



Energy Conservation Measure implemented in 2006-2007


ID to be filled by BEE	Stopping the oil firing in CVRM I HAG by modifying the burner nozzle, burner head	Sector
Year to be filled by BEE		Technology
<p>Description of the energy conservation measure:</p> <p>Hot air generator used for producing hot air to remove moisture in wet fly ash used in PPC cement grinding uses coal as main fuel and Diesel as start up fuel. Because of the problem in the venturi portion near the burner tip, we were forced use oil even during coal firing ,resulting in high operating cost and extra oil consumption. With the help of the supplier, we have increased the throat portion of the venturi and stabilized the flame. With this modification we are able to operate the HAG with out oil when coal is fired resulting in oil saving.</p> <p>Amount of oil saved (High Speed Diesel) : 1018 MT</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
		
	Coal feeding Burner nozzle	

Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Reducing the water over flow in CVRM II tank by trimming the pump impeller	Sector
Year to be filled by BEE		Technology
<p>Description of the energy conservation measure:</p> <p>Heat exchanger & cooling systems in CVRM II get cooling water from the Over head tank located at the 40th meter floor. The over flow of the tank is returned to the cooling tower sump.</p> <p>As there was extra margin in the pump capacity, we used to get continuous over flow of around 40 cubic meter per hour of water. Since the plant has got stabilized and we know the actual demand / consumption of cooling water, it is decided to reduce the excess capacity available in the pump by trimming the same. This has resulted in a saving of 11700 units per annum.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
		


Agency that executed the project (with complete address and email):					
Total investment, Rs.: 0.10 lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.:					
First year other savings, Rs.:					
Total Annual Energy savings (Rs. in Lakhs) : 0.50					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after					
Total Annual Electricity Savings	12				
Energy tariff, Rs/ kWh/ Ton/ Nm³/ kL ...	Rs. 3.50				
Company complete address: Dalmia Cement (Bharat) Limited Dalmiapuram – 621651 Dist : Trichirappalli Tamil Nadu				We authorise Bureau to use this information for dissemination Signature Date	

Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Reducing the water over flow in FLS Coal Mill tank by trimming the pump impeller	Sector
Year to be filled by BEE		Technology
<p>Description of the energy conservation measure:</p> <p>As there was extra margin in the pump capacity we used to get continuous over flow of around 60 cubic meter per hour of water. Since the plant has got stabilized and we know the actual demand / consumption of cooling water we have decided to reduce the excess capacity available in the coal mill tank also, controlled by trimming the coal mill tank pump impeller resulting in power saving of 58500 units per annum.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
		

Agency that executed the project (with complete address and email):					
Total investment, Rs.: 0.10 lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.:					
First year other savings, Rs.:					
Total Annual Energy savings (Rs. in Lakhs) : 2.30					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after					
Total Annual Electricity Savings	58				
Energy tariff, Rs/ kWh/ Ton/ Nm³/ kL ...	Rs. 3.50				
Company complete address: Dalmia Cement (Bharat) Limited Dalmiapuram – 621651 Dist : Trichirappalli Tamil Nadu				We authorise Bureau to use this information for dissemination Signature Date	

Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Utilisation of Waste water for Cement Mill Spray	Sector
Year to be filled by BEE		Technology
<p>Description of the energy conservation measure: In our plant, cement grinding is done in vertical roller mills which require a certain quantity of material i.e., material bed to be maintained in the mill table. To maintain this bed we spray water whenever OPC grinding is taking place in the mill. Water sprayed gets evaporated and goes as water vapor along with the mill gas. We were using Raw water for this purpose costing Rs 15 per kilolitre which we are getting from 10 KM distant river. Per day water consumption is about 250 cubic meters. We have an Effluent Treatment Plant available at the factory with RO technology which generates reject water containing more dissolved solids (TDS) higher than prescribed limits. We have started using this high TDS water for cement mill spray thus solving two issues – Firstly we need not consume raw water – raw water consumption goes down and it is preserved, Pumping of extra raw water from 10 KM is reduced. Secondly, we need not employ boiling or other costlier methods to handle to RO reject which contain the high concentration of solids (2000-3000 ppm). Since this concentration of salts become less than 1 % of the mill capacity (300 TPH) we don't face any quality problem in the product.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
		

Agency that executed the project (with complete address and email):					
Total investment, Rs.: 0.20 lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.:					
First year other savings, Rs.:					
Total Annual Energy savings (Rs. in Lakhs) : 1.20					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after					
Total Annual Electricity Savings	9				
Energy tariff, Rs/ kWh/ Ton/ Nm³/ kL ...	Rs. 3.50				
Company complete address: Dalmia Cement (Bharat) Limited Dalmiapuram – 621651 Dist : Trichirappalli Tamil Nadu				We authorise Bureau to use this information for dissemination Signature Date	

Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Reducing idle power of Cement Mill Fan during small stops in Mill	Sector
Year to be filled by BEE		Technology
<p>Description of the energy conservation measure:</p> <p>During long stoppages more than 30 minutes, the mill auxiliaries like fan and other belt conveyors and equipments will be stopped to avoid idle run /power. However, if the stoppage time is less, this interlock will not work. It is also not advisable to completely stop all the equipments for small intervals, since it involves time delay and frequent start / stop. However, we decided to reduce the speed of the fan as Variable speed drive facility is available so that the fan need not be stopped, whereas its speed has been reduced to bare minimum so that the idle power is reduced to the maximum extent possible.</p> <p>We have saved 31000 units per annum by doing this interlock modification.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
	NOT APPLICABLE	

Agency that executed the project (with complete address and email):					
Total investment, Rs.: Nil			Year of implementation: During 2006-07		
First year energy cost savings, Rs.:					
First year other savings, Rs.:					
Total Annual Energy savings (Rs. in Lakhs) : 1.30					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after					
Total Annual Electricity Savings	31				
Energy tariff, Rs/ kWh/ Ton/ Nm³/ kL ...	Rs. 3.50				
Company complete address: Dalmia Cement (Bharat) Limited Dalmiapuram – 621651 Dist : Trichirappalli Tamil Nadu				We authorise Bureau to use this information for dissemination Signature Date	

Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Reducing the heat requirement of CVRM II HAG by changing the cooler water spary temp setting	Sector
Year to be filled by BEE		Technology
<p>Description of the energy conservation measure:</p> <p>The hot air coming from cooler outlet is utilized in the CVRM II , for removing the moisture in the materials like Fly ash, Gypsum etc during cement grinding. As the heat supplied by this air alone is not sufficient to meet the requirement, we were firing coal in the Hot Air Generator additionally. We are spraying water in the cooler outlet to save ESP from very high temperature gas to protect the same against mechanical failure. Water gets evaporated reducing the gas temperature and heat content. The original setting for water spray was 260 deg C which we have raised to 300 deg. C. This has raised the gas temperature by 40 deg C, heat content. This extra heat has resulted in reduction in coal consumption in the HAG. As the ESP design temperature is 350 deg.C , it has no problem in handling the gas at 300 deg. C.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
	NOT APPLICABLE	

Agency that executed the project (with complete address and email):					
Total investment, Rs.: Nil			Year of implementation: During 2006-07		
First year energy cost savings, Rs.:					
First year other savings, Rs.:					
Total Annual Energy savings (Rs. in Lakhs) : 9.10					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after					
Total Annual Fuel Savings		1522			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...					
Company complete address: Dalmia Cement (Bharat) Limited Dalmiapuram – 621651 Dist : Trichirappalli Tamil Nadu				We authorise Bureau to use this information for dissemination Signature Date	

Energy Conservation Measure implemented in 2006-2007

To be filled by BEE	Removal of one air slide fan below dry fly ash silo by interconnecting existing blower line	Sector
Year to be filled by BEE		Technology

Description of the energy conservation measure:

Past arrangement:

Dry Fly Ash silo having eight extraction gates. There are eight 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. Blower number K2NBL3, Capacity is 7.5 KW/Hr and air volume is 660 m3/Hr.

Air slide boxes are connected from each gate to Bin (at silo bottom) to transfer Dry fly ash. One dedicated Fan is available to supply air for these air slide boxes. Fan number K2NFN8, Capacity is 7.5 KW /Hr and air volume is 1200 m3/Hr. one standby 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 225 m3 / Hr

Air slide boxes are connected From Bin (at silo bottom) to Elevator to transfer Dry fly ash. One dedicated Fan is available to supply air for these air slide boxes. Fan number K2NFNA, Capacity is 7.5 KW /Hr and air volume is 1200 m3/Hr.

Arrangement is shown in the enclosed drawing

Present system

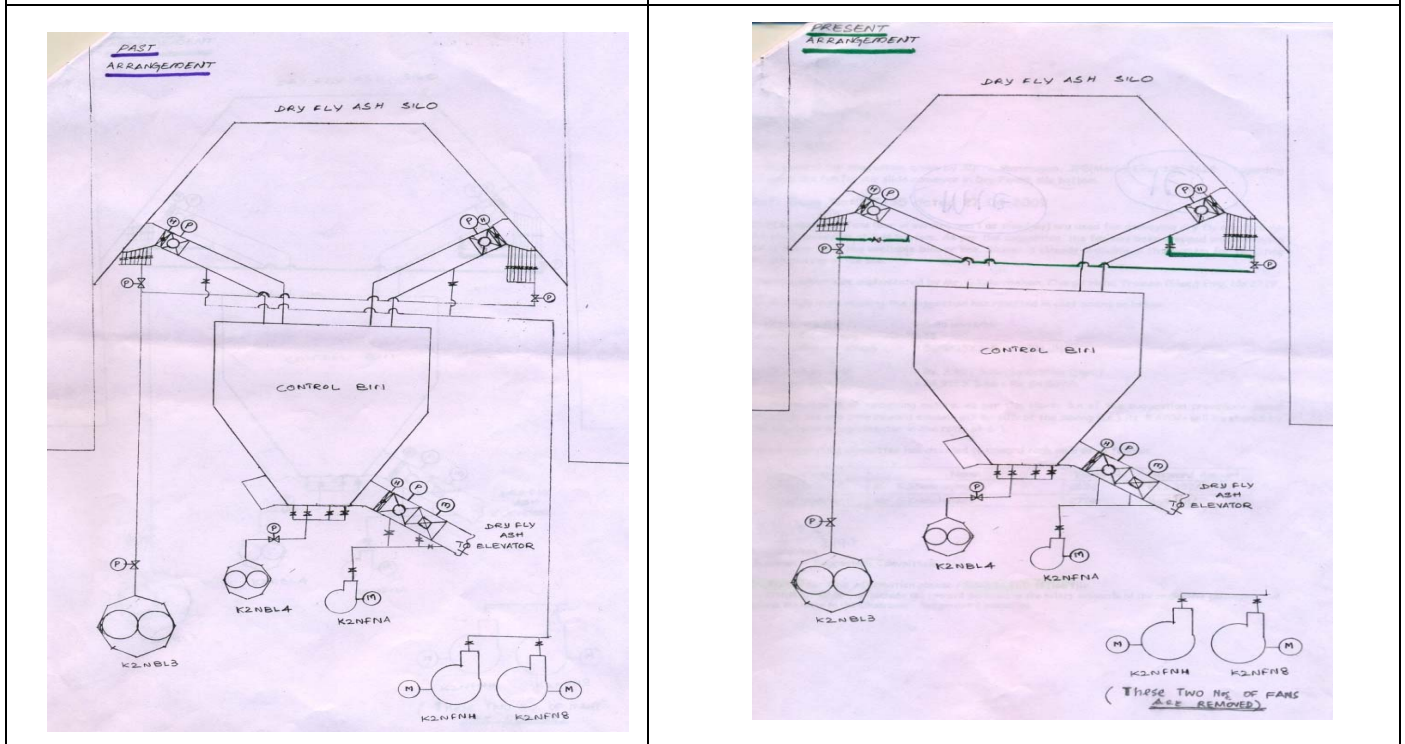
One airline is connected from silo aeration/extraction blower (number K2NBL3) to air slide boxes, which are connected between silo extraction gates to silo bottom bin. It is implemented on 20.4.2007. Past three days it is working well, more than 500 tones are extracted from the silo.

As per this suggestion both fans (K2NFN8 & K2NFNH, one for operation and another for standby) are not required to operate for dry fly ash extraction from the silo.

We have **saved 24911 units per annum** by doing this modification.

Picture/ sketch/ drawing before modification
(if available)



Picture/ sketch/ drawing after modification



Agency that executed the project (with complete address and email):					
Total investment, Rs.: 0.10 Lakhs			Year of implementation: 2007		
First year energy cost savings, Rs:					
First year other savings, Rs:					
Total Annual Energy savings (Rs. in Lakhs): 0.90					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after					
Total Annual Electricity Savings	25				
Energy tariff, Rs/ kWh/ Ton/ Nm³/ kL ...	Rs. 3.50				
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Energy Conservation Measure implemented in 2006-2007

(To be filled up separately for each Energy Conservation Measure)

ID to be filled by BEE	Stop the Cummins cooling tower fan and connect the A/C Compressor water line in to the near by KHD Cooling Tower	Sector
Year to be filled by BEE		Technology
<p>Description of the energy conservation measure:</p> <p>In our KHD CCR, 2 cooling towers are in operation and one is for cooling the water from Air Conditioning plant and Cummins Generator and the other is cooling the water from KHD Kiln supporting rollers, Coal mill area, VRM2 3KS, etc,. As per the suggestion, the water line to Cummins generator and Air condition plant was connected with KHD cooling tower itself, since capacity was available. With this arrangement, the fan for the Cummins cooling tower has been stopped. Now one cooling tower (KHD cooling tower) is in operation. It handles water from both A/C Plant as well as from the KHD plant.</p> <p>However, the Cummins cooling tower is kept in operating condition for usage as standby. This will be utilized during KHD stoppage period.</p> <p>We have saved 38,544 units per annum by doing this modification.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
		
Old Cooling Tower	Cooling tower in operation	

Agency that executed the project (with complete address and email):					
Total investment, Rs.: 0.10 Lakhs			Year of implementation: 2007		
First year energy cost savings, Rs:					
First year other savings, Rs.					
Total Annual Energy savings (Rs. in Lakhs) : 1.30					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after					
Total Annual Electricity Savings	38				
Energy tariff, Rs/ kWh/ Ton/ Nm³/ kL ...	Rs. 3.50				
Company complete address: Dalmia Cement (Bharat) Limited Dalmiapuram – 621651 Dist : Trichirappalli Tamil Nadu				We authorise Bureau to use this information for dissemination Signature Date	