator modification

Before modification

- Output - 19 tph
- Sp. Power – 42.1 kWh/Tn OPC

After modification

- Output - 22 tph
- Sp. Power – 36.36 kWh/Tn OPC

Savings: 5.7 kWh/tn OPC, i.e. 2.8 kWh/tn PSC

Net savings = Rs. 63 Lakhs  
Investment = Rs. 25 Lakhs



### 2. Mechanical conveying of OPC

Before modification

- Sp. Power for OPC conveying - 1.6 kWh/tn OPC

After modification

- Sp. Power for OPC conveying - 0.32 kWh/tn OPC

Savings: 1.27 kWh/tn OPC, i.e. 0.63 kWh/tn PSC

Net saving = About Rs. 13.63 Lakhs per annum  
Investment = Rs. 31 Lakhs



### 3. Replacement of Low efficiency fans of Packing House with High Efficiency fans

Before modification

- Power of Packer fan – 25 kW.
- Power consumption of elevator fan – 13.6

After modification

- Power of Packer fan – 18 kW.
- Power consumption of elevator fan – 8.41

Savings: 0.84 Lakh unit

Net savings = Rs. 2.46 Lakhs per annum

Investment = Rs. 1 Lakhs



## **Brief write-up about the projects in 2004-05**

### **1. Replacement of old separator of Cement Mill 3 with new high efficiency separator.**

The efficiency of the earlier separator of Cement Mill 3 was very poor. This was the earlier generation Polysius make Turbo separator, which was having very little control over fineness & residue. The rpm of such separator can not be varied neither there is any provision of control of flow. Due to this, it was required to operate the cement mill almost in open circuit mode with very low velocity through mill in order to maintain quality. As a result we were loosing in output. At this point, it was decided to replace this old separator with a new high efficiency dynamic separator so that there is better control on the product as well as we could operate the mill in close circuit mode with higher mill velocity so that our output goes up.

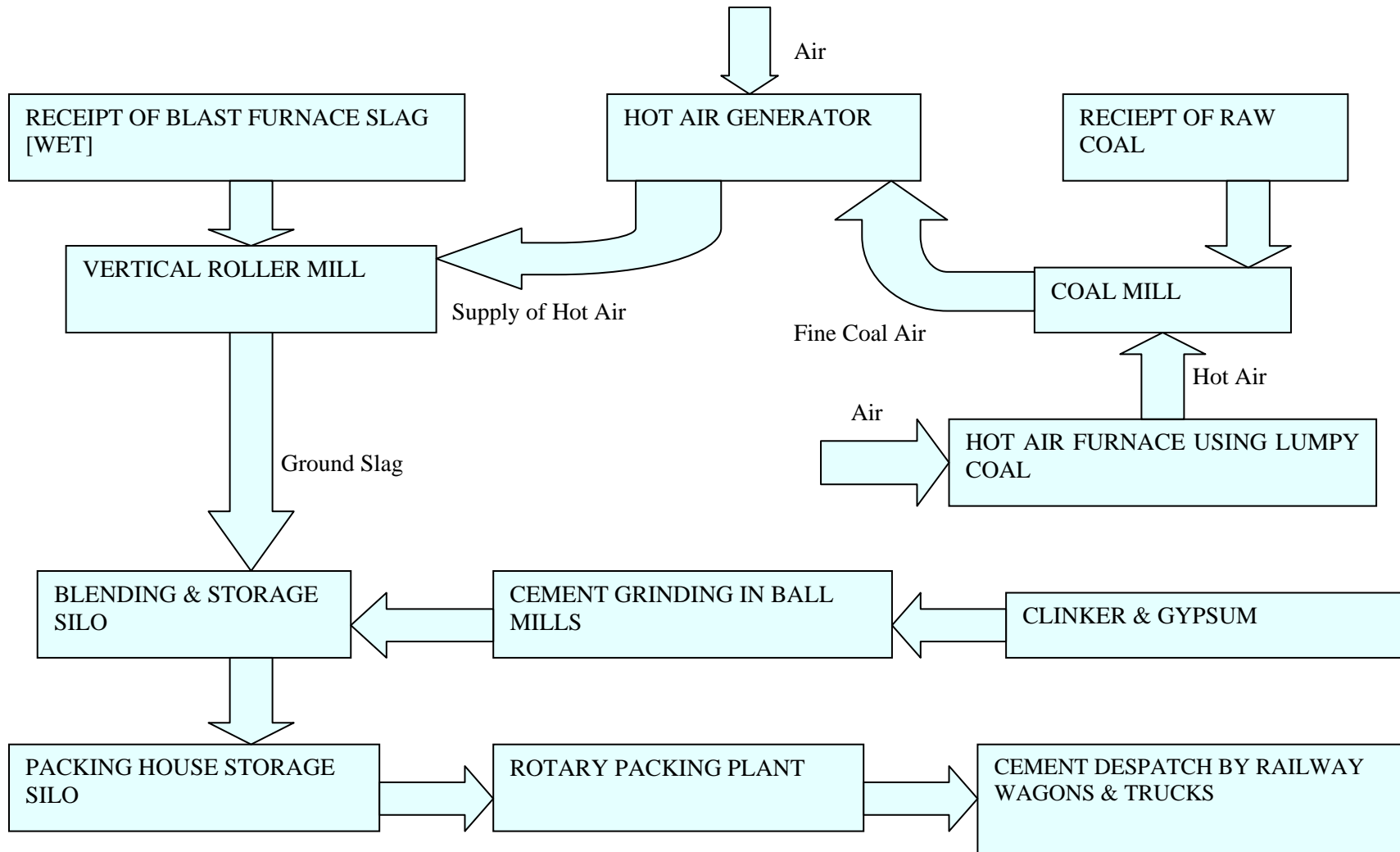
After this modification, the product residue has gone down from earlier 35 – 40 % to 25-26 % on 45  $\mu$ . Apart from this improvement in product quality, the output of the mill has also increased by around 3 tph. As a result there is an annual savings of 2.6 kWh/tn PSC. Net savings is around Rs. 63 lakhs per annum with an investment of Rs. 25 Lakhs.

### **2. Mechanical conveying of OPC**

The OPC produced in the cement mills were conveyed to the OPC silo pneumatically by means of D-pump. The power consumption of the pneumatic conveying was to the tune of 80 kW, which works out to be 1.6 kWh/tn OPC. We had replaced the same with mechanical conveying system involving belt conveyor & belt bucket elevator. Total Investment is Rs. 31 lacs. Total savings is to the tune of Rs. 13.63 Lacs per annum. savings is around Rs. 24 lakhs per annum with an investment of Rs. 1.3 Lakhs.

### **3. Modification of burner pipe of Hot air generator for consumption of low grade coal**

We are using Hot Air Generator (HAG) for generating hot air for use in VRM for slag drying. As fuel we are using b-grade coal. Whenever we tried lower grade of coal we faced lot of coating generation problem in HAG. We had replaced the burner with a modified one with better control of swirling, and after that replacement we are able to utilize 10% of low grade coal Thus we could save approximately Rs.21.6 Lacs per annum.



**Fig: Schematic Diagram showing the Production Process of Sindri Cement Works**