Rajashree Cement, Aditya Nagar

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❖ About the Group

The Aditya Birla Group is India's first truly multinational corporation. Global in vision, rooted in Indian values, the Group is driven by a performance ethic pegged on value creation for its multiple stakeholders. A US$ 6.7 billion conglomerate, with a market capitalisation of US$ 7 billion, it is anchored by an extraordinary force of 72,000 employees belonging to over 20 different nationalities. Over 30 per cent of its revenues flow from its operations across the world.

The Group's products and services offer distinctive customer solutions. Its 66 state-of-the-art manufacturing units and sectoral services span India, Thailand, Indonesia, Malaysia, Philippines, Egypt, Canada, Australia and China.

A premium conglomerate, the Aditya Birla Group is a dominant player in all of the sectors in which it operates. Such as viscose staple fibre, non-ferrous metals, cement, viscose filament yarn, branded apparel, carbon black, chemicals, fertilisers, sponge iron, insulators and financial services. It is:

- The world no. 1 in viscose staple fibre,
- The world's largest single location palm oil producer,
- Asia's largest integrated aluminium producer,
- A globally competitive, fast-growing copper producer,
- The world's third largest producer of insulators,
- Globally, the fifth largest producer of carbon black,
- The world's eight largest producer of cement, and the largest in a single geography,
- India's premier branded garments player,
- Among India's most energy efficient private sector fertiliser plants,
- India's second largest producer of viscose filament yarn,
- The no. 2 private sector insurance company, and the fourth largest asset management company in India,
- The Group has also made successful forays into the IT and BPO sectors.

Beyond business

A value-based, caring corporate citizen, the Aditya Birla Group inherently believes in the trusteeship concept of management. Part of the Group's profits are ploughed back into meaningful welfare-driven initiatives that make a qualitative difference to the lives of marginalised people. These activities are carried out under the aegis of the Aditya Birla Center for Community Initiatives and Rural Development, which are spearheaded by Mrs. Rajashree Birla.

About Rajashree Cement

Rajashree Cement, established in 1983, with a capacity of 0.50 million ton per annum cement capacities enhanced to 3.2 million ton per annum by installation of two more units in 1990 & 1995 , further plant up gradation and internal modification done in the year 2002- 03 & 03-04 unit-I,II,III the following major modification done

__ unit-1 preheator upgradation from v stage to VI stage preheator and cyclone modification

__ Installation of triplet cyclone in unit-II & III ,

__ Upgradation of cooler by installation of omega plate in 1ST grade in all three units now Rajashree cement is one of the largest single located Grey Cement Manufacturer in Grasim Cement Division under Grasim Industries Ltd. of AV Birla Group, having a capacity of 4.2 MTPA cement production. The

Cement plant is also equipped with Captive Thermal Power Plant of capacity 38.2 MW & DGPP of capacity 23.6 MW, facilitating to serve the customers' through out the year.

The Company produces a variety of product range in the cement, viz., Rajashree Cement - 43 Grade, Birla super Cement - 53 Grade, Birla Plus Cement – PPC. The deliverance of products to the end user is made through a well established Dealer/ Retailer Network with sufficient stock points/ godowns. The SAP R/3 System with sales and distribution module is used to book orders with an assurance of delivery within 48 Hrs. from any of the nearest Depot/ Dealer.

In order to meet the growing customer demand for the products / services in the parts of Western and Southern regions, the following additional facilities have been established.

- Cement Split grinding unit at Hotgi, with a capacity of 3500 TPD - 1995
- Bulk Loading Terminal at Doddaballapur with a capacity of 180 TPH of packing - 1999
- Readymix Concrete Plant at Hyderabad, Chennai and Bangalore, with a total capacity of 300 m3/hour – 99-00.
- Facilities for Bulk loading of Clinker & Cement at Rajashree
- Owns 3 Bulk Rakes to transport Cement to Packing Plant, Dodda Ballapur for catering Karnataka and Kerala markets.

❖ **The regulatory environment within which the applicant operates, Including occupational health and safety, environmental, financial regulations, etc**.

Rajashree Cement is located in the notified backward area and is governed by relevant industry acts for Mining, Water, Pollution, Safety, etc. The Company policy is to conduct its operations safely, protecting the health of its employees and all others who may be affected by its operations with due regard to environmental protection and compliance to statute. In the interest of the organisation and employees with regard to Safety, Health and Environment, we have excellent regulating & monitoring systems, such as,

- Identification of defects related to equipment / environment / safety and audits of the same by the Internal and External Parties.
- 10 Bedded hospital with ECG, X-Ray facilities and extension of medical services to contract labourers and villagers.
- ISO-14001 Environmental Systems, WCM, Afforestation of Mine Bunds and Pits.
- ISO-9001:2000 Quality Management System.
- The Unit is also implementing OHSAS-18001 & SA – 8000 within 4 months of time.

❖ **Major Thrust Areas**

a. **WCM:** World Class Manufacturing (WCM) is adopted to improve Employee Participation in small groups in excelling the manufacturing and improving the overall equipment efficiency by eliminating all forms of defects and losses.

b. **Total Quality Management** : In order to improve the Quality Management Performance of the organization, the International Quality Rating System (IQRS) has been adopted and attained level 6 in the year 1999. Further in this direction, Six Sigma concept has been initiated to improve the process efficiencies and 4 projects were initiated under this concept. It is our endeavour to sustain and improve further on a continuous basis.

c. **Strategic Quality Planning :** The Strategic Planning has been deployed since three years as a measure to improve the organization's capability to meet long term and short term goals and to enhance cost competitiveness, operational efficiency, quality consistency and customer satisfaction.

d. **De-bottlenecking :** Continuous Improvement Studies are being undertaken to identify operations which were causing bottleneck in utilizing additional capacities existing in different stages of the process.

e. **Capacity Additions** : In order to maintain the No.1 Position in the region, the Rajashree Cement enhanced its capacities through Technology Upgradation in the existing 3 lines to increase the overall production from 9,000 TPD to 12,000 TPD.

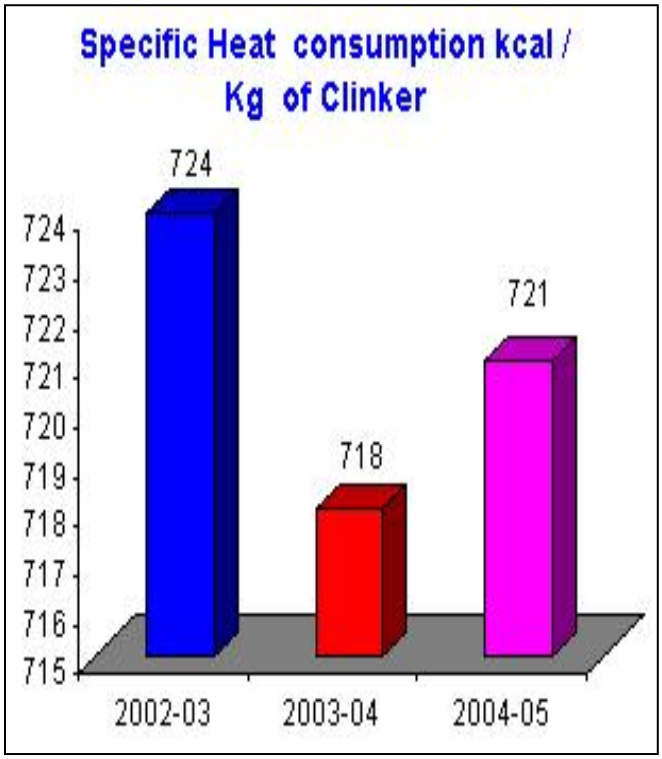
f. **Manpower rationalisation :** In order to keep Man Power costs down and to benchmark with best in class industry, Man Power rationalization is undertaken through job evaluation / Man power studies, de-layering / VRS.

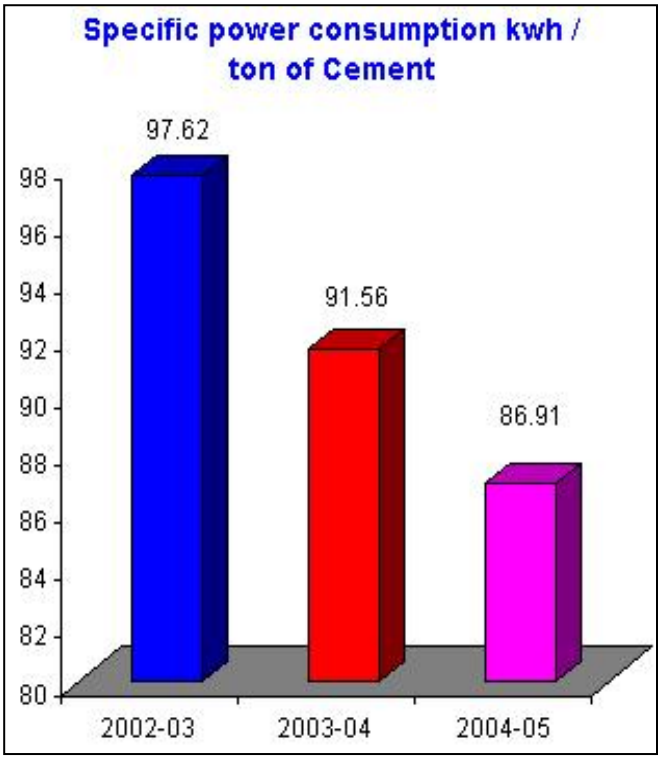
ii) Energy Consumption

Include information on total energy consumption (i.e. coal, oil, gas, electricity and money value). Information on energy consumption in terms of percentage of manufacturing cost should also be presented. Also, it should highlight the specific energy consumption for the period 2002-2003, 2003-2004 & 2004-2005 Good Computer Graphic Presentation related to Specific Energy Consumption may also be incorporated.

With the implementation of various energy conservation measures as on going practice specific energy conservation figures as below

Year	Specific power consumption (kwh / ton of cement)	Specific heat consumption (Kcal / Kg of Clinker)
2002-03	97.62	724
2003-04	91.56	718
2004-05	86.91	721





Specific Thermal energy consumption figure are higher in 20.04.2005 due to use of normal coal of high ash

iii) Energy Conservation Commitment, Policy and Organizational Set up

(Please include a photocopy of unit's Energy Conservation Policy, if decided)

Rajashree cement is having a comman management policy signed by unit Head

We are committed to manufacture and supply clinker and cement of consistent quality to our customers for their total satisfaction by implementation of management system of quality environment energy occupational health and safety and ethical consideration in all our manufacturing process.

Plant is having energy monitoring system daily power consumption are discussed in the meeting along with unit head and JEP(T) separate task force formed for identification of area for improvement and implementation of energy conservation schemes.

iv) Energy Conservation Achievements

Include one paragraph write-up on each major energy conservation project implemented during the year 2004-2005 only.

<u>Major Energy Conservation Projects during the year 2004-05</u>

1. Grid Synchronization:

Synchronization system has been installed at our unit as we were operating GRID and captive power plant separately and due to this captive power plant is not fully loaded. By this loading of captive power plant improved much reduce over all cost of power. In addition to this, it also reduced the plant stoppage on account of power change over and improves life of equipment. The details are given below :

Total cost	:	Rs. 220 Lakhs
Increase loading of CPP/day	:	0.33 MW
Cost difference between GRID & CPP	:	Rs. 2.00
Total power loading	:	3300 x 345 = 1725000 kwh
Total amount saving	:	Rs. 220 Lakhs
Payback	:	1 Year

2. Close circuit of Unit-I Cement Mill :

Unit-I cement mill has been converted to close circuit mill. In open circuit mill for grinding PPC (Pozzolona port land cement) it required more retention time and for PPC we have to maintain fineness blain +4000 and resulting more power consumption. By installing close circuit system productivity improved and reduced power consumption. The details are as under :

Earlier power consumption for grinding PPC	:	31.60 Kwh/T
Present power consumption	:	29.17 Kwh/T
Saving in power	:	2.17 Kwh/T
PPC Production in U-I Cement Mill	:	1.89 Lacs
Power saved per year	:	1.89 x 2.17 4.1 Lac units
Amount saved @ Rs.2.25/ Kwh	:	Rs. 9.2 Lacs
Investment	:	Rs.425 Lacs

3. Impeller tipping / Inlet modification of process fans of U-III :

Impeller tipping of Unit-III coal mill and CV fan and inlet modification of cooler fans has been carried out due to fans running at high pressure.

Power saving by modification (Process fans)	:	160 Kw
Savings @ Rs. 2.50 per Kwh	:	Rs. 33 Lacs

4. Replacement of shell cooling fans' impeller with FRP Blade :

Impeller for shell cooling fans of Unit-III replaced by FRP Blades.

Power saving achieved	:	4 Kw
Savings @ Rs. 2.50 4 x 24 x 345 x 2.5	:	Rs. 0.82 Lacs

Investment : Rs. 0.80 Lacs
Payback : 1 Year

5. Installation of variable frequency drives in U-III :
The variable frequency drives have been installed in U-III cement mill, ESP fan, coal mill booster fan and compressor.

Power saving achieved in 3 systems : 32 Kw
Amount saving @ Rs. 2.50 : Rs. 6.62 lacs
32x24x345x2.5
Investment : Rs. 25.96 lacs
Payback : 47 months

6. Installation of expert system in U-III :
Expert system has been installed in the unit-III Raw Mill. For optimisation of plant operation in controlled system, subsequent saving of 0.17 kwh/t of raw mill achieved. Installation of expert system for 3 kilns, 3 cement mills and 2 raw mills is under progress.

Saving achieved in only Raw Mill-III : 8.13 Lacs
Actual saving on investment will be established after installation of all systems.

7. Retrofitting of high efficiency impeller in U-I CV Fan :
High efficiency impeller in CV fan U-I has been installed.

Earlier power consumption : 205 Kw
Present power consumption : 165 Kw
Power saving : 40 Kw
Amount saving @ Rs. 2.25/Kwh : 8.28 Lacs
40x24x345x2.5
Investment : Rs. 15.00 Lacs
Payback : 2 Years

Other projects implemented during 2004-05 :

- Shell cooling fans interlocked with temperature
- Various bearing cooling fans interlocked with temperature
- Temperature sensor provided in return water line of cooling towers interlocking with fan start / stop
- Replacement of conventional light fitting with energy efficient lighting in phase manner.

V) Energy conservation plans :

- Replacement of under loaded motors with lower rating motors
- Replacement of chain bucket elevator with belt bucket elevator in raw mill.
- Removal of damper in preheater fan with slide gate.
- Installation of water spray system in cooler unit-II & III expected saving 61 Kwh
- Transportation cooler esp dust in cement mill 62.5 Kwh