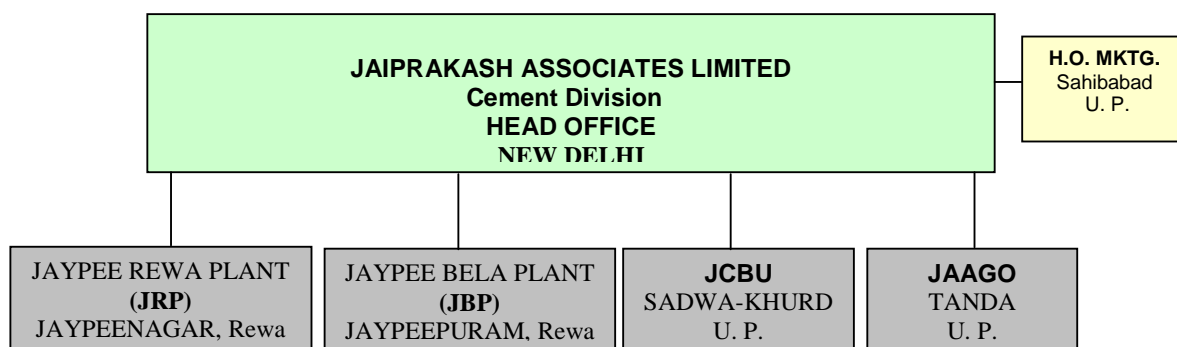


## ORGANIZATIONAL OVERVIEW :

Jaiprakash Associates Ltd. (JAL) is the flagship company of the Jaypee Group, one of the largest business conglomerates of North India with annual revenue of over Rs. 3578 Crores. Starting with a humble beginning in 1979 with construction activities, getting into cement manufacturing was only a logical and natural diversification for the Group in the year 1986. Today with the work force of more than 50,000 committed professional manpower and presence in almost all States of North India and countries like Nepal, Bhutan, etc., the Jaypee Group has diversified interests with the motto of building the nation in activities such as Civil Engineering Construction, Hydro Power Projects, Cement manufacturing, Hospitality & Tourism, Information Technology and Education, etc. **JAL has 2 Divisions: (i) Construction, and (ii) Cement.** JAL-Cement Division (*Jaypee Cement*) today is the market leader in central zone of India; and, on all India basis, it is one of the largest player having around 5% share of the total Cement Market of the country. Such coveted position has been achieved through utmost commitment to quality and excellence in all facets of our business management. JAL-Cement Division has been certified for the internationally acclaimed ISO 9001: 2000 Certificate, which further shows its commitment towards achieving total customer satisfaction and overall excellence. As of now, the JAL-Cement Division has 4 plants in operation, strategically situated near to either source of lime, or, source of fly ash – a significant factor determining health and logistics of the organization. Its organizational overview is presented in [Exhibit: O-1](#).

**Exhibit: O.1** Organizational Overview of JAL-Cement



## PRODUCTION FACILITIES :

JRP is located at 14 km from Rewa city of Madhya Pradesh at Jaypee Nagar; and JBP is situated at Jaypee Puram within vicinity of 5 km. The first line of production having capacity of 1 MTA, Jaypee Rewa Plant was commissioned on 02.12.1986 and 2<sup>nd</sup> line of production having a capacity of 1.5 MTA was commissioned on 10.01.1992 at JRP. The Jaypee Bela Plant, the 2<sup>nd</sup> unit of JAL-Cement Division, which is having a production capacity of 1.5 MTA was commissioned on 21.10.1996. The 1<sup>st</sup> line of production i.e. Unit-I has been upgraded for better energy efficiency and enhanced production of 4500 TPD clinker, and was started on 05.09.2004 after upgradation. For better economy and to encash market opportunities, Jaypee Cement Grinding unit (JCGU) of 0.6 MTA capacity was commissioned in December, 2002 at the Vill: Sadwa-Khurd, Dist. Allahabad, (UP). This is situated on Allahabd – Rewa road at a distance of 28 KM from Allahabad. The latest addition in cement manufacturing capacity came through Jaypee Ayodhya Grinding Operation (JAAGO) having 1.0 MTA capacity. With a view to use locally procured Fly Ash from NTPC-Tanda so as to save on logistics cost and support environmental causes, this plant was commissioned in August, 2004 at Tanda in U.P. As a result of commitment of management, team support and expertise in project management, all these projects were executed and commissioned in record time.

Power is one major input, and its uninterrupted availability at economical cost is a critical success factor for a cement manufacturing plant. Strategically, thus, we have set up our own captive power plants (CPP) to support our cement production process. The 1<sup>st</sup> CPP - 25 MW Thermal Plant was commissioned at JRP in November, 2003. Another, 25 MW Thermal Plant (CPP-II) was commissioned at JBP in November, 2004. One more 38.5 MW Thermal Power Plant (CPP-III) was commissioned at JRP complex in August, 2006. With the addition of three thermal power plants, the energy cost per tonne of cement has reduced considerably. Another major input for cement manufacturing and success in the market place is availability of good quality lime in high volumes. We have total mining lease of 14.67 Sq. KM. with the three captive limestone mines in the name and style of Naubasta limestone mine, Jaypee limestone mine and Bankuiyan limestone mine situated at a distance of 4 to 5 km. apart from each other. The Naubasta limestone mines cater to requirements of two plants at Jaypee Rewa Plant where as the Jaypee limestone mine mainly cater to Jaypee Bela Plant. The mining operations are carried at JAL-Cement Division using advanced technology and with utmost care to the environment.

Exhibit: O-2 Energy Conservation & Pollution Control	
Energy Conservation Measures	Pollution Control measures
<ul style="list-style-type: none"> <li>• Single stage rotary impactor for limestone crushing.</li> <li>• Vertical roller mills for raw meal and coal grinding</li> <li>• 6 Stage preheater rotary kiln with precalciner, in the first unit at JRP</li> <li>• 5 Stage preheater rotary kiln with precalciner, in the second unit at JRP</li> <li>• 6 Stage preheater rotary kiln with Precalciner in JBP.</li> </ul>	<ul style="list-style-type: none"> <li>• High efficiency electrostatic precipitators in both the lines for major equipment like vertical roller mills for raw meal grinding &amp; Bag House for cement mills at JRP and at JBP; Bag House for vertical roller mill for raw meal grinding &amp; ESP for cement mills.</li> <li>• Electrostatic Precipitator for cooler dedusting.</li> <li>• Bag filters and ESP for the coal mill in both the units</li> <li>• Electronic Rotary packers for packing cement in bags.</li> <li>• Reverse air jet cleaning type bag filters for auxiliaries.</li> <li>• Unit type bag filters at transfer points of belt conveyors</li> </ul>

Our cement manufacturing process is fully automated. Field Instruments installed at different locations are to provide data to control room operator through DCS for the purpose of monitoring of the process. Each of the equipments, right from limestone crushing to cement grinding is operated from Central Control Room (CCR). The operating parameters of each equipment are defined in the computer and the operators at CCR run the plant based on these parameters for optimal production. The status of the health of the equipments is also monitored by CCR. In addition to the operation of the plant, the CCR helps in carrying out various tests pertaining to process parameters, analyzing the power consumption, gas flow analysis and leakages for the purpose of optimal production at low cost. The units at JRP and JBP are most modern plants in the country with IT-enabled systems like Computer Aided Deposit Evaluation, State-of-the-art computer based Online Analyzers, Computerized process control systems, Computer aided maintenance management system, etc. Selection of machinery from the manufacturers of world repute, association of the best consultants, and extent of sophistication and modernity incorporated in the plants, reflect the concern of the management towards customer requirements. As far as quality is concerned, while everything possible is being done to ensure adherence to relevant standards in the overall interest of the ultimate consumers of cement, the Company has also focused its attention in the areas of energy conservation and pollution control. Adequate and advanced measures have been adopted by choosing energy efficient and less polluting equipments and appropriate equipments and machineries – as mentioned in [Exhibit: O-2](#).

## PRODUCTS, MARKETS AND CUSTOMERS

Exhibit: O-3 Product Range (Cement)	
Type - Grade	Brand Name
<ul style="list-style-type: none"> <li>• OPC-53</li> <li>• OPC-43</li> <li>• OPC-33</li> <li>• OPC - IRS T-40/53S</li> <li>• PPC – BUNIYAD</li> <li>• PPC – BULAND</li> <li>• PPC</li> </ul>	<ul style="list-style-type: none"> <li>• SUPER PLUS</li> <li>• TIGER</li> <li>• BUNIYAD</li> <li>• BULAND</li> </ul>

Our main product is cement. Clinker is the intermediate product, which after further value addition is converted into cement. Cement is produced of different grades as per customer needs and consumption pattern in the market ([Exhibit: O-3](#)). To create differentiation in consumers / customers mind, and to position uniquely in the market, we have consistently built brands of repute. This has immensely helped us in creating premium image in the market place. Our customers are both Institutional (*builders, PSUs, Government Offices, Projects in private / public sectors, etc.*) and Individual Consumers (*majority of revenue*

*comes from this segment*). Due to less realization, volume of clinker sold is less, and it is supplied mainly to Institutional Customers (cement manufacturing units). Cement is sold to Institutional Customers directly either from dumps or from plants. To End Users (*individual consumers*), cement is sold through channel partners (*Sales Promoters, Stockists, Dealers*). Masons are critical element in our marketing mix, because they are one of the major **influencers** in decision-making process of consumers. Hence, apart from educating (*product training, policy awareness, etc.*) and building relationship with our channel partners, we focus our such marketing initiatives on masons as well. Another important dimension in cement marketing is the concept of “Natural Marketing Zone” (NMZ). Since cement is a bulk item, its transportation / freight cost is a major component of total cost, hence having a major impact on market price. To remain competitive on price front, it is more prudent to choose “markets that are near to supply centers” (*that explains our new set ups at Tanda and Sadwa-Khurd*). Such markets are called NMZ. Our NMZ is depicted in [Exhibit: O-4](#).



Marketing department covers the placement of product in the market, providing advertisement & promotion support to create customer pull and effecting the realization of the sales proceeds. Planning, budgeting, advertising & allocation process is centralized at the Head Office; the implementation of these and Sales management is the responsibility of the Regional Marketing Offices (RMOs). RMOs control the overall sales and allied advertising activities and is also responsible for development of sales network. Customer relationship management is a critical success factor in cement business which is highly competitive. People from top to bottom have been trained and sensitized to forge better relationships with customers. We regularly conduct Customer Perception & Satisfaction Measurement surveys to align ourselves with the needs and expectations of our customers and the market realities (competition, trade dynamics, etc.).

## LEADERSHIP & PEOPLE

The top leadership is represented by Executive Chairman, DIC, COO, supported by many other Directors and Head of Groups (HOGs), working under overall guidance of our Group Chairman. We have implemented systematic approaches towards responsibilities, delegation and empowerment. We have a competent team of professionals, graduates and skilled / semi-skilled workers, acquired, developed and retained in a systematic manner. We also have contract workers working with us who are equally cared for by us. The **Exhibit: O-5** gives details of the manpower strength of our organization. We regularly conduct Employee Satisfaction Measurement surveys to align our policies, strategies and HRM approaches with the needs and expectations of our employees. The team work and dedication of our competent employees, empowering vision, energizing work environment and dynamic leadership have been maintaining the momentum set two decades ago, and we are determined to reach further milestones in future.

Exhibit: O-5 Manpower at various plants / offices of JAL-Cement Division								
S.N.	Plant / Area	Plant			Non-Plant			Grand Total
		JAL	Out Sourced	Total	JAL	Out Sourced	Total	
1	JAYPEE REWA PLANT	672	1080	1752	448	1130	1578	3330
2	JAYPEE BELA PLANT	256	819	1075	97	630	727	1802
4	CPP-I	65	34	99	0	0	0	99
5	CPP-II	57	47	104	0	0	0	104
6	CPP-III	12	13	25	0	0	0	25
6	JCBU	18	70	88	13	146	159	247
7	JAAGO, TANDA	38	190	228	16	185	201	429
<b>TOTAL</b>		<b>1118</b>	<b>2253</b>	<b>3371</b>	<b>574</b>	<b>2091</b>	<b>2665</b>	<b>6036</b>

## SERVING COMMUNITY / SOCIETY

We are a socially responsible corporate, and are sensitized about our social responsibilities. The company has set up a philanthropic trust "**Jaiprakash Sewa Sansthan (JSS)**" for social upliftment of poorest of the poor through the Comprehensive Rural Development Plan (CRDP). Total 18 neighboring villages have been adopted for bringing about socio-economic development in the lives of the residents by designing and implementing a well planned CRDP programmes / initiatives, e.g., education, health care, animal care, drinking water and roads, community infrastructures, etc.

**(i) Unit Profile :**

**JAYPEE BELA PLANT(JBP)** is located in the Huzur tehsil of Rewa district of Madhya Pradesh. It is situated at a distance of about 5 Km by road from JRP plant in South direction, 7 Km from NH7 and 12.0 Km in East direction from Rewa town. JBP was commissioned in October 1996 with production capacity of 1.5 MTA. JBP is spread in an area of 580.63 Hectares. Out of this 49.93 Hectares is Required for plant where as about 15.0 Hectares is allotted for Township development and workers camp. Other than this an area of 519.82 Hectares is also available with JBP in form of JP Bela Mines. JBP has set up its own Captive Power Plant (CPP) of capacity 25 MW to support cement production process. The power plant was commissioned in November 2004, due to which the thermal energy cost per tonne of cement has been reduced considerably.

Dry process SLC calciner with 6 stage pre-heater having low-pressure cyclones connected with COOLAX Cooler Modified with CIS / MFR / CFG in Cooler 1<sup>st</sup> Grate has been opted as the manufacturing process for cement at JBP. This process comprises following steps: -

1. Crushing, Grinding and Blending of Limestone, Clay and Laterite in definite proportions.
2. Burning the mixture at High temperature in kiln resulting in Clinker formation.
3. Cooling the Clinker and grinding it with Gypsum and Pozzolana to produce the finished product – Ordinary Portland Cement (OPC) and Portland Pozzolana Cement (PPC).

The plant is equipped with latest technology and most modern equipments, which gives the best quality product and serves the consumer requirement. Conserves the natural resources of Electrical and Thermal energies and maintains clean environment for inhabitants and surroundings. The products ranges are OPC-53, OPC-43, OPC-33, PPC – BULAND and PPC – BUNIYAD cement. Branded names are Tiger, Buland & Buniyad. Quality product being On top most priority, stringent quality control is being maintained from limestone mining to Cement dispatch with latest technology and automation systems which are given below :-

- **CADE** : Computer Aided Deposit Evaluation is a modern tool for assessment of Limestone deposit and planning.
- **QSO** : Quarry Scheduling Optimization is latest tool which helps in day-to-day mining operation and helps to achieve the optimal use / life of deposit.
- **GAMMA METRICS, CB-GN, MODEL :1200 L** : Cross Belt analyzer is an online analyzer which perform analysis of crushed limestone coming out of Limestone Crusher to stockpile.
- **XRF , MODEL- PW 1510** : X-Ray fluorescence spectrometer to ensure consistent and efficient quality control at all production stages.
- **XRD, MODEL PW-1840** : X-Ray Diffractometer to analyse free lime and various mineralogical phases in Clinker. Based on its data various suitable actions are taken to improve the Clinker quality.
- **CLOSED CIRCUIT TV FOR KILN & COOLER** : This helps in continuous monitoring, leading to better control in clinkerization.
- **AUTOMATION SYSTEMS** : Fully computerized process control is state-of-art technology from M/S Asea Brown Boveri Limited (MODEL-ADVANT 500). All controls are being done from centralized control room using this system.

**(ii) Energy Consumption :**

Specific Power Consumption Details	Units	2004-05	2005-06	2006-07
Annual Cement Production	LTPA	20.46	21.53	24.14
Total electrical energy consumption per annum	Lakh KWH	1713.57	1917.55	2178.88
Total thermal energy consumption	Million Kcal	1154622	1221699	1410159
Total manufacturing cost in Rs. Lakh	Rs. Lakh	23739.85	26436.24	30180.95
Total energy cost in Rs. Lakh	Rs. Lakh	12823.27	12410.02	15070.58
Energy cost as % of manufacturing cost	%	54.02	46.94	49.93
Specific Power Consumption	KWH/MT Cem	92.8	91.7	87.7

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 2004-2005, 2005-2006 & 2006-2007 Good Computer Graphic Presentation related to Specific Energy Consumption may also be incorporated.

**(iii) Energy Conservation Commitment, Policy and Organizational Set up**

(Please include a photo copy of unit's Energy Conservation Policy, if decided : **NO**)

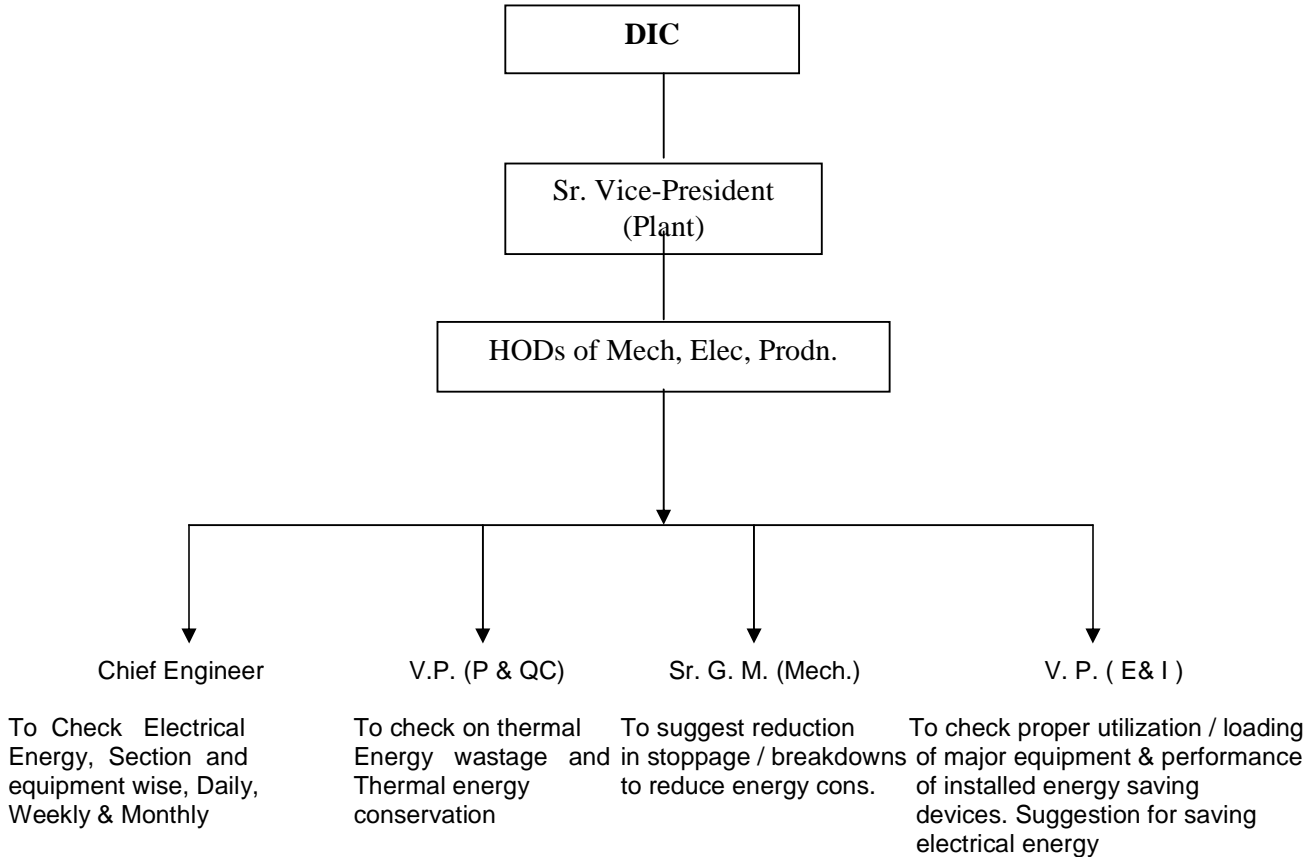
**Energy conservation Cell Activities :**

- (A)** Electrical energy for each unit and also each section/equipment is calculated on daily basis. This report also gives MTD power consumption for each section.
- (B)** We also generate monthly report highlighting the average consumption , deviation from the target , areas of potential saving.
- (C)** Monthly electrical report is also generated and compared with previous and best month . This indicate the areas where increase has taken place so as to monitor the particular section minutely.
- (D)** Monthly maintenance meeting is held to identify reasons for plant stoppages and means of eliminate them to improve plant availability. This helps in reduction of non-productive machine hours.

### Energy Conservation Cell

A separate energy conservation cell is headed by the president(Tech) and has all HODs as member

This cell meets every month to consider plant performance and energy consumption for the previous months. The strategy and decisions and accordingly taken to check on energy waste and increase production.



#### (iv) Energy Conservation Achievements

Include one paragraph write-up on each major energy conservation project implemented during the year 2006-2007 only.

### ENERGY CONSERVATION ACHIEVEMENTS DURING THE YEAR 2006 – 07 AT JAYPEE BELA PLANT

#### 1. Reduction of pressure setting in cement mill and packing plant compressor.

<b><u>Before modification:</u></b>	
<b>Sp. Cons.</b>	<b>: 0.98 kWh / MT-cement</b>
<b><u>After modification:</u></b>	
<b>Sp. Cons</b>	<b>: 0.96 kWh/MT-cement</b>
<b><u>Savings:</u></b>	
<b>Sp. Power cons</b>	<b>: 0.02 kWh/MT-cement</b>
<b>Power cons / annum</b>	<b>: 0.40 lacs kWh</b>
<b>Amount / annum</b>	<b>: 1.34 lacs Rs.</b>

## 2. Reduction in pressure setting of cement silo aeration blower in packing plant.

<b><u>Before modification:</u></b>	
Sp. Cons.	: 0.17kWh / MT-cement
<b><u>After modification:</u></b>	
Sp. Cons	: 0.12 kWh/MT-cement
<b><u>Savings:</u></b>	
Sp. Power cons	: 0.045 kWh/MT-cement
Power cons / annum	: 1.10 lacs kWh
Amount / annum	: 3.69 lacs Rs.

## 3. Optimization of operating voltage in identified areas.

<b><u>Before modification:</u></b>	
Sp. Cons.	: 0.43 kWh / MT-cement
<b><u>After modification:</u></b>	
Sp. Cons	: 0.32 kWh/MT-cement
<b><u>Savings:</u></b>	
Sp. Power cons	: 0.105 kWh/MT-cement
Power cons / annum	: 2.56 lacs kWh
Amount / annum	: 8.38 lacs Rs.

## 4. Optimization of loading of transformers.

<b><u>Before modification:</u></b>	
Sp. Cons.	: 0.13 kWh / MT-cement
<b><u>After modification:</u></b>	
Sp. Cons	: 0.04 kWh/MT-cement
<b><u>Savings:</u></b>	
Sp. Power cons	: 0.08 kWh/MT-cement
Power cons / annum	: 2.12 lacs kWh
Amount / annum	: 7.10 lacs Rs.

## 5. Optimization of operation of bag house fan

<b><u>Before modification:</u></b>	
Sp. Cons.	: 4.14 kWh / MT-cement
<b><u>After modification:</u></b>	
Sp. Cons	: 4.02 kWh/MT-cement
<b><u>Savings:</u></b>	
Sp. Power cons	: 0.12 kWh/MT-cement
Power cons / annum	: 3 lacs kWh
Amount / annum	: 10.05 lacs Rs.

6. Installation of correct size pump for filter feed pump



<b><u>Before modification:</u></b>	
Sp. Cons.	: 0.086 kWh / MT-cement
<b><u>After modification:</u></b>	
Sp. Cons	: 0.064 kWh/MT-cement
<b><u>Savings:</u></b>	
Sp. Power cons	: 0.022 kWh/MT-cement
Power cons / annum	: 0.64 lacs kWh
Amount / annum	: 2.14 lacs Rs.

7. Reduction in impeller size of over head pump



<b><u>Before modification:</u></b>	
Sp. Cons.	: 0.103 kWh / MT-cement
<b><u>After modification:</u></b>	
Sp. Cons	: 0.096 kWh/MT-cement
<b><u>Savings:</u></b>	
Sp. Power cons	: 0.0075 kWh/MT-cement
Power cons / annum	: 0.23 lacs kWh
Amount / annum	: 0.77 lacs Rs.

8. Reduction in impeller size for plant cooling water pump



<b><u>Before modification:</u></b>	
Sp. Cons.	: 0.249 kWh / MT-cement
<b><u>After modification:</u></b>	
Sp. Cons	: 0.226 kWh/MT-cement
<b><u>Savings:</u></b>	
Sp. Power cons	: 0.022 kWh/MT-cement
Power cons / annum	: 0.55 lacs kWh
Amount / annum	: 1.84 lacs Rs.

9. Reduction in capacity of kiln bin aeration blower by speed reduction.



<b><u>Before modification:</u></b>	
Sp. Cons.	: 0.086 kWh / MT-cement
<b><u>After modification:</u></b>	
Sp. Cons	: 0.071 kWh/MT-cement
<b><u>Savings:</u></b>	
Sp. Power cons	: 0.015 kWh/MT-cement
Power cons / annum	: 0.32 lacs kWh
Amount / annum	: 1.07 lacs Rs.

## 10. Avoid damper loss in identified bag filter fans.

<b><u>Before modification:</u></b>	
<b>Sp. Cons.</b>	<b>: 0.40 kWh / MT-cement</b>
<b><u>After modification:</u></b>	
<b>Sp. Cons</b>	<b>: 0.34 kWh/MT-cement</b>
<b><u>Savings:</u></b>	
<b>Sp. Power cons</b>	<b>: 0.06 kWh/MT-cement</b>
<b>Power cons / annum</b>	<b>: 1.55 lacs kWh</b>
<b>Amount / annum</b>	<b>: 5.19 lacs Rs.</b>

## (v) Energy Conservation Plans and Targets

Detailed Energy Audit has been conducted by CII and total of 39 projects have been identified in their draft report. The projects finally identified in their final report will be implemented after management approval.

	<b><u>Brief Details and Specifications</u></b>	<b><u>Investments Required (Rs Lacs)</u></b>	<b><u>Payback Peroid (Estimated months)</u></b>	<b><u>Expected Benefits (Rs lacs / Year)</u></b>
<b><u>Medium Term</u></b>	1. Reduction impeller size for plant cooling water pump.	0.20	2	1.64
	2. Install temperature indicator for CT fans.	0.10	2	1.17
	3. Avoid damper loss in identified bag filter fans.	0.20	1	5.19
	4. Replace HPMV lamps with metal halide lamps.	0.39	20	0.24
	5. Install VFD for raw mill spray pump.	0.60	17	0.42
<b><u>Long Term</u></b>	1. Install demand side controller for compressed air system	15.00	15	12.17
	2. Install correct size pump for cement mill and packing plant cooling water pump.	6.60	20	4.03
	3. Install SPRS for bag house fan instead of GRR.	30.00	10	36.00
	4. Install SPRS for PC fan instead of GRR.	60.00	20	36.00

## (vi) Environment and Safety :

**Environment :** The Jaypee group in general and the cement plant in particular is very concerned for clean and green environment , and its total sustainable development . The group is committed to eco-friendly processing of cement manufacturing from mining to placement of product at users end. The entire manufacturing process is carried out by latest technology with controlled emission meeting the stringent national norms through application of the latest and advanced air pollution control equipments.

**Safety :** Jaypee Bela plant has a separate safety department maintains stringent safety standards and ensures that safety measures are being followed strictly. All the provisions enumerated in the factory act and factory rules also complied with. Unit has a central control room which functions round the clock with junior management level officers as in charge who will intimate top management, co-ordinate and organize necessary help required from outside agencies as well as in-house in case of emergency. Jaypee Bela Plant has a well-equipped modern hospital with 04 beds managed by the doctors round the clock. An ambulance is also available for any emergency.

