

BIRLA CORPORATION LTD.(Cement Division)
SATNA CEMENT WORKS
Satna (M.P)

COMPANY PROFILE :

Commissioned in 1959, Satna Cement Works (SCW) has the distinction of being the first Cement plant in Birla Group manufacturing Cement with the then prevailing "Wet process" technology. In keeping with technological developments, the plant was upgraded and switched over to "Dry process" of Cement manufacturing in 1989. The plant has been conferred with ISO-9001 and ISO-14001 certification in recognition of its performance in quality management and environmental management systems. Besides the conventional general purpose Cement OPC 43G , Satna Cement manufactures PPC utilizing Flyash. In consonance with its commitment to quality, necessary instrumentation facilities including X-Ray analyzer are provided for monitoring and controlling quality of Raw materials and Clinker/Cement. Our products are under the brand name "BIRLA CEMENT KHAJURAHO" and "BIRLA CEMENT SAMRAT" and our Cement is also being regularly exported to Nepal.

An split location Cement Grinding unit was commissioned in Dec.1998 at Raebareli (U.P.) for Flyash base PPC grinding capacity of 30000 TPM, Clinker is being sent from Satna .

In this global market Satna Cement Works has sustained because of more customer focus and Energy Management for reducing the operational & energy cost. 45 nos. quality circle teams have been formed. These team identify the Energy conservation / efficiency improvement projects. Idea and Kaizen schemes are also playing vital role to identify these projects.



An Overview of "Satna Cement Works" Plant

ENERGY CONSUMPTION:

The company has always accorded top priority for minimization of energy consumption by putting consistent efforts towards optimization of operating/process parameters, efforts have been made for reducing energy consumption, wherever possible, by adopting appropriate technology and suitably modifying the process stream with installation of necessary equipment /machinery etc.

Year	Total Energy consumption		Total cost of The energy used for the production	Energy consumption in terms of % of manufacturing cost
	Electricity Lakhs / year	Thermal Million Kcal / year	Rs. Lakhs / year	
2004-2005	812.98	73.63×10^4	5710	25.88 %
2005-2006	897.34	84.15×10^4	6767	22.91 %
2006-2007	897.34	84.15×10^4	6767	22.91 %

Year	Specific Energy Consumption	
	Electrical Energy (Kwh/tonne cement)	Thermal Energy (Kcal/kg Clinker)(On NCV Basis)
2004-2005	87.45	762
2005-2006	82.70	765
2006-2007	79.95	765

The various factors attributed to the above energy savings are installation of energy efficient equipment/system, optimization of process operating parameters, plugging of leakages, reduction of idle running of equipment, in house energy audit & implementation of outcome of the audits and regular in-plant energy monitoring etc.

Above efforts have paid rich dividends in the form of Energy Award (mentioned below) earned by Satna Cement Works:

- 9th Fuller Energy Conservation Award – First Prize – “ Maximum Percentage Reduction in Electrical Energy Consumption kWh/ Ton of Cement Production over the year 2004-05” in M.P. and Chhattisgarh states “ for the year 2005-06
- 9th Fuller Energy Conservation Award – Second Prize – “ Maximum Percentage Reduction in Thermal Energy Consumption Kcal/ kg of Clinker Production over the year 2004-05” in M.P. and Chhattisgarh states “ for the year 2005-06

ENERGY CONSERVATION COMMITMENT, POLICY AND SET UP :

With a view to sustaining energy conservation efforts, an "Energy Conservation Cell" has been instituted headed by President himself and comprising engineers from Production, Mechanical and Electrical departments. We have two **Certified Energy Auditors** from **BEE** in the cell. The cell has been entrusted with the responsibility of monitoring both Electrical & Thermal energy consumption on a continuous basis, advising concerned departments for taking corrective actions, wherever necessary and implementing energy saving schemes.

Our energy management policy is as follows:

Energy management Policy

We, at Birla Corporation Limited are committed to continuously improve the energy performance in all our activities and services to maximize reduction in energy consumption and to conserve energy resources for future generations without impairing productivity. To accomplish this, we will –

- Set targets and continuously monitor the energy consumption pattern and take corrective actions.
- Upgrade the process, technology and equipment to reduce the cost of energy and increase the profitability of the organization.
- Make energy conservation a mass movement by creating awareness and encouraging the employees participation at all levels.
- Enhance the use of non-conventional and renewable forms of energy wherever possible.
- Explore the possibility of waste heat recovery in the plant
- Ensure energy efficient Captive generation.

ENERGY CONSERVATION ACHIEVEMENTS

During the period between 2004-2006 Satna Cement Works has implemented many proposals received by workmen's suggestions, In house energy audits by EC etc. This resulted in to saving of Rs.146 Lakhs with an investment of Rs.334 Lakhs. This has resulted in a reduction of 8.58% in specific electrical energy consumption in cement production.

Energy Conservation measures taken in year 2006-2007

a) Installation of compressed air energy saver

In SCW Conversion plant 1 nos compressed air energy saver is installed to reduce the pressure from 6.5 to 3.5 Kg/cm². Diameter of main header increased from 5" to 6" and 33 bend were also removed. It also reduced the line losses and friction losses in the compressed air line.

Before installation

Power consumption per day = 6421 kWh

After installation

Power consumption per day = 5585 kWh

Total Saving per annum = 3.05 lakhs kWh

b) Installation of new pullies to reduce RPM of two nos. Fans in Packing Plant

Installation of new pullies in two nos. BDC fan motors, in Packing Plant to reduced the RPM as well as power.

Before installation

Actual load of 2 nos. fan = 14.7 KW

After installation

Actual load of 2 nos. fan = 7.0 KW

Power saving per annum = 0.56 kWh

c) Replacement of “A” Quarry Pump with Energy efficient pump

Before installation

Actual load = 72.91 KW

After installation

Actual load = 60.10 KW

Power saving per annum = 0.82 kWh

d) Interlocking of 75 KW BDC fan to avoid idle running

Interlocking of 75 KW BDC fan has been done to avoid idle running. Now whenever Packer stops, Fan stops after 5 minutes. Motor takes approx.55 KW of power. Interlocking has saved idle running of 4 hours a day.

Power saving per annum = 0.80 kWh

ENERGY CONSERVATION PLANS AND TARGETS:

The plant management and staff are committed for improving their energy efficiency further by setting still lower energy consumption targets and this an on-going journey towards achieving excellence in energy consumption. Our plans for Energy Conservation is as follows:

Energy Conservation plans	Anticipated saving			Approx. Investment (Rs. lakhs)	Project completion Year
	Energy Value				
	KWh/ Tonne	Kcal/Kg	Rs. Lakhs		
Capacity enhancement from 3400 to 4500 TPD clinker	-	25	139.77	11129	Year 07-08
Providing header near the supply point of the water and using existing HDPE pipe-315mm diameter, most of the time for conveying water from Quarry reservoir to Plant	1.31	-	4.68	1.00	Year 07-08

ENVIRONMENT AND SAFETY:

Besides the energy conservation measures, the company has also given due attention towards environmental control in mines as well as plant site. As mentioned earlier, BCL - Satna has been awarded with an International recognition "ISO-14001" certification for implementing Environmental Management System. Following awards have been recently received –

- 1) “Safety Excellence Award -2007” given by National Safety Council
- 2) “Greentech Environment Excellence award - 2007” given by Greentech Foundation, New Delhi

RURAL DEVELOPMENT ACTIVITIES:

Following activities have been taken up for the development of rural areas :

- 1) Improvement of water supply management – Cleaning of ponds and construction of water tanks
- 2) Contribution for spiritual and morale development – Contribution for making temples and dharmashala.
- 3) Educational aids – Construction of school building, rooms in schools, providing desks, stationary and sports material.
- 4) Medical aids – provision of X-Ray machine, ECG machine and Diathermy machine along with other accessories for the benefit of villagers in Civil Hospital-Satna. Organizing medical camps.
