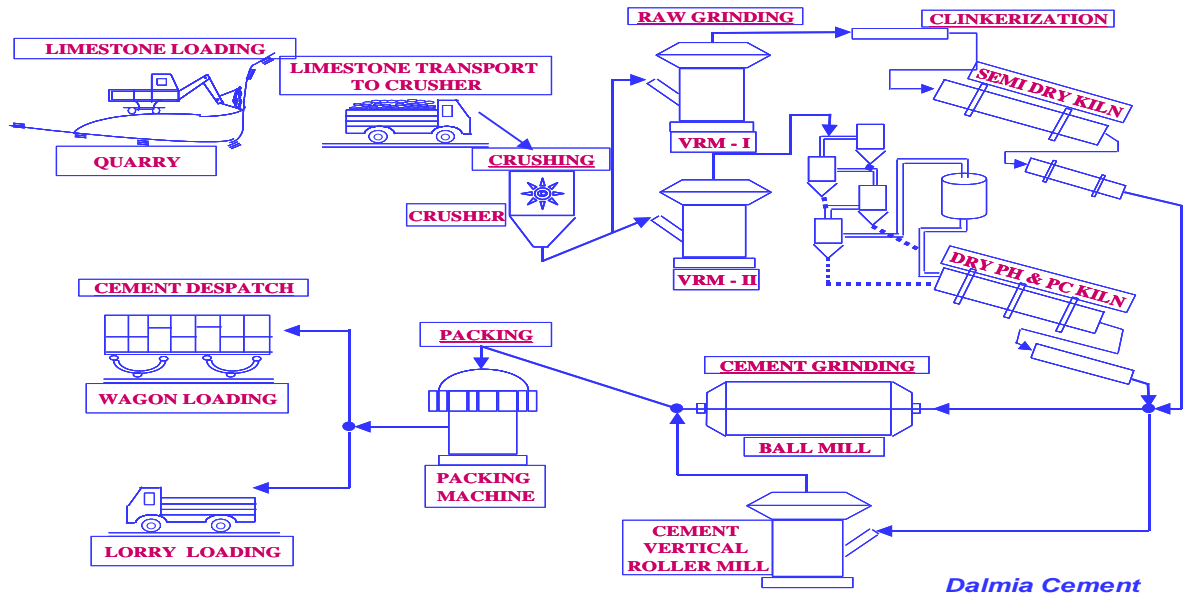


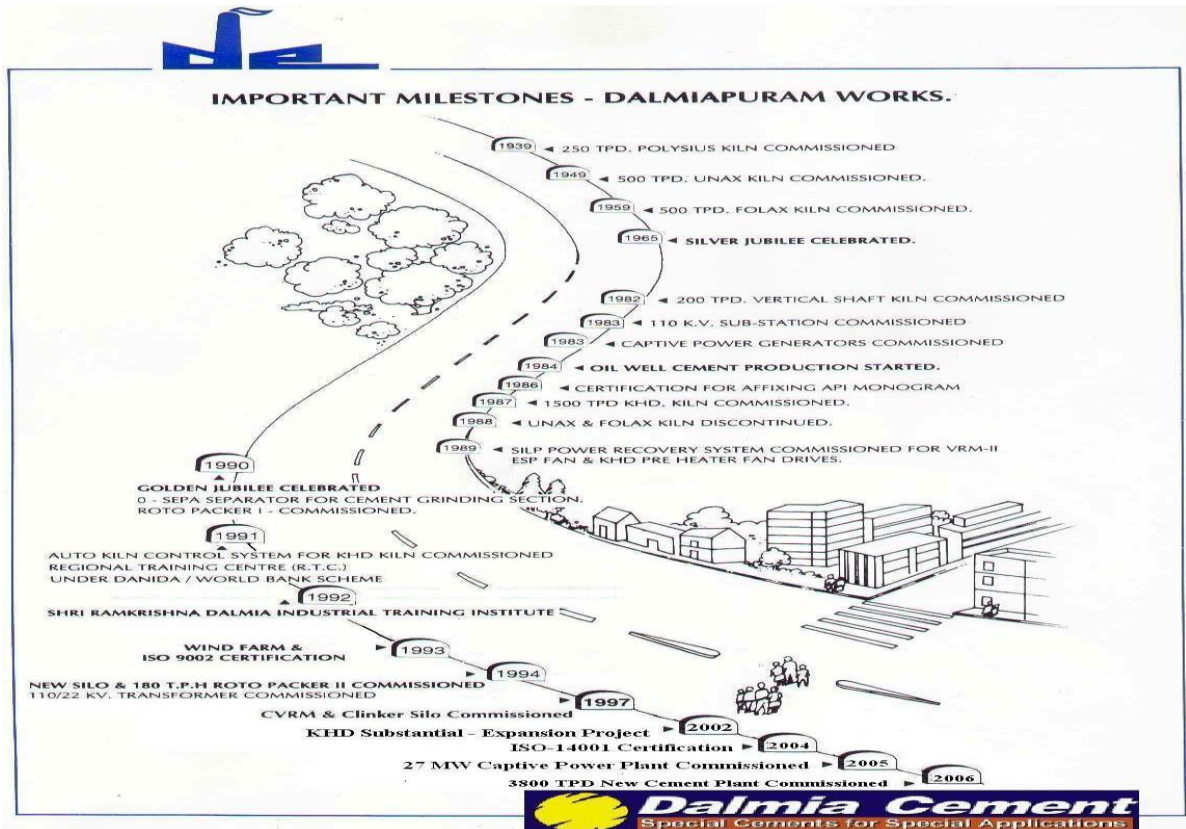
**i) UNIT PROFILE :**

It was in the year 1939, during the pre-independent era, the company started its cement unit as a venture towards Building up a self-reliant India with respect to one of the country's essential commodities. As far back as 1987, the old wet process technology has been replaced by modern precalcinator dry process technology and the first company to adopt this in Tamilnadu, mainly with a view to conserve energy. A major capacity expansion project is commissioned during the year 2006 to enhance the total cement capacity by putting up a most modern & energy efficient

**CEMENT PROCESS FLOW DIAGRAM**



3800 TPD Plant.



**ii) ENERGY CONSUMPTION :**

The consumption of both Electrical and Thermal energy will be in decreasing trend, which is achieved by means of various measures and commitment from employees.

### iii ) ENERGY CONSERVATION COMMITMENT, POLICY AND SET UP :

#### ENERGY POLICY

Excellence in Energy Efficiency  
Achieved by

- Identifying & Eliminating wastage of energy,
- Adopting Energy Efficient and Eco friendly Technologies,
- Using Alternate and Renewable Energy Sources,
- Energy Conscious Employees.

**P.ACHARYA**  
Executive Director (Cement Works)

An Energy monitoring cell has been formed to monitor the electrical energy consumption of individual energy centers of the plant and decide on actions for improvements.

The activities of the cell are,

i) Proper recording of various Energy related data.

ii) Analyzing the thus recorded data.

iii) Set right the deviation from norms/standard  
The energy monitoring cell meets around 1<sup>st</sup> week of every month and discuss the trend of the power consumption. Executive director chairs the meeting. Thus there is a top management commitment towards energy conservation.

### iv ) ENERGY CONSERVATION ACHIEVEMENT ( During the Year 2007-2008 ) :

#### Description on the Benefits achieved by the Modifications done in

##### Star Feeder feeding to Cement Vertical Roller Mill :

LM 56.3+3 Loesche mill is used for cement grinding in our Dalmiapuram unit, FLS plant. By design, to reduce the false air entry into the mill through the mill feed circuit the supplier has provided star feeder (RAV feeder), in place of conventional triple gate feeder as shown in the Photograph below.



**Star Feeder with HAG Pipe line connection**

The design clearance between the casing and the impeller of the star feeder is 2 mm. The drive rating is 11.5 KW. Casing of the star feeder is provided with an outer jacket, through which, the hot gases from mill

inlet pass through, providing heating to avoid coating formation. Gas will come from mill inlet and pass through the casing and then goes into the mill body along with material.

We are producing maximum of PPC cement with wet fly ash obtained from fly ash Ponds of MTPS (Mettur Thermal Power Station), Tamilnadu. Since the fly ash is aged i.e, got accumulated over the past years, it is contaminated with foreign material like roots of bamboo, grass etc and has moisture in the range of 20-30 %.

Because of the high moisture content & foreign material, the star feeder was tripping frequently as high as 97 frequencies in a month averaging more than stoppage of 1 hr per day. This has resulted in low availability, less production and higher specific power consumption.



#### Star feeder

Brain storming session was conducted and the following actions were implemented :

- ❖ Hooks were provided in the belt conveyors at three locations to catch hold of roots of plants etc.
- ❖ Reversible option was given at site / CCR to reduce the stoppages.
- ❖ Hot air line was connected from HAG outlet, which has the temperature of 360+ deg C+ as compared to mill inlet, which was having 200+ Deg C
- ❖ Star feeder casing gas flow outlet line was connected to mill outlet instead of mill body to get more gas flow through the casing. Above two suggestions has increase the casing body temperature from 40 deg C to 80 deg C
- ❖ Star feeder gap between impeller tip and casing was increased from 2 mm to 10 mm.

- ❖ Star feeder drive capacity has been increased from 11.5 KW to 18.5 KW
- ❖ Air blaster was provided at the periphery of the impeller to avoid build up of material.
- ❖ Cleaning of impeller pockets done during PM and available opportunities.

With the implementation of above ideas, we were able to avoid stoppages due to star feeder practically to nil, thus continuously running the mill for 24 hrs and achieving the production targets.

**Benefits achieved:**

The benefit due to the above modifications in production and hence extra cement of about 270 TPD cement with a realization of around Rs 13.7 Crores per annum.

**Description on the Benefits achieved by the Modifications done in  
Impeller tipping made in FLS preheater fan :**



FLS kiln commissioned in Feb 2006, is having an installed capacity of 3800 TPD with 5 stage preheater with Inline calciner. The preheater fan made by Reitz is designed for 612720 m<sup>3</sup>/hr @ 593 mmwg , 310 deg C.

The plant was operating at 4250 TPD with maximum speed of preheater fan before May 2007. In order to make use of the good market potential, DCBL Management decided to increase the clinker and hence cement production rate with whatever minor modifications possible.

Upon analyzing the preheater fan design characteristics we found that the clearance between the impeller tip to casing cut off is 11.5% against the standard minimum requirement of 8 % . Management decided to utilize this extra gap margin available by increasing the impeller dia from 2770 mm to 2898 mm by tipping 64 mm length plate at the end of the impeller blade as shown in the figure.

The modification was carried in the small shut down by the plant team in May 2007. After startup the we were able to increase the gas volume for the same speed and could achieve extra clinker production of 185 TPD.

This will give an opportunity to **produce extra cement of 278 TPD cement with a realization of Rs 14 Crores per annum.**

**Description on the Benefits achieved by the Modifications done in**  
**One Blower fan Stopped below dry fly ash silo for silo bin extraction**

Cement silo having eight extraction gates and there are six aeration lines are given for each gates. One or two gates are being opened for extraction at a time. One dedicated blower is available for aeration in each Cement Silo. Blower no. 61NBL4 & 61NBL1, capacity is 7.5 Kw/Hr and air volume is 660 m<sup>3</sup>/hr.

Air slide boxes are connected from each gate to bin (at silo bottom) to transfer cement. One dedicated Fan is available to supply air for these air slide boxes. Fan number 53NFN1&3, capacity is 7.5 kw/hr. and air volume is 1200 m<sup>3</sup> / hr. One stand by fan also available for this fan, number K2NFNH.

One dedicated blower is available for bin (at silo bottom) aeration. Blower number is K2NBL4, Capacity is 7.5 kw/hr and air volume is 1200 m<sup>3</sup>/hr.

Air slide boxes are connected from Bin (at silo bottom) to elevator to transfer cement. One dedicated Fan is available to supply air for these air slide boxes. Fan number 63NFN 5&7, Capacity is 7.5 KW/hr and air volume is 1200 m<sup>3</sup>/hr.

Arrangements are shown in below drawing.

One airline is connected from silo aeration / extraction blower (number 61NBL4 & 61NBL1) to air slide boxes, which are connected between silo extraction gates to silo bottom bin. It is implemented and working well.

As per the present arrangement both fans 63NFN5 & 63NFN3 are not required to operate for CEMENT extraction from the silo 15 & 17.

In the next one year, the company is committed to further reduce the electrical and thermal energy consumptions. Some of the major projects planned for the next year are given below.

SI No.	Energy Conservation Measures (Planned)	Anticipated savings in			Approx. investment (Rs.lakhs)	Project Commencement & Completion year
		Power Saved in Lakh units per annum	Tons of coal / oil saved	Expected annual savings (Rs.lakhs)		
1	CFD Analysis for FLS Plant Pre-heater down comer duct and VRM - I Raw mill inlet Duct	3.86	-	13.5	10.0	Drawings are received, Implementation will be done during annual shutdown Dec' 08
2	High Efficiency cyclones for Pre Coal cyclones in FLS Kiln	Achieve Extra Production		49.0	50.0	commencement Oct'07 completion Dec'08
3	Retrofitting Cooler vent fan impeller with high efficiency impeller in FLS Plant	7.08	-	24.8	65.3	Will be taken up during annual shutdown Nov' 08
4	To reduce Specific Heat consumption by maintaining the quality of kiln feed raw meal (Standard deviation of CaO) by Cross Belt Analyser in VRM-II	-	-	5.9	20.0	Will be implemented during Sep' 08
5	Separate LP Compressor for fly ash pumping in Dry Fly ash silo in FLS Plant	2.30	-	8.1	15.0	Will be implemented during Jun' 08
6	Modification of Sewage Treatment Plant to feed water to plant cooling tower (250m <sup>3</sup> / Day)	3.91	-	13.7	40.0	Commencement will be during 2008-09
7	Verabar for flow measurement - for CVRM 2	6.11	-	21.40	20.00	Will be taken up during annual shutdown Nov' 08

vi) **ENVIRONMENT AND SAFETY :**

Our organization has initiated no. of measures for Pollution Prevention, Waste Management, Conservation of Key resources and creation of environmental awareness among all concerned. With the above effort our company has obtained the **IS/ISO 14001 Certificate** in February 2004, from BIS



21. **Whether any dispute pertaining to statutory requirements of safety and pollution control is pending with any Government Agency. If Yes, give details:**  
**-- NO --**