

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure Improvement of Combustion Efficiencies of 2 Nos. Preheating Furnaces of Capacity 1.8 MW each.	Sector: Aluminium Metal
Year to be filled by BEE		Technology
<p>Description of the Energy Conservation Measure: (1a) Preheater Nos. 1&3 were converted from Electrical Heating to Coal Gas Fired Furnaces in the year of 2002. Main drawback of the control system was unreliability of the modulation motor operated Air / Fuel Ratio Control System. In the year of 2006, all the Modulation Motors were replaced by Chrome Schroder make Valves in ON/OFF control logic. Fixed Ratio of Air /Fuel Ratio was maintained by needle valves installed in the respective Combustion Air and Coal Gas Line. With this measure overshooting of temperature as well as Efficiencies of the Furnaces improved.</p> <p>(1b) Installation of Waste Heat Recovery Recuperator of Efficiency 0.5 for improved Combustion Efficiency. Earlier there was no Recuperator and the Flue Exhaust used to vent at an average temperature of 500 deg. centigrade. After installation of Recuperator average combustion air temperature has been increased from 30 deg centigrade to 150 deg C.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
Agency that executed the Project (with Complete Address and Email): In house		
Total Investment: Rs.: 55 Lakhs	Year of implementation: 2007	

First year Energy Cost Savings: Rs.: 7 Lakhs					
First year Other Savings: Rs.: Nil					
On Annual Basis	kWh 000'	Coal (Tons)	Gas Therms	Oil (kL)	Other
Energy Consumption before			1,13,436		
Energy Consumption after			1,01,375		
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL			Rs. 38.0 / Therms		
Company Complete Address: HINDALCO INDUSTRIES LTD. 39, G.T. Road, Belurmath, Howrah - 711202 Contact Person who could be contacted for more information: Supratim Das				We authorize Bureau to use this information for dissemination Signature Date	

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure Modification of Hot Rolling Mill Roll Coolant Line for reduced line losses	Sector
Year to be filled by BEE		Technology
<p>Description of the Energy Conservation Measure:</p> <p>Hot Rolling Mill Roll Coolant Pumps are located at least 100 mtrs away from the Main Rolling Mill. Initially the Mill was of lower capacity and so was its coolant supply line. Over the years, Machine Capacity and the Flow Rate have been increased by increasing Pump Capacity but the Line Capacity was not increased. During Energy Audit, it was observed that at least 25% of Pressure drop were taking place at pipeline and at different Valves. During this Project, pipeline size was increased from 4 inch to 5 inch and the Divergent Valve was also replaced by 25% more capacity valve. With the implementation of this Project required pressure at the Main Header was achieved at much lower RPM of the Roll Coolant Pumps. As the Pumps are driven by VFD-reduction of Pump Speed is manifested through reduction in average Energy Consumption.</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: Nil	Year of Implementation:	

First year Energy Cost Savings: Rs.: 2.5 Lakhs					
First year Other Savings: Rs.: 2.5 Lakhs					
On Annual Basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)/ month	Other
Energy Consumption before	31240				
Energy Consumption after	26000				
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL	3.83				
...					
Company Complete Address: HINDALCO INDUSTRIES LTD. 39. G. T. Road, Belurmath , Howrah – 711202				We authorise Bureau to use this information for dissemination	
Somnath Saha				Signature	
				Date	

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure Installation of Recuperator at Remelt	Sector			
Year to be filled by BEE		Technology			
Description of the Energy Conservation Measure:					
<p>Earlier Flue Exhaust of Melting Furnace No.3 was directly connected to the chimney through the Recuperator Bypass Line. In this year, Recuperator was installed in the Flue Exhaust Line for better Combustion Efficiency. On an average, if the Recuperator Exhaust Inlet Temperature is 850 degree centigrade – then the combustion air temperature remains at 450 degree centigrade. Therefore, atleast 4% Efficiency improvement have been achieved.</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.: 9.0 Lakhs			Year of implementation:		
First year Energy Cost Savings: Rs.: 30 Lakhs					
First year Other Savings: Nil.					
On Annual Basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)/ month	Other
Energy Consumption before				262	
Energy Consumption after				235	
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL				Rs.18.0	
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Partha Rakshit				Signature	
				Date	

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure	Sector			
Year to be filled by BEE	Increase in Speed of Fans at Annealing Furnace No. 4, 5 & 7	Technology			
Description of the Energy Conservation Measure:					
<p>An Experiment on one of our Furnace Showed that, the increased Speed of the Air-Circulating fan has a positive impact on the Furnace Temperature Ramp up time.</p> <p>As per the Result, The Speed Increased in Annealing Furnace No. 4,5 & 7. Savings 65,000 kWh / Annum (Investment = Rs. 4 Lakh, Returns = Rs 2.5 Lakh /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.: 0.400 Million			Year of Implementation: 2007		
First year Energy Cost Savings: Rs.: 0.259 Million					
First year Other Savings: Nil					
On Annual Basis	KWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy Consumption before	3,250				
Energy Consumption after	3,185				
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL	4				
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Contact Person who could be contacted for more information:				Signature	
				Date	

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	<p style="text-align: center; margin: 0;">Title of the Measure</p> Installation of One Number Pressure compensated Energy Saving Hydraulic Pump at Bliss Cold Rolling Mill replacing the previous one.	Sector			
Year to be filled by BEE		Technology			
Description of the Energy Conservation Measure: Bliss Cold Rolling Mill had fixed displacement type Hydraulic Pumps at Central Hydraulic Power Pack. During its operation it was observed that only 25% of the running time the Pump was loaded. Otherwise the flow was relieved through the Relief Valve. As a result lot of Energy was lost and was converted into heat while passing through the Relief Valve resulting in Heating of the Hydraulic Oil. Now the Variable Displacement Pump is installed which gives delivery only when the System requires. During idle running this Pump takes minimum Power. As a result Energy is being saved.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
Agency that executed the Project (with Complete Address and E Mail):					
Total Investment: Rs.: 2 Lakhs		Year of Implementation: 2006 - 2007			
First year Energy Cost Savings, Rs.: 0.95 Lakhs					
First year Other Savings: Nil					
On Annual Basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)/ month	Other
Energy Consumption before	1,60,072				
Energy Consumption after	1,36,072				
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL	4.00				
Company Complete Address: HINDALCO INDUSTRIES LTD. 39 G T Road , Belur Math , Howrah - 711202 Supratim Das				We authorize Bureau to use this information for dissemination Signature Date	

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure: To put OFF the Coiler Slave Motor during the Idle Condition / During the disengage time of Coiler Clutch.	Sector
Year to be filled by BEE		Technology
For providing the required tension in the strip SMS mill has two nos. 350 kW DC Motor, for higher thickness of coil it is required to run the both the Motors but for relatively lower thickness of coil only one motor is sufficient to provide the required tension. So at that time coiler slave motor is detached from the system by an Electro Magnetic Clutch but at that time there was no system to put off the Main Contactor of the Motor. So earlier Motor took full Field Current still at idle condition of the Motor also. Now Logic has been made that after disengage of Clutch, Main Contactor of Slave Motor will be dropped automatically. SO now Motor does not take any filed current during the idle condition of the motor.		
Picture/ sketch/ drawing before modification (if available)		Picture/ sketch/ drawing after modification
Agency that executed the Project (with Complete Address and Email): In house		
Total Investment: Rs.: Nil		Year of Implementation: 2006
First year Energy Cost Savings: Rs.: 6.0 Lakhs.		
First year Other Savings: Rs.: Nil		
On Annual Basis	kWh 000'	Coal (Tons)
	Gas Nm ³	Oil (kL)
	Other	
Energy Consumption before (during Idle Period)	1,50,000	
Energy Consumption after (during idle Period)	0	
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL	4	
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Contact Person who could be contacted for more information: Argha Sarkar.		

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure Delta to Star Conversion of SMS – BLISS Cold Rolling Mill Cooling Tower's Fan and Pump Motors Electrical Connections	Sector			
Year to be filled by BEE		Technology			
Description of the Energy Conservation Measure: 2 Nos. 45 KW Pump Motors and 2 Nos. 15 KW Fan Motors are always in Operation at Cooling Tower to meet the Cooling Water demand at the Rolling Mills. During Energy Audit it was observed that 45 KW Motors were running at 60% Loading and 15 KW Motors at 40% Loading. Immediately Motor's Connections were changed from Delta to Star to minimize the No Load losses, thereby improving the Operating Efficiency of the Motors.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
Agency that executed the Project (with Complete Address and Email):					
Total Investment: Nil	Year of Implementation: 2006 - 2007				
First year Energy Cost Savings: Rs.: 2.5 Lakhs					
First year Other Savings: Rs.:					
On Annual Basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)/ month	Other
Energy Consumption before	475200				
Energy Consumption after	415200				
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL	4.00				
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Somnath Saha				Signature	
				Date	

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure: To Reduce the Speed of the Fume Exhaust Motor at Idle Time of the Mill.	Sector			
Year to be filled by BEE		Technology			
<p>Description of the Energy Conservation Measure: Application: Fume Exhaust System of the Rolling Mill. Motor's KW Rating: 75 KW Motor Speed 1500 RPM Drive system: Frequency Converter.</p> <p>Earlier during the idle period of the Mill, Motor was run by 900 RPM of Speed . After details study, it had been observed that Motor Speed can be brought down to 500 RPM Speed without the effecting the Other System Parameters. Hence Motor Speed has been fixed to 500 RPM during the Idle run of the mill and we get a benefit of Energy Saving of 10% of Total Motor Capacity.</p>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
Agency that executed the Project (with Complete Address and Email): In house					
Total Investment, Rs.: Nil	Year of Implementation: 2007				
First year Energy Cost Savings: Rs.: 65,328.00					
First year Other Savings: Rs.: Nil					
On Annual Basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy Consumption before	45,611.5				
Energy Consumption after	29,204.0				
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL	4				
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Contact Person who could be contacted for more information: Jyotirmay Choudhuri.					

Energy Conservation Measure Implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure: Stooped of One No. of Pump in Hydraulic System - C of SMS Cold Rolling Mill	Sector			
Year to be filled by BEE		Technology			
<p>Description of the Energy Conservation Measure: Application: Hydraulic System Motor's KW Rating: 45 KW of three nos Drive system: Star - Delta Starter. Always three nos 45 KW Motor were running in the Hydraulic System, during the Energy study it has been observed that One Motor is continuously running with no Load. Hence we put off the One Nos. of Motor.</p>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
Agency that executed the Project (with Complete Address and Email): In house					
Total Investment: Rs.:Nil		Year of Implementation:2007			
First year Energy Cost Savings: Rs.: 2.07 Lakhs.					
First year Other Savings: Nil					
On Annual Basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy Consumption before	51,750				
Energy Consumption after	0				
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL	4				
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Contact Person who could be contacted for more information: Rajat Basu Roy				Signature Date	

Energy Conservation Measure implemented in 2006 - 2007

ID to be filled by BEE	Title of the Measure: Replacement of Higher Capacity Motor by much Lower Capacity Motor at the Motor Ventilation System of Cold Rolling Mill.	Sector
Year to be filled by BEE		Technology
Description of the Energy Conservation Measure: Application: Motor Ventilation System. Motor's KW Rating: 75 KW Motor Speed 1475 RPM Drive system: Star – Delta Starter. During study it had been observed that Motor was running with 38.9% to 39.8% of Load of its rated capacity. So we replaced the Higher Capacity Motor (75 KW) by a Lower Capacity Motor (37 KW). As the no load current of the 37 KW Motor is much less than the No Load Current of 75 KW Motor, hence now Motor is taking less Power than earlier.		
Picture/ sketch/ drawing before modification (if available)		Picture/ sketch/ drawing after modification
Agency that executed the Project (with Complete Address and Email): In house		
Total Investment: Nil		Year of Implementation: 2007
First year Energy Cost Savings: Rs.: 75,000.00		
First year Other Savings: Nil		
On Annual Basis	kWh 000'	Coal (Tons)
Energy Consumption before	2,30,607	
Energy Consumption after	2,11,857	
Energy Tariff, Rs/ kWh/ Ton/ Nm ³ / kL	4	
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Contact Person who could be contacted for more information: Jyotirmay Choudhuri		Signature Date