

Energy Conservation Measure implemented in 2007-2008

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

ID to be filled by BEE	Title of the measure Reduction of power in forced and induced draught fans.		Sector			
Year to be filled by BEE			Technology			
Description of the energy conservation measure: Reduction of power in induced and forced draught fans by using hollow aerodynamic efficient blades in cooling fans.						
Action Plan						
Changing of solid FRP fan blades by hollow FRP blades and decreasing the rating of motor wherever required.						
Agency that executed the project (with complete address and email): Parag and Aero tech engineers.						
Total investment, Rs.: 3.14 lacs			Year of implementation: 2007-08			
First year energy cost savings, Rs. 10.6 lacs						
First year other savings: Maintenance cost reduced.						
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water	
Energy consumption before	890400					
Energy consumption after	537600					
Energy tariff, Rs/ kL	3.0/kWh					
Company complete address: Hindustan Zinc limited, Zinc smelter P.O. Visakhapatnam- 530 015 (A.P.)				We authorise Bureau to use this information for dissemination Signature Date: 13/10/2008		
Contact person who could be contacted for more information: Shri. V.M. Patil (Manager- Electrical)						

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ID to be filled by BEE	Title of the measure Reduction of oil fired preheater, running hours by replacement of 1201 Heat exchanger.		Sector		
Year to be filled by BEE			Technology		
Description of the energy conservation measure: LDO consumption has reduced due to less running hours of pre heater. This can be attributed due to better heat exchange in replaced 1201 Heat exchanger.					
Action Plan					
<ul style="list-style-type: none"> Replacement of 1201 Heat exchanger in annual shut down. Leading to better heat exchange between SO₂ and SO₃ gas in 1201 heat exchanger. Hence reduction in LDO fired preheater running hours, which heats up SO₂ gas. 					
Agency that executed the project (with complete address and email): In house team.					
Total investment, Rs.: 50 lacs			Year of implementation: 2007-08		
First year energy cost savings, Rs.23.76 lacs					
First year other savings: Increase in acid production.					
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water
Energy consumption before				72	
Energy consumption after				0	
Energy tariff, Rs/ kL				33000	
Company complete address: Hindustan Zinc limited, Zinc smelter P.O. Visakhapatnam- 530 015 (A.P.)				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Shri. V.M. Patil (Manager- Electrical)				Signature	
				Date: 13/10/2008	

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ID to be filled by BEE	Title of the measure		Sector			
Year to be filled by BEE	Running of turbo circulation pump in waste heat boiler instead of electrical circulation pump.		Technology			
Description of the energy conservation measure:						
Running of turbo circulation pump in waste heat boiler instead of electrical circulation pump.						
Action Plan						
Rectifying the problem of turbo circulation pump and taking into operation, thereby avoiding operation of 75kW electrical motor.						
Agency that executed the project (with complete address and email): KSB.						
Total investment, Rs.: 2 lacs			Year of implementation: 2007-08			
First year energy cost savings, Rs. 14.61 lacs						
First year other savings: Reliability of process achieved.						
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water	
Energy consumption before	487200					
Energy consumption after	0					
Energy tariff, Rs/ kL	3.0/kWh					
Company complete address:				We authorise Bureau to use this information for dissemination		
Hindustan Zinc limited, Zinc smelter P.O. Visakhapatnam- 530 015 (A.P.)						
Contact person who could be contacted for more information:				Signature		
Shri. V.M. Patil (Manager- Electrical)				Date: 13/10/2008		

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ID to be filled by BEE	Title of the measure <i>Arrest air increase into the roaster plant.</i>		Sector			
Year to be filled by BEE			Technology			
Description of the energy conservation measure: <i>Arresting air increase into the roaster plant and thereby reducing the load on blowers.</i>						
Action Plan						
<i>Periodic checking of pressure drops and leakages. Arresting these leakages and reducing the load on plant blowers.</i>						
Agency that executed the project (with complete address and email): In House recommendation by CII.						
Total investment, Rs.: Nil			Year of implementation: 2007-08			
First year energy cost savings, Rs. 5.67 lacs						
First year other savings: Better through put achieved.						
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water	
Energy consumption before	3780000					
Energy consumption after	3591000					
Energy tariff, Rs/ kL	3.0/kWh					
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Contact person who could be contacted for more information: Shri. V.M. Patil (Manager- Electrical)						
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ID to be filled by BEE	Title of the measure NOF transfer to surge tank utilizing the available gradient.		Sector			
Year to be filled by BEE			Technology			
Description of the energy conservation measure: NOF solution which was previously transferred to surge tank using an electrical pump was transferred using a direct launder to surge tank, thereby stopping the operation of electrical pump. .						
Action Plan						
A direct launder was connected from NOF tank to surge tank. Solution was directed through this launder using the available altitude gradient.						
Agency that executed the project (with complete address and email): In house team.						
Total investment, Rs.:0.55 lacs			Year of implementation: 2007-08			
First year energy cost savings, Rs. 5.09 lacs						
First year other savings: maintenance cost reduced.						
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water	
Energy consumption before	170000					
Energy consumption after	0					
Energy tariff, Rs/ kL	3.0/kWh					
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Contact person who could be contacted for more information: Shri. V.M. Patil (Manager- Electrical)						

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ID to be filled by BEE	Title of the measure <u>Optimizing Distribution voltage .</u>		Sector		
Year to be filled by BEE			Technology		
Description of the energy conservation measure: The project is to optimize the distribution voltage both at HT and LT sides in order to improve utilization of transformer and motors.					
Action Taken					
1. Controlled HT voltage from 6.5-6.78kV to 6.55-6.65kV . 2. Reduce LT voltage of Roaster and ZnO plant 437-440V to 413-408V.					
Agency that executed the project (with complete address and email): In House team					
Total investment, Rs.: Nil			Year of implementation: 2007-08		
First year energy cost savings, Rs. 15.37 lacs					
First year other savings, Rs; Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	12180				
Energy consumption after	11667.6				
Energy tariff, Rs/ kWh and Rs./ m3 ...	3.00				
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Contact person who could be contacted for more information: Shri. V.M.Patil(Manager -Electrical)				Signature	
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ID to be filled by BEE	Title of the measure Reduction of power by right sizing of pump impellers.		Sector			
Year to be filled by BEE			Technology			
Description of the energy conservation measure: Reduction of pumping power by reducing the size of pump impellers wherever required.						
Action Plan						
<ul style="list-style-type: none"> Process water pump-7 (70M H, Q: 750 cum/hr, 167kW) in Roaster & Acid Plant cooling tower, Model: SCT Kirloskar 48/200 Pump Impeller Trimmed to 380 mm from 390 mm. In 65 B pump (50M H, Q150 cum/hr, 37kW) of Zinc Electrolysis Plant the Impeller Changed from 6x4-16 to 6X4-14. In Leaching & Purification section, Dorr thickener -8 O/F pump (H: 20M, 11kW, Q: 50cum/hr) The Impeller trimmed from 300 to -270 mm. 						
Agency that executed the project (with complete address and email): In house.						
Total investment, Rs.: Nil			Year of implementation: 2007-08			
First year energy cost savings, Rs. 12.75 lacs						
First year other savings: Leakages avoided.						
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water	
Energy consumption before	1519224					
Energy consumption after	1094016					
Energy tariff, Rs/ kL	3.0/kWh					
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ID to be filled by BEE	Title of the measure <i>Recovery of extra steam 0.5 Ton/ Hr from the waste Heat of Roaster furnace.</i>		Sector		
Year to be filled by BEE			Technology		
Description of the energy conservation measure: <i>Recovery of extra steam 0.5 Ton/ Hr from the waste Heat of Roaster furnace. By way of increasing the capacity of cooling coils surface area in the Roaster Furnace.</i>					
Action Plan					
<i>Earlier the cooling coils of the furnace were of 12.5 m² capacity and the Gases from the boiler outlet used to carry more heat than the process design. Then the area of the cooling coil of the furnace increased from 12.5 m² to 13 m².</i>					
<i>Also after installation of higher size cooling coil, Auxiliary boiler operation was further reduced to almost nil .</i>					
Agency that executed the project (with complete address and email): In House team.					
Total investment, Rs.: 1.8 lacs			Year of implementation: 2007-08		
First year energy cost savings, Rs. 100 lacs					
First year other savings: Increase in production achieved.					
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water
Energy consumption before				310	
Energy consumption after				0	
Energy tariff, Rs/ kL				32000	
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ID to be filled by BEE	Title of the measure	Sector			
Year to be filled by BEE	Reduction in power in leaching and purification plant by using six sigma methodology.	Technology			
Description of the energy conservation measure:					
<p>To reduce the power consumption in Leaching & Purification process from 162.32 kWh to 150kWh per MT of gross Zinc ingot.</p>					
Action Plan					
<p>Following the six sigma roadmap, brain-storming sessions were conducted to identify the factors contributing to more power consumption in Leaching & Purification process. Major factors identified are as under:</p> <ul style="list-style-type: none"> ➤ Ideal running of equipments - Idle running of various centrifugal and pit pumps, agitators and screw conveyors ➤ Motor running at low power factor - 15 Nos. of motor were running with low power factor (<0.7) ➤ High pumping power due to high head of the pumps ➤ High HP motors - Running at higher loads ➤ Excessive bends in the pipeline resulting in chocking and high power consumption ➤ Pumping of solution instead of using gravity flow. <p>These factors were attended and the power was reduced to 147.8units/Mt of Zinc ingot .</p>					
Agency that executed the project (with complete address and email): In house.					
Total investment, Rs.: Marginal			Year of implementation: 2007-08		
First year energy cost savings, Rs. 27.6 lacs					
First year other savings: Increase in production.					
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water
Energy consumption before	+ 920000				
Energy consumption after	0				
Energy tariff, Rs/ kL	3.0/kWh				
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Hindustan Zinc limited, Zinc smelter P.O. Visakhapatnam- 530 015 (A.P.)					
Contact person who could be contacted for more information:					
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ID to be filled by BEE	Title of the measure		Sector			
Year to be filled by BEE	Reduction in millivolt drops in electrolysis circuits.		Technology			
Description of the energy conservation measure:						
Reduction in millivolt drops in electrolysis circuit, which led to power loss due to loose connection.						
Action Plan						
The millivolt drops in electrolysis circuit contributed to losses of about 52.8kW. The drops were identified and the busbars tightened in order to reduce voltage drops leading to a power loss reduction to 33.75kW.						
Agency that executed the project (with complete address and email): In house team.						
Total investment, Rs.: Nil			Year of implementation: 2007-08			
First year energy cost savings, Rs. 4.8 lacs						
First year other savings: Corrosion and heating up of junction avoided.						
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other Water	
Energy consumption before	443520					
Energy consumption after	283500					
Energy tariff, Rs/ kL	3.0/kWh					
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Contact person who could be contacted for more information:				Signature		
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