

Lakshmi Cement (A Div. of J.K. Corp. Ltd.)

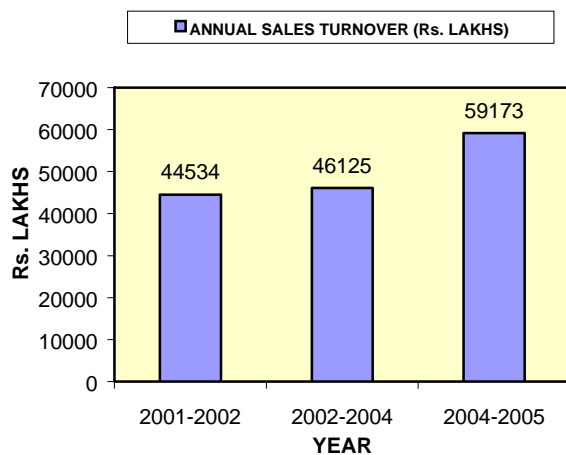
Unit profile

Lakshmi cement is promoted by M/s J.K. Corp. Ltd. And a member of well-known J.K. Organization, which is one of largest privately, owned industry groups in India. The plant is having annual installed capacity of 24.00 lakhs tones along with 27 MW installed capacity D.G. powerhouse. M/s Lakshmi Cement markets its product in Rajas than, Gujarat, Maharastra, Northern region of India including Punjab, Haryana, Delhi and J&K. M/s Lakshmi cement contributes 11 % of total cement production in Rajasthan and 7 % of total cement production in Gujarat.

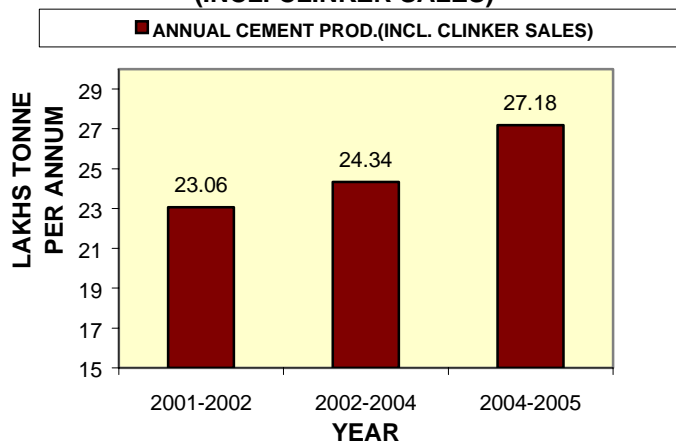
Energy Consumption

Description	Unit	2001-02	2002-04 Oct – Mar (18 months)	2004-05
Installed capacity	LTPA	24.00	24.00	24.00
Actual production	LTPA	23.06	3651(24.34)	27.18
% utilization	%	96.08	101.42	113.24
Coal consumption	Tonnes	238268	349845(233230)	259715
Total cost of coal	Rs Lakhs	5638.11	8987.40(5991.60)	9017.45
Electricity consumption	Lakh kwh	1938.85	3125.30(2083.53)	2272.28
Total electricity cost	Rs. Lakhs	7913.03	12928.15(8618.77)	9243.35
Energy consumption in terms of % of mfg. Cost (variable cost)	%	68.53	67.62	71.49%
Specific electrical energy consumption (excluding crusher)	Kwh/Ton of cement	87.51	85.80	83.72
Specific thermal energy consumption	Kcal/kg clinker	744	738	746
Coal consumption	Kg/ton of cement	106.00	94.00	93

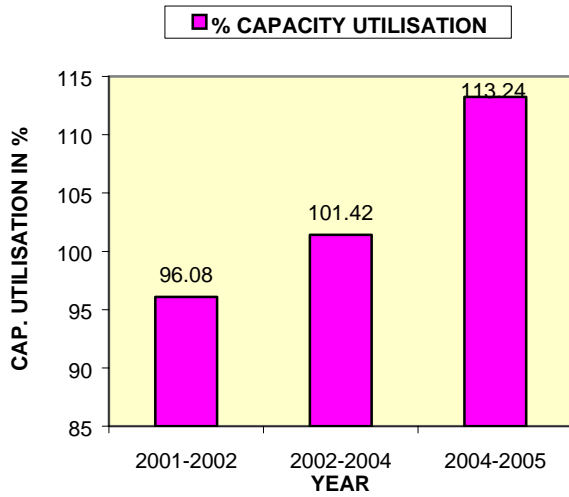
ANNUAL SALES TURNOVER



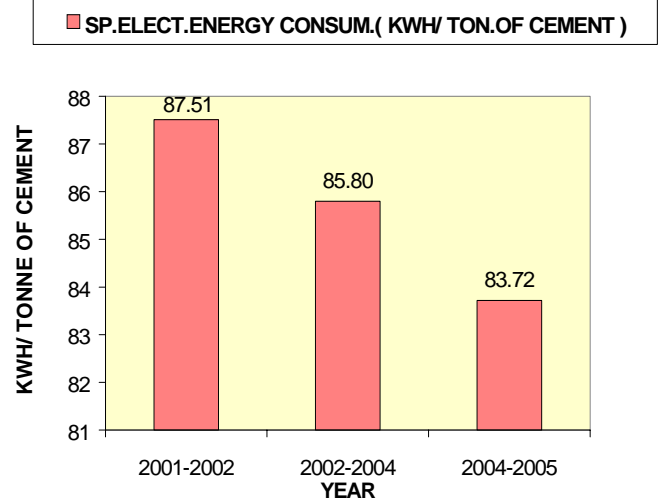
ANNUAL CEMENT PROD. (INCL. CLINKER SALES)



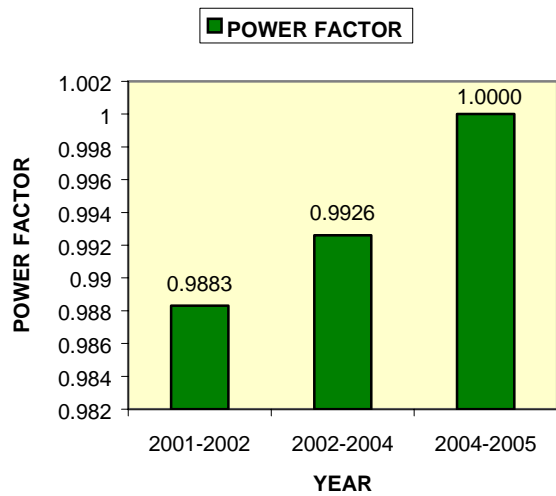
% CAPACITY UTILISATION



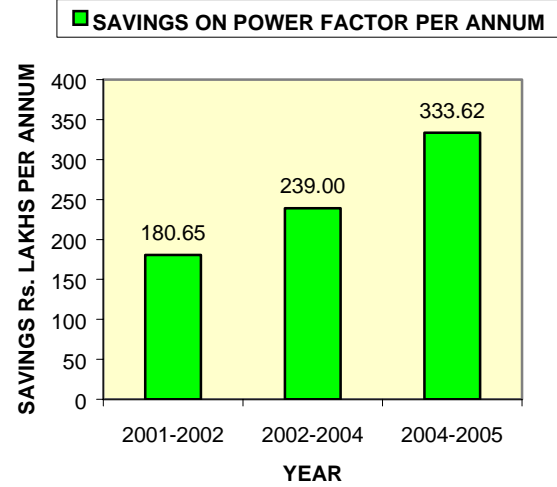
SP. ELECT. ENERGY CONSUMPTION



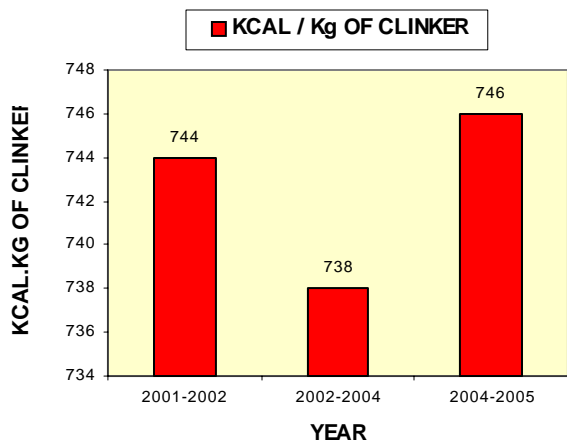
AVR. POWER FACTOR



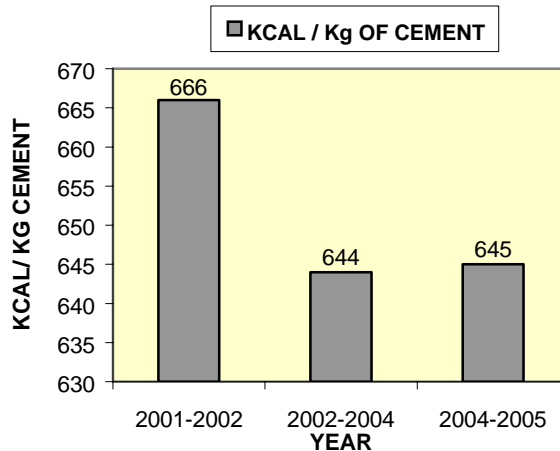
SAVINGS ON POWER FACTOR



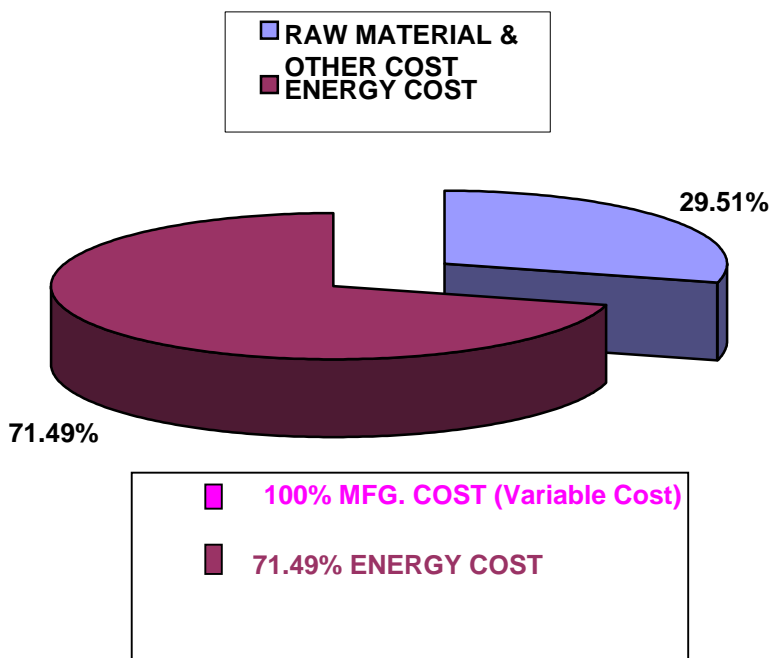
SP. THERMAL ENERGY CONSUMPTION



SP. THERMAL ENERGY CONSUMPTION



ENERGY COST AS % OF MFG. COST FOR THE YEAR 2004 - 2005



Year	Electricity consumption		Coal Consumption	
	Kwh/ton of Cement	% Reduction over 2001-2002	Kg/ton of Cement	% Reduction over 2001-2002
2001-202	87.51	-	106.00	-
2002-2004	85.80	1.95%	94.00	11.32%
2004-2005	83.72	4.33%	93.00	12.26%

Energy Conservation Commitment, Policy and Organizational Setup

The management of Lakshmi cement is committed to total energy management and prevention of energy wastage by:-

- Close monitoring, control and analyze the equipment and process performance for specific energy consumption.
- Explore the possibility of cheaper alternative fuel and waste products.
- Create awareness for energy conservation.
- Conduct training programmes for energy consumption.
- Conduct energy audit to identify opportunities for improvement of overall energy efficiency of the plant.

The management considers energy efficiency of equipments on the basis of cost benefit analysis while purchasing the new equipments.

Energy Management cell headed by energy manager is functioning for regular monitoring control wastage of energy.

Company involves different cement process experts/consultants/energy audits agencies to identify & suggest scope of improvement in energy efficiency.

Actively participate in cement sector task force meeting, organized by B.E.E. and exchange the views regarding energy consumption norms.

The company is going to set-up 36MW thermal power plant to reduce energy cost.

The energy management committee chaired by the chief Executive works meets every Monday to review the weekly energy performance, action plan and ENCON activities.

A copy of Energy Management policy (in English & Hindi) is attached herewith.

Major Energy Conservation Projects Implemented during the year 2004-2005

During the period 2004-2005 around 21 nos. major and a lot of minor activities were carried out for energy conservation measure, which were generated during group discussion, CFT meeting and energy conservation meetings.

Total saving Rs 941.86 lakhs was achieved with an investment of Rs 247.68 Lakhs. The major projects implemented during the year 2004-2005 are given below.

Lifted cyclone roof of cyclone-05 & 06

Status	High pressure drop across cyclone & lower heat transfer rate
Action	Increase height of cyclone roof by 1mtr.
Results achieved	Preheater O/L draft reduced by 50 mmWG & increased heat transfer rate across Cyclone-05 & 06
Saving achieved	Thermal energy saving by 4 kcal/kg clinker Electrical energy saving by 50 kw/hr. 15.84 lakh Rs in power 20.16 lakh Rs in fuel cost
Total annual saving	36.00 lakh Rs

Louver ring angle changed

Status	High pressure drop across louver ring
Action	Increase the louver ring area by increase the Louver ring angle from 45° to 70° Energy saving by 40 kw/hr
Saving achieved	10.74 lakh Rs.

False air arrested in VRM-02 circuit

Status	False air across VRM circuit is 22% (Mill inlet to bag house stack) the same, across VRM circuit
Results achieved	False air ingress has been arrested by 3% i.e. 22% to 19%
Saving achieved	Rs. 29.01 lakh

False air arrested in VRM-01 circuit

Status	False air across VRM circuit is 22% (Mill inlet to bag house stack) the same, across VRM circuit
Results achieved	False air ingress has been arrested by 2% i.e. 22% to 20%
Saving achieved	23.10 lakh

In Kiln-03 False air arrested in Preheater

Status	Oxygen at Preheater fan outlet is 5.8%
Action	Identified leakage point and plugged the same,
Results achieved	False air ingress across Preheater has been arrested by limiting oxygen 5.5 from 5.8% at Ph Fan outlet, while maintaining same oxygen at kiln inlet i.e. 3.5%

Saving achieved **32.23 lakh**

Removal air slide blower in VRM-01 & 02

Status Feasibility of removing 2 No. of air slide Blower in each VRM was explored by Changing layout of Air slides.

Action Modified layout and removed 2 No. of air Slide blower in Raw meal transport circuit.

Results achieved 10 kw/hr energy saving

Saving achieved 2.69 lakh in each VRM

Total saving **5.37 lakh**

Removal ESP screw conveyor in K-02 & K-03

Status Feasibility of removing 2 No. of screw conveyor in each Cooler ESP was explored.

Action Removal 4 No. of screw conveyor in ESP circuit

Results achieved 16 kw/hr energy saving

Saving achieved 5.13 lakh in each ESP cooler circuit

Total saving **10.26 lakh**

ENERGY CONSERVATION PLANS AND TARGETS				
S. No.	Energy Conservation Measures (Planned)	Anticipated Savings in Energy (Rs. Lakhs)	Approx. Investment (Rs. Lakhs)	Project Commencement & Completion year
1.	To reduce the pressure drop across the Pre-heater of Kiln -2, for improvement in productivity and specific power consumption of pyro processing system.	165.00	1630.00	Oct-06
2.	To enlarge Pre-heater down-comer duct of Kiln- 2 for improvement of productivity and sp.power consumption of pyroprocessing system.	106.00	178.00	Oct-06
3.	Installation of particle size analyzer for improvement of consistency of product quality.	12.00	14.00	Under active Consideration.
4.	To install water-spray system in Pre-heater down-comer duct of Kiln - 2 to improve productivity and sp. Power consumption of pyro processing system.	30.00	32.00	Oct-06
5.	To increase diameter of Pre-heater cyclones and modification of P.C. vessel and Riser-duct of Kiln - 2.	250.00	400.00	Oct-06
6.	To study the ducting profile of major fans for reducing pressure drop and improvement in sp. Power consumption.	60.00	50.00	Under active Consideration.
7.	Installation & Commissioning of Cement Mill No.-4.	To increase volume of Cement Production	600.00	Nov-05
8.	Installation & Commissioning of 36 MW cap. Thermal Power Plant.	3000.00	14500.00	Mar-07