SHRIRAM CEMENT WORKS - KOTA, RAJASTHAN

UNIT PROFILE

Shriram Cement Works (SCW) is a unit of DCM Shriram Consolidated Limited (DSCL), a company engaged in the manufacture of Urea, PVC, Caustic Soda, Sugar, Cement and Textiles. Besides its own products, it also markets hybrid seeds, POP and DAP. Out of DSCL's annual turnover of 2938 Rs/cr in 2006-07, SCW's contribution was 121 crores.

SCW is an **unconventional wet process cement plant** based on waste calcium hydroxide sludge of sister calcium carbide plant, located in the same complex.

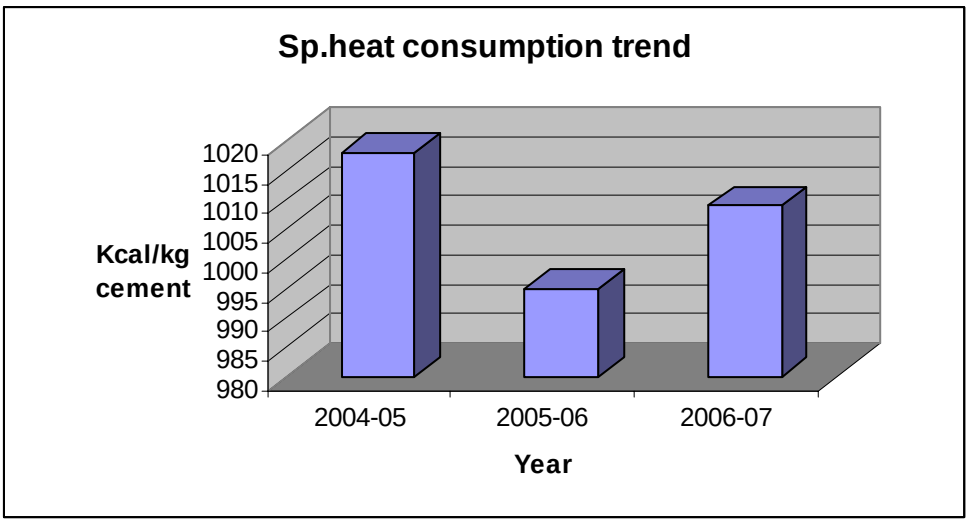
SCW was commissioned in 1987 with the technical know-how from M/s. Lafarge Coppee Lavelin, France. Products of the plant are OPC-53 grade and PPC. The **plant is certified for ISO 9001, 14001 and OHSAS 18001** for its effective Quality, Environment, and Occupational Health and Safety Management Systems.

Initial installed capacity of SCW was 2.0 lakh tons cement per annum, which is later expanded to 4.0 lakh tons in the year 2004. Its capacity utilisation is 92% in 2006-07.

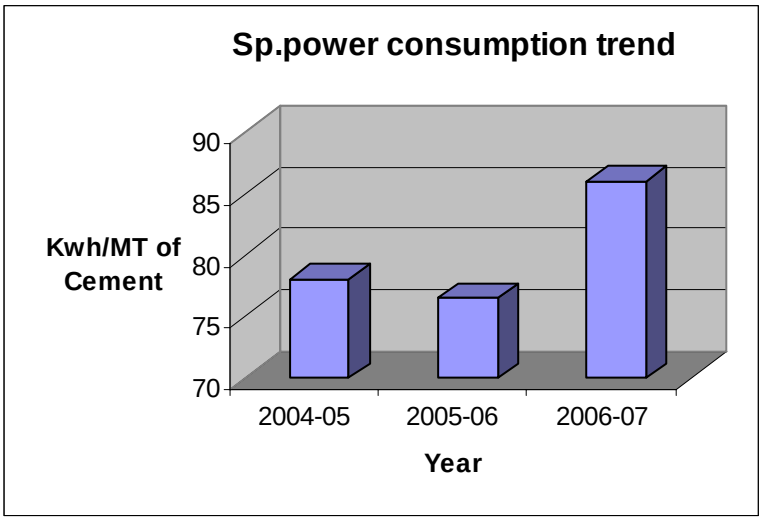
ENERGY CONSUMPTION

Total electrical energy consumption of the plant in 2006-07 was 317.5 lakh kwh, which is fully met from sister fertiliser plant's captive power plant, located in the same complex. Thermal energy requirements of the plant were met by coal, char coal and small quantity of furnace oil. In 2006-07, 0.7 lakh tones of coal, 0.04 lakh tons of char coal and 60 KL of furnace oil were consumed. Specific energy consumption figures for 2006-07 are 86 kwh/t of cement and 1009 Kcal/kg of cement. Cost of the energy is 48.5% of ex-works cost.

Specific Heat Consumption Trend



Specific Power Consumption Trend



ENERGY CONSERVATION COMMITMENT, POLICY AND SET UP

In order to meet company's cost reduction objective and also with an objective to conserve natural resources, special attention is given in reducing energy consumption in various sections of the plant.

To focus the attention on energy conservation, Energy Conservation Cell (EC) was created which is coordinated by energy manager and guided by the top management. It consists of section-in-charges of production, maintenance and quality.

Energy policy of Shriram Cement Works is enclosed which shows the commitment of top management towards energy conservation.

EC prepares energy performance of the plant on daily and monthly as well as yearly basis. The reports thus prepared are reviewed at different levels of management as given below:

- Daily review in production meeting where weak areas are identified and corrective measures are taken immediately.
- Monthly review by Vice President
- Yearly review for setting up energy targets for next year.

Shriram Cement Works believes in team work and plant optimisation. With the suggestions given by the employees and with modest investments, considerable energy savings were achieved over the years. SCW not only implements latest energy conservation techniques but also sustains it by regular maintenance and by providing adequate training.

ENERGY CONSERVATION ACHIEVEMENTS

During, last 3 years, SCW has implemented several energy conservation measures, which has resulted in **Rs/cr 2.9 saving in energy consumption.** A brief description of major projects implemented during the year 2006 -07 is given below :

1. Energy efficient vacuum pump in place of roots blower:

Existing roots blower of rotary vacuum drum filter was drawing high power and breakdowns were large. It is replaced with energy efficient liquid seal vacuum pump which has improved not only its reliability but also reduced its power consumption.

Investment : Rs/lakhs 8.5
Annual savings : 2 lakh kwh/year
Rs/lakhs/year 5.3

2. Retrofitting of.energy efficient fans

Based on energy audit findings, 3 nos of low efficient fans are replaced with high efficiency fans.

Investment : Rs/lakhs 2.4
Annual savings : 2 lakh kwh/year
Rs/lakhs 5.3

3. Installation energy efficient slurry pump

Energy efficient slurry pump is installed to pump kiln feed slurry at low energy.

Investment : Rs/lakhs 3.5
Annual savings : 1 lakhKwh/year
Rs/lakhs 2.6

4. Installation of rotary air lock at ESP dust reintroduction:

To arrest false air and reduce energy losses, a new rotary air lock was introduced in kiln circuit at ESP dust reintroduction point.

Investment : Rs/Lakhs 1.0
Annual savings : 222 mkcal/year heat saving
Rs/ Lakhs 1.0

ENERGY CONSERVATION PLANS AND TARGETS

At SCW, several schemes for energy conservation are planned. Major schemes are as follows:

Energy Conservation Measures	Year of implement-ation	Yearly savings			Investment (Rs/Lacs)
		Electrical (Lacs Kwh)	Thermal (Million Kcal)	(Rs/Lacs)	
1. Dewatering of	2008	Nil	10000	52.0	550

sludge					
2. Retrofitting of grate cooler	2008	2.0	10000	54.0	150
3. High efficiency Burner	2008	0	3000	15.0	30
4. Dry process conversion	2009	40.0	130000	750	5000

Our energy conservation targets are to reduce specific power consumption by 11.6% in next 3 years and heat consumption by 2.3% by implementing latest energy conservation schemes and making higher quantity of PPC and increasing the quantity of fly ash in PPC.

ENVIRONMENT

Besides energy conservation programmes, the plant also gives due attention to environmental improvement. Various dust collecting devices including bag filters, ESP and water spray systems are installed at various locations of the plant. Periodic monitoring of dust emissions are carried out. The plant has accorded special priority towards tree plantation and development of green belt in and around the plant.
In 2006-07, a new ESP in kiln exhaust was installed at a cost of Rs/cr 2.9 to reduce dust emissions below 50 mg/Nm3 of exit gases.
The **plant is certified for ISO 14001** for its effective environment management system.

SAFETY

Industrial safety is an essential and integral part of operations at SCW.

Following are the salient features of safety management:

- Functioning of inter departmental safety committee
- Training imparted to employees on first aid and fire fighting
- Work permit system for all types of maintenance jobs
- On-site and off-site emergency plans
- Safety audit by internal as well as external auditors

In addition, safety day is celebrated every year on 4th March, where Executive Director of the company distributes prizes for fire fighting and persons who have won prizes on safety slogans/sketches/poem competitions.

The **plant is certified with OHSAS 18001** for its effective safety and occupational health management system. The plant was recently awarded **Five star status and British Sword of Honour by British Safety Council** for overall safety performance of the plant .