
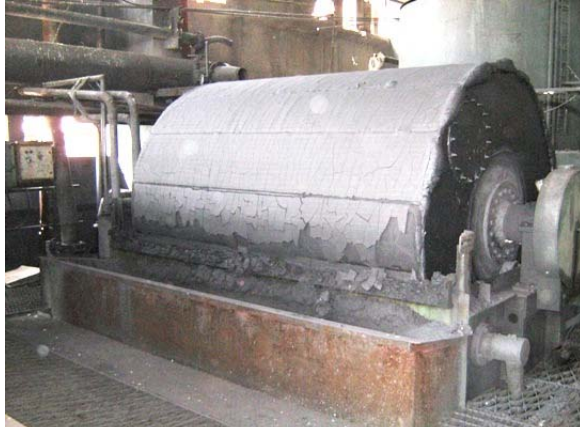




## Energy Conservation Measure implemented in 2007-2008

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

ID to be filled by BEE	Title of the measure		Sector ..... <b>Mining</b>		
Year to be filled by BEE	<b><u>Replacement of Disc filter for Lead by Rotary Drum Vacuum filter</u></b>		Technology ... <b>Dewatering/ Filtration</b>		
Description of the energy conservation measure:					
<p>The Disc filter was being used for dewatering / filtration of Lead concentrate slurry. The moisture content of the product was 18 -20 %. The concentrate was difficult to transport and was consuming more diesel due to more weight of water content. A 125 kW vacuum pump and a compressor was required for disc filter operation. This filter is replaced by a rotary drum filter of higher capacity but with 50 % lower connected load. The vacuum pump required is connected to a 45 kW motor and compressor is not required. The moisture content is 12 %. Overall huge energy saving and better product quality. The energy saving is 2.50 lakh kWh/MT.</p>					
Picture/ sketch/ drawing before modification			Picture/ sketch/ drawing after modification		
					
Vacuum Disc filter			Rotary Vacuum Drum Filter		
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 18.98 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 10.17					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	430				
Energy consumption after	280				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:				We authorise Bureau to use this information for dissemination	
<b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>					
Contact person who could be contacted for more information:				Signature	
<b>Arvind Jangid – Energy Manager</b>				Date 01-10-2008	



## 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	Sector ..... <b>Mining</b>			
Year to be filled by BEE	<b><u>Replacement of inefficient seal water pump by VFD driven vertical multistage pump</u></b>	Technology ... <b>Pumping</b>			
<p><b>Description of the energy conservation measure:</b>          Seal water is required in the tailing slurry pumps battery. One seal water pump coupled to a 15 kW motor (Load 11 kW) was required for running one tailing battery. This was replaced with a vertical multistage energy efficient pump coupled to a 11kW, 2900 rpm motor. The pump is run with a VFD at reduced rpm as per the requirement of pressure. A pressure gage has been added to the discharge water line. The same pump is able to supply seal water to the second tailing battery as well, if two batteries are run simultaneously. The pump runs at 2000 rpm to 2500 rpm as per requirement. The motor loading is 3.7 to 4.4 kW. The energy saved is 1.20 lakh kWh/year.</p>					
<p><b>Picture/ sketch/ drawing before modification</b> (Multistage horizontal inefficient pumps)</p>			<p><b>Picture/ sketch/ drawing after modification</b> (Vertical multi stage EE pump &amp; VFD)</p>		
					
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 1.50 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 4.88 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	175.28				
Energy consumption after	35.28				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:				We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008	
<b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>					
Contact person who could be contacted for more information:					
<b>Arvind Jangid – Energy Manager</b>					



## 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 <b><u>VFD Installation in crusher lube oil pumps</u></b>	Sector ..... <b>Mining</b>			
Year to be filled by BEE		Technology <b>variable frequency drive</b>			
<p><b>Description of the energy conservation measure:</b>          There are three crushers in the crusher plant. Their lubrication is through six pumps (including standby) driven by 5.5 kW AC squirrel cage motors. These geared pumps are very maintenance prone, make a lot of noise, pressure regulation is essential as the pump gears wear out. These pumps are replaced every three months. Now VFD has been installed in these pumps. Pressure can be set by the operator from VFD keypad. The pump is driven at 500 to 900 rpm and is replaced thereafter. There is saving on the pump replacement cost and maintenance cost. The energy saved is 28000 kWh/year.</p>					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
					
Oil pump at full rpm			VFD for oil pump- 3 nos		
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 1.60 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 1.14 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	59.0				
Energy consumption after	31.0				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>  Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>				We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008	



## 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		Sector ..... <b>Mining</b>		
Year to be filled by BEE	<b><u>VFD installation in Ball Mill Belt Feeders</u></b>		Technology ... <b>Variable frequency drive</b>		
Description of the energy conservation measure:					
<p>Belt feeders feed the conveyor going to Ball Mill feed chutes. There were 4.0kW DC motors connected to thyristor DC panel. These are auto controlled from DCS as per the desired feed rate. The feed to the ball mill was not constant and there used to be some fluctuation. All the eight DC drives were replaced by 3.7 kW AC squirrel cage motor and variable frequency drives. The Ball Mill throughput increased, resulting in power saving and better grinding quality. There is direct saving of 50000 units of electricity.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
 <p>Ball Mill belt feeder driven by DC motor</p>			 <p>Belt feeder with AC motor and VFD</p>		
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 2.00 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 2.03 lakhs					
First year other savings, Rs.: 0.50 lakhs maintenance cost					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	121				
Energy consumption after	71				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:				We authorise Bureau to use this information for dissemination	
<b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>					
Contact person who could be contacted for more information:				Signature	
<b>Arvind Jangid – Energy Manager</b>				Date 01-10-2008	



## 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 <b><u>VFD installation in Air Blower</u></b> <b><u>having outlet damper</u></b>	Sector ..... <b>Mining</b>			
Year to be filled by BEE		Technology ... <b>Variable frequency drive</b>			
<b>Description of the energy conservation measure:</b> Air blowers are operated for supplying air to the flotation circuit. One Air Blower with 200 kW, 2950 rpm motor was operated at full speed with different positions of outlet damper. The damper was manually operated as per requirement of air for the number of flotation circuits in operation. Now a variable frequency drive is installed. The damper position is fully open. The blower speed is set as per requirement and is normally run between 2000 to 2500 rpm. The running load dropped from 155 kW to 85 kW. The Total energy saved is 8.50 lakh units per year. Additionally there was drastic reduction in the maintenance cost of the blower, safety issue of blower getting damaged at high rpm was resolved and noise level reduced drastically.					
<b>Picture/ sketch/ drawing before modification</b> (Blower with motor and outlet damper control)		<b>Picture/ sketch/ drawing after modification</b> (VFD panel and Blower damper full open)			
					
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 12.36 lakhs		Year of implementation: 2007-08			
First year energy cost savings, Rs.: 34.58 lakhs					
First year other savings, Rs.: 2.2 Lakhs in maintenance cost					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	1606				
Energy consumption after	756				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address: <b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>				Signature	
				Date 01-10-2008	



## 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	Sector ..... <b>Mining</b>
Year to be filled by BEE	<b><u>Replacement of 125 W HPMV fittings by 36 W electronic choke fittings</u></b>	Technology ... <b>Lighting</b>
<p><b>Description of the energy conservation measure:</b>          125 W HPMV fittings are used for lighting purpose at many locations in the plant. Sixty industrial type T-8 36 W FTL Philips fittings are installed in locations where 24 hrs lighting is required. The lamps chosen are of high lumen output with <u>BEE 5 Star</u> rating. This has resulted in energy saving. Additional benefits include reduction in maintenance cost and improvement of lux level in those areas. There is an energy saving of 50000 kWh/year.</p>		
<b>Picture/ sketch/ drawing before modification</b>		<b>Picture/ sketch/ drawing after modification</b>
		
125 W HPMV lamp fitting		36 W x 2 fitting with BEE 5 star T-8 FTL lamp
Agency that executed the project (with complete address and email): Inhouse		
Total investment, Rs.: 1.20 lakhs		Year of implementation: 2007-08
First year energy cost savings, Rs.: 2.03		
First year other savings, Rs.: 0.60 lakhs on maintenance and relamping cost		
On annual basis	kWh 000'	Coal (Tons)
Energy consumption before	107.280	Gas Nm <sup>3</sup>
Energy consumption after	57.280	Oil (kL)
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068	Other
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>  Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>		We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008


## 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  <b><u>High capacity energy efficient mine back fill pump installation</u></b>	Sector ..... <b>Mining</b>			
Year to be filled by BEE		Technology ... <b>Slurry Pumping</b>			
<b>Description of the energy conservation measure:</b> Classified tailings slurry mixed with cement is pumped to the mines for back filling voids. Old inefficient pumps are replaced with new high capacity energy efficient pumps to transfer the slurry to the mines. This will enhance the mining capacity and save energy. The direct energy saving is 50000 kWh/year.					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 6.14 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 2.03 lakhs					
First year other savings, Rs.: Back filling debottlenecking					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	386				
Energy consumption after	336				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited P.O – Dariba, Dist – Rajsamand Rajasthan, Pin-313211</b>				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>				Signature	
				Date 01-10-2008	



## 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 <b><u>Installation of man coolers in underground mine to avoid compressed air usage</u></b>	Sector ..... <b>Mining</b>
Year to be filled by BEE		Technology <b>Compressed air</b>
<b>Description of the energy conservation measure:</b> Workmen normally opened compressed air lines at various working points. Eight man coolers are installed at various locations / working points in underground mines. Compressed air valves removed. This resulted in compressed air leakage saving and better environment. There is saving of about 50000 kWh/year.		
<b>Picture/ sketch/ drawing before modification</b>		<b>Picture/ sketch/ drawing after modification</b>
Persons uses compressed air for cooling purpose		 <p style="text-align: center;">Miners using motorized man coolers on the back side</p>
Agency that executed the project (with complete address and email): Inhouse		
Total investment, Rs.: 0.40 lakhs		Year of implementation: 2007-08
First year energy cost savings, Rs.: 2.03 lakhs		
First year other savings, Rs.:		
On annual basis	kWh 000'	Coal (Tons)
Energy consumption before ( comp.air)	51	
Energy consumption after	1.75	
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068	
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>  Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>		We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008



## 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		Sector ..... <b>Mining</b>		
Year to be filled by BEE	<b><u>Installation of reciprocating feeder in place of electromagnetic vibro feeder</u></b>		Technology <b>Feeders</b>		
<b>Description of the energy conservation measure:</b> Mine ore is drawn from coarse ore stockpile through feeders into the crusher plant. There are electromagnetic vibrating feeders which feed the conveyor to the crusher. The feeder discharge is intermittent due to high moisture content and insufficient vibration. Two of these feeders are replaced with motor driven reciprocating feeders. The energy saved is 0.50lakh kWh/year.					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
					
Old electromangentic vibrating feeder					
New reciprocating feeder					
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 5.00 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 2.03 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before (crusher throughput increased, crusher power)	1175				
Energy consumption after	1174.5				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:				We authorise Bureau to use this information for dissemination	
<b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>				Signature	
Contact person who could be contacted for more information:				Date 01-10-2008	
<b>Arvind Jangid – Energy Manager</b>					



## 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 <b><u>VFD Installation in crusher lube oil pumps</u></b>	Sector ..... <b>Mining</b>			
Year to be filled by BEE		Technology <b>Variable frequency drive</b>			
<p><b>Description of the energy conservation measure:</b> Compressed air is used in mines for many operations like drilling, chute operations etc. Two no spot compressors (200 cfm) are installed in the underground mines. This will reduce requirement from main compressors at surface. The line length is more than 1.6 km. Line losses as measured also reduced. The compressors are started only when the team reaches the spot. This resulted in saving to the tune of 1.70 lakh kWh/year.</p>					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
					
Old eddy current drive for belt feeder			New AC motor with VFD for belt feeder		
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 7.34 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 6.92 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	335.6				
Energy consumption after	165.6				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited P.O – Dariba, Dist – Rajsamand Rajasthan, Pin-313211</b>				We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008	
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>					



## 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 <b><u>Installation of VFD in thickner U/F pumps</u></b>		Sector ..... <b>Mining</b>		
Year to be filled by BEE			Technology ... <b>Variable frequency drive</b>		
<b>Description of the energy conservation measure:</b> Thickener underflow pumps are used for slurry recirculation in thickener or for transfer slurry to filters for filtration. Fixed speed pump is used for different duties. Outlet is throttled for controlling flow to the filters as per filter capacity and number of filters in operation. The Pumps are of 5.5, 11, and 22 kW ratings. VFD is now installed to control the flow. Slurry overflow and back pumping is reduced. Pumps are being run at lower speed. The energy saved is 1.50 lakh kWh/year units.					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
					
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 1.70 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 6.10 lakhs					
First year other savings, Rs.: 0.75 lakhs on pump maintenance cost					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	318.19				
Energy consumption after	186.19				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited P.O – Dariba, Dist – Rajsamand Rajasthan, Pin-313211</b>				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>				Signature	
				Date 01-10-2008	



## 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	Sector ..... <b>Mining</b>			
Year to be filled by BEE	<b><u>Installation of VFD in place of eddy current drive in the belt feeder of tertiary crusher</u></b>	Technology <b>Variable frequency drive</b>			
<p><b>Description of the energy conservation measure:</b>  Eddy current drives are installed on the belt feeders feeding the tertiary crushers in crusher plant. These drives are unable to operate in the lower band of RPM. There is constant change in rpm below 500 rpm setting. This results in spillage and improper feed to the crusher. Now 3.7 kW, 960 rpm AC motor with VFD is installed. The speed can now be controlled below 500 rpm. There is constant choke feed to the crusher. The energy saved is 30000 kWh/year.</p>					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
					
Old eddy current drive for belt feeder			New AC motor with VFD for belt feeder		
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 0.50 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 1.22 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before (+throughput)	38.4				
Energy consumption after	8.4				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:				We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008	
<b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>					
Contact person who could be contacted for more information:					
<b>Arvind Jangid – Energy Manager</b>					



## 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 <b><u>Installation of spot compressor at fill plant</u></b>	Sector ..... <b>Mining</b>
Year to be filled by BEE		Technology ... <b>Compressed air</b>
<p><b>Description of the energy conservation measure:</b> Compressed air is required at Fill plant for filling operation. The air was drawn through a 1.2 km line from mining compressor house. There used to be pressure drop and heavy leakage in the line. A 200 cfm compressor is installed to supply compressed air at fill plant. The mining compressor is of 2000 cfm. Running hours of that compressor is reduced. This resulted in saving of 2.25 lakh kWh/year.</p>		
<b>Picture/ sketch/ drawing before modification</b>		<b>Picture/ sketch/ drawing after modification</b>
 <p>Air supplied by 2000 CFM compressor through a 800 m line.</p>		 <p>Spot compressor at Fill plant</p>
Agency that executed the project (with complete address and email): Inhouse		
Total investment, Rs.: 4.00 lakhs		Year of implementation: 2007-08
First year energy cost savings, Rs.: 9.15 lakhs		
First year other savings, Rs.:		
On annual basis	kWh 000'	Coal (Tons)
Energy consumption before	295	
Energy consumption after	70	
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068	
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>  Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>		We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008



## 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	Sector ..... <b>Mining</b>			
Year to be filled by BEE	<b><u>Mill throughput increase by using high chrome lifter bars in Ball Mill</u></b>	Technology ... <b>Ball Mill liners</b>			
Description of the energy conservation measure: High chrome lifter bars is used in place of rubber lifter bars. The design was changed and the experiment was successful. Ball Mill throughput increased by 1 MT/hour resulting in a saving of units 5.0 lakhs.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
 <p>Old lifter bars</p>					
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 10.00 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 20.34 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	5540				
Energy consumption after	5040				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>				We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008	
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>					



## 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 <b><u>Replacement of inefficient plant seal water pump by efficient seal water pump</u></b>	Sector ..... <b>Mining</b>			
Year to be filled by BEE		Technology ... <b>Pumping</b>			
<b>Description of the energy conservation measure:</b> Main plant seal water pump is of 30 kW rating. The pump outlet valve is throttled to control flow and pressure. A new pump is ordered based on the pressure and flow measurements. The duty point specified and high efficiency pump saved energy. The saving is 25000 kWh/year.					
<b>Picture/ sketch/ drawing before modification</b>	<b>Picture/ sketch/ drawing after modification</b>				
 <p>Old removed pump</p>	 <p>New installed energy efficient pump</p>				
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 0.7 lakhs	Year of implementation: 2007-08				
First year energy cost savings, Rs.: 1.02 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	110				
Energy consumption after	85				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited P.O – Dariba, Dist – Rajsamand Rajasthan, Pin-313211</b>				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>				Signature  Date 01-10-2008	


## 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	Sector ..... <b>Mining</b>			
Year to be filled by BEE	<b><u>Replacement of North Lode aluminium casting blade ventilation fan by FRP blade fan</u></b>	Technology <b>Mine Ventilation Fan</b>			
<p><b>Description of the energy conservation measure:</b>  A 4000 m<sup>3</sup>/min ventilation fan is used for mine ventilation in the North Lode section of the mine. The fan blades are of aluminium casting. This fan is replaced by a FRP blade fan of same capacity. Other duct works are also carried out. The energy saving achieved is 2.00 lakh kWh/year.</p>					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
					
Old removed aluminium casting fan			FRP blade fan		
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 2.10 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 8.04 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	788.4				
Energy consumption after	586.4				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:				We authorise Bureau to use this information for dissemination  Signature  Date 01-10-2008	
<b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>					
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>					



## 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 <b><u>Replacement of old LHD by new electric LHD</u></b>		Sector ..... <b>Mining</b>		
Year to be filled by BEE			Technology <b>Mucking</b>		
<b>Description of the energy conservation measure:</b> Load Haul Dump (LHD) is used for mucking in underground mine. Old LHD is replaced by new electric LHD. The equipment productivity is quite low and power consumption is quite high. There is one main motor of rating 75 kW. This drives the hydraulic pump of the LHD. The savings accrued on account of power is 1.05 lakh kWh/year.					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
NOT AVAILABLE (Dismantled for taking out)					
New electric LHD					
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 114.74 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 4.27 lakhs					
First year other savings, Rs.: Productivity improved					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	319.5				
Energy consumption after	214.5				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited</b> <b>P.O – Dariba, Dist – Rajsamand</b> <b>Rajasthan, Pin-313211</b>				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>				Signature	
				Date 01-10-2008	

## 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 <b><u>Replacement of inefficient slip ring motor with new EE motor</u></b>	Sector ..... <b>Mining</b>			
Year to be filled by BEE		Technology <b>Electric Motor</b>			
<b>Description of the energy conservation measure:</b> One of the Crusher conveyor is driven through a 110 kW slip ring induction motor. It was observed that the motor used to take high current. The motor is a rewinded one. The motor load was 92kW. This motor is now replaced with new energy efficient squirrel cage motor. Fluid coupling is already there at the motor shaft to start the conveyor smoothly. The motor loading is 86 kW. The energy saved is 40000 kWh/year.					
<b>Picture/ sketch/ drawing before modification</b>			<b>Picture/ sketch/ drawing after modification</b>		
					
Old removed Slip ring motor of the conveyor			New motor coupled to Conveyor gear box		
Agency that executed the project (with complete address and email): Inhouse					
Total investment, Rs.: 2.00 lakhs			Year of implementation: 2007-08		
First year energy cost savings, Rs.: 1.63 lakhs					
First year other savings, Rs.:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Other
Energy consumption before	641				
Energy consumption after	601				
Energy tariff, Rs/ kWh/ Ton/ Nm <sup>3</sup> / kL ...	4.068				
Company complete address:  <b>Rajpura Dariba Mines, Hindustan Zinc Limited P.O – Dariba, Dist – Rajsamand Rajasthan, Pin-313211</b>				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: <b>Arvind Jangid – Energy Manager</b>				Signature	
				Date 01-10-2008	