


Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	<u>Title of the measure</u> OPERATION OF 214 NUMBERS PREBACKED POTS	Sector: ALUMINIUM			
Year to be filled by BEE		Technology: PREBACKED			
<p><u>Description of the energy conservation measure:</u> Hirakud smelter since its inception was running with HSS (Horizontal Stud Soderberg) technology. The HSS technology is the primitive technology. The main disadvantages of HSS technology are >High power consumption >High degree of environmental pollution >Rough process control >Requires manual intervention In comparison to HSS technology the latest technology in aluminum smelting operation is the prebacked technology, where the disadvantages of HSS technology are taken care to appropriate extent. Hirakud smelter has planned to expand its capacity from 65000 Tons to 1,50,000 Tons per annum. Presently 214 Prebacked pots are added. The normal efficiency of HSS pots are 88-89%, where as prebacked pots having 94%. More over the DC power consumption of HSS pots 15000kwh/ton of metal production, where as prebacked pots operates with DC power consumption 135000kwh/ton.</p>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
(HSS POT FOR ALUMINIUM REDUCTION)	(PRE-BAKED POT FOR ALUMINIUM REDUCTION)				
					
Agency that executed the project (with complete address ad email): GAMI, China					
Total investment, Rs.: 35000 Lakhs	Year of implementation: 2006-07				
First year energy cost savings, Rs.: 1000 Lakhs					
First year other savings, Rs.: 200 Lakhs					
On annual basis	KWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	466422.3				
Energy consumption after	419780				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				

Company complete address:

Hirakud smelter

Hirakud-768016

Dist-Sambalpur

State-Orissa

Tel- (0663) 2481273,2481307,2401655

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Contact person who could be contacted for more information:


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Date

Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	<u>Title of the measure</u> INSTALLAMENT OF ONE HARMONIC FILTER IN OSS#3.	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<p><u>Description of the energy conservation measure:</u> Previously OSS #3 was operating with low power factor (about 70%) due to non-availability of the harmonic filter.</p> <ul style="list-style-type: none"> • More reactive power being imported from grid, which leads to high import of active power to meet our requirement. • Power cost becoming high and accordingly high power factor penalty also being levied. • HP TGs is forced to generate more reactive power than active power. <p>After installation of Harmonic filter in OSS#3, The power factor will be improved to about 95% for which high power cost and the substantial power factor penalty payment will be avoid.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
NA	(HARMONIC FILTER OSS-3) 	
Agency that executed the project (with complete address and email): ABB, Banglore		
Total investment, Rs.: 200 Lakhs	Year of implementation: 2006-07	



First year energy cost savings, Rs : 6,10,00,000/-					
First year other savings, Rs.: 50,000,00/-					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	43200				
Energy consumption after	40660				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena.				We authorise Bureau to use this information for dissemination Signature Date	

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ID to be filled by BEE	Title of the measure INSTALLATION OF LIGHTING TRASFORMER FOR POT ROOM -8	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<u>Description of the energy conservation measure:</u> In Pot room # 8 for lighting purpose one lighting transformer along with tap changer was installed in 2006-07. The earlier energy consumption was 249660 KWH /Annum. Energy conservation project was taken up keeping in mind for minimizing the energy consumption. So, one 298KVA Booster Transformer which was lying ideal ,which consumed 214620 KWH /Annum. So, 35040 KWH /Annum energy was saved.		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
NA	 <p style="text-align: center;">(LIGHTING TRANSFORMER WITH TAP CHANGER)</p>	
Agency that executed the project (with complete address and email): In House		
Total investment, Rs.: 20,000/-	Year of implementation: 2006-07	


First year energy cost savings, Rs.: 1,33,152/-					
First year other savings, Rs.: Rs 1,000,00/- in terms of saving failure of ballast, lamps and other accessories					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	249.6				
Energy consumption after	214.6				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena.				We authorise 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 INSTALLTION OF VVFD FIRE HYDRADENT JOKEY PUMP	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<p><u>Description of the energy conservation measure:</u> For Safety purpose we have fire hydrant system for SMELTER plant. Previously we had the system One pressure switch was there and D.O.L Starter to give feedback to the pump to run there was a set point of pressure 35psi-45psi. When the pressure will be below 35 psi then the pump will start automatically to maintain the pressure. But system has some problem >Power contactor regular ON/OFF. >Reading steady state will be late through this type of variation, which causes more energy consumption. >Motor is regularly ON/OFF that decreases the electrical & mechanical life. Now that system has removed by a VVFD Drive. Here we are giving a set point of pressure that works in PID Loop by taking the feed back of OUT PUT signal. Here the pump runs at low speed Consuming low power</p>		
Picture/ sketch/ drawing before modification (if available)		Picture/ sketch/ drawing after modification
 <p style="text-align: center;">(DOL starter for Pump)</p>		 <p style="text-align: center;">VVFD IN FIRE HYDRANT SYSTEM</p>
Agency that executed the project (with complete address and email): In house		
Total investment, Rs: 65,000/-		Year of implementation: 2006-07
First year energy cost savings, Rs.: 81,618/-		
First year other savings, Rs.: 50,000/- approx.		

On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	62.2				
Energy consumption after	21.6				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise 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 OUTSOURCING OF ANODE FOR PREBACKED POTS	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<p><u>Description of the energy conservation measure:</u> Due to prebaked conversion the process of electrolysis differ from HSS. Here electrolysis takes place in between anode & cathode. For which baked anode is required which is supplied by Rodding plant. Consumption of AC Power is very less in Rodding plant. But in carbon plant consumption is more than rodding plant, Extra consumption of carbon plant is furnace oil. After completion of project from HSS to PREBACKED, consumption will minimum and no requirement of furnace oil.</p>		
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification	
NA	 <p style="text-align: center;">ANODE FORM RODDING PLANT</p>	
Agency that executed the project (with complete address and email): WEBB India		
Total investment, Rs: 15000 lakhs	Year of implementation: 2006-07	

First year energy cost savings, Rs.: 75,00,000/-					
First year other savings, Rs: 50,000,00 (In terms of maintenance cost)					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	1014			400	
Energy consumption after	271.2			100	
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000			Rs 20,000/KL	
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise Bureau to use this information for dissemination Signature Date	


Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	<u>Title of the measure</u> DIMMING BALLAST FOR STREET LIGHT	Sector: ALUMINIUM			
Year to be filled by BEE		Technology: PREBAKED			
<u>Description of the energy conservation measure:</u> We are having streetlights of various wattages used in our plant and colony. Streetlights of 400W, 250W, 150W and 70W find extensive use in our plant and colony. Streetlights in colony areas and many places in plant areas find lesser use in terms of intensity after 11 PM in the night from 6.00 AM in the morning. Hence in order to achieve saving in street lights dimming ballast are used with suitable timer to reduce the intensity of lights. Street lights of 400W are converted to 250Watt, 250W are converted to 150W and 150W are converted to 70W fittings. 100 numbers of such dimming ballst are used inside the plant and colony					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
Agency that executed the project (with complete address and email): In-house, Philips Lighting					
Total investment, Rs: 1,00,000/-	Year of implementation: 2006-07				
First year energy cost savings, Rs.: 5,00,000/-					
First year other savings, Rs:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	4.06				
Energy consumption after	1.56				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise 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 BYPASSING OF 11 NUMBERS STUD PLANTER	Sector: ALUMINIUM			
Year to be filled by BEE		Technology: PREBAKED			
<u>Description of the energy conservation measure:</u> HIRAKUD Smelter was running in HSS Technology, for which stud planter was very much required to Insert stud in to anode in which current will flow. Stud planters are working for 16 hours per day; Each stud planter has electrical energy consumption of 10 kw. But after conversion from HSS to Pre baked technology stud planters are no more required.					
Picture/ sketch/ drawing before modification (If available)			Picture/ sketch/ drawing after modification		
NA					
STUD PLANTER					
Agency that executed the project (with complete address and email):					
Total investment, Rs: NIL			Year of implementation: 2006-07		
First year energy cost savings, Rs.: 12,67,200/-					
First year other savings, Rs: 30,00,000/- (maintenance cost of equipments)					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	633.6				
Energy consumption after	NIL				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise 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 BYPASSING OF 12 NUMBERS STUD PULLER	Sector: ALUMINIUM			
Year to be filled by BEE		Technology: PREBAKED			
<p><u>Description of the energy conservation measure:</u> Hydraulic stud pullers are extensively used in our HSS pot lines for pulling the studs. Stud pullers are having electrical consumption in the tune of 5 Kw, which includes the AC power consumption by the hydraulic motor and the DC power consumption by the traction motor. After conversion of pots from HSS (Horizontal stud soderberg) technology to Pre-baked technology, these stud pullers are no more required for operation. Hence there is a large amount of electrical energy saving on account of this. These stud pullers are used for 16 hours a day and there are 12 numbers such equipment for operation.</p>					
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification				
NA	 <p style="text-align: center;">STUD PULLER</p>				
Agency that executed the project (with complete address and email):					
Total investment, Rs: NIL	Year of implementation: 2006-07				
First year energy cost savings, Rs.: 9,67,600/-					
First year other savings, Rs: 30,00,000/- (On account of maintenance cost)					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	483.8				
Energy consumption after	NIL				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com Contact person who could be contacted for more information: Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise 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 BYPASSING OF 16 NUMBERS ALUMINA CHARGER	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<p><u>Description of the energy conservation measure:</u> Alumina chargers are one of the vital and critical equipment for HSS pot lines to feed alumina powder to pots for the production of aluminum. There are 16 numbers alumina charger at Hirakud smelter, which operates round the clock to supply powder to the process. How ever after conversion from HSS to pre-baked pot lines, alumina powder are now automatically feed to the pots by HDPS system (Hyper dense phase system) and center feed breakers cum feeders. The power consumption for the HDPS system is very minimal as compared to the alumina charger.</p>		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
	 <p style="text-align: center;">ALUMINA CHARGER</p>	
Agency that executed the project (with complete address and email):		
Total investment, Rs: NIL	Year of implementation: 2006-07	


First year energy cost savings, Rs.: 9,67,680/-					
First year other savings, Rs: 50,00,000/- (In terms of equipment maintenance cost)					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	483.8				
Energy consumption after	NIL				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise 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 BY PASSING OF 5 NUMBERS 500 CFM RECIPROCATING AIR COMPRESSORS	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<p><u>Description of the energy conservation measure:</u> Crust breakers are used to break the crust formed in a pot so that alumina powder can be feed to the pots. In order to break the crust nearly 40 numbers crust breakers are used in our plant. All the crust breakers are pneumatic operated machines for which nearly five numbers air compressors are running round the clock. Each air compressors were connected with a 90 Kw Induction motor. After conversion from HSS to pre-baked technology all the crust breakers are not required. In place of crust breaker each pots are provided with center feed crust breaker, which runs optimally to break crust and feed powder. As the center feed crust breakers are situated in the center of the pots, where the temperature are very high, Hence minimum power is required to break these crust.</p>		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
	 <p style="text-align: center; margin-top: 10px;">CRUST BREAKER</p>	
Agency that executed the project (with complete address and email):		
Total investment, Rs: NIL	Year of implementation: 2006-07	


First year energy cost savings, Rs.: 78,84,000/-					
First year other savings, Rs: 25,000,00/-					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	3942			10	
Energy consumption after	NIL			Nil	
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000			50000	
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Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure BYPASSING OF O2 NUMBERS SAND BLASTING ROTOBLAST	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<u>Description of the energy conservation measure:</u> Sand blasting roto blast is very much essential to clean the studs used in anode to flow of current. After fixed duration due to dust accumulation in stud its resistance increases, for that reason cleaning of stud is required. Sand blasting roto blast is used for clean the stud by sand firing. But in prebaked technology no stud is required. That's why we are by passing O2 numbers of sand blasting roto blast. It was running 15hrs/day, its consumption is 40KW		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
NA	 <p style="text-align: center; margin-top: 10px;">ROTOBLAST</p>	
Agency that executed the project (with complete address and email):		
Total investment, Rs: NIL	Year of implementation: 2006-07	


First year energy cost savings, Rs.: 8,64,000/-					
First year other savings, Rs: 5,00,000/- (Maintenance cost)					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	432.00				
Energy consumption after	NIL				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
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Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure 90KA SINGLE CONVERTER UNIT	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<p><u>Description of the energy conservation measure:</u> For conversion from HSS pot to PREBAKED pot 85KA is required for which new Rectifier station is commissioned. This rectifier station contains 02 no of converter unit each of 90KA.</p> <p>The advantages of single unit: >Conversion loss is less. >Auxiliary consumption is less. >Easy to control. Previously in other pot line conversion loss is more and auxiliary consumption is more.</p>		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
	 <p style="text-align: center;">90KA SINGLE CONVERTER UNIT</p>	
Agency that executed the project (with complete address and email): ABB India		
Total investment, Rs: 3500 Lakhs	Year of implementation: 2006-07	


First year energy cost savings, Rs.: 2,88,000/-					
First year other savings, Rs:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	1080.00				
Energy consumption after	936.00				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
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ID to be filled by BEE	Title of the measure USE OF SCREW COMPRESSOR FOR LINE#4	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<u>Description of the energy conservation measure:</u>		
<p>Previously we are using reciprocating type compressors for our compressed air needs. Reciprocating compressors are less energy efficient and consume lots of electrical energy. Also the oil consumption in these types of compressors is very high. For our compressed air requirement now we have replaced old compressors with screw compressors. Only one number 250 kW screw compressors now meet earlier 5 numbers 90 Kw reciprocating compressors requirement. Hence the screw compressors are proving to be more energy efficient than reciprocating compressors.</p>		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
		
	USE OF SCREW COMPRESSOR FOR LINE#4	
Agency that executed the project (with complete address and email):		
Total investment, Rs: 45 lakhs	Year of implementation: 2006-07	



First year energy cost savings, Rs.: 35,04,000/-					
First year other savings, Rs:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	3942				
Energy consumption after	2190				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise Bureau to use this information for dissemination Signature Date	

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ID to be filled by BEE	Title of the measure ADDITION OF NEW PCC IN EXISTING POWER CONTROL BOARD	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<p><u>Description of the energy conservation measure:</u></p> <p>Due to the capacity expansion at Hirakud smelter, there was an obvious need for expanding the capacity of auxiliary power in the plant. Initially it was thought of putting a new substation for catering the requirement of the auxiliary power. The approximate cost of putting a new substation was calculated to be in the tune of Rs 50 lakhs, which includes the cost of two numbers new transformers, related LT Air Circuit Breaker panels. However the Electrical Maintenance team thought of a new idea to expand the old Auxiliary substation-1 and use the existing transformer can take the extra load. However the most challenging job to execute the project was to <i>a) Connect the main bus bar of old ACB panels with the new panels b) To avoid any auxiliary power outage to the existing installations of the plant.</i> The team had a meticulous planning to eliminate the above mentioned two difficulties and implemented the project successfully. The total cost incurred in implementing the project was Rs 12 Lakhs and there was a saving of Rs 38 lakhs as one time saving. There was also huge energy saving as it avoid the un necessary running of one number 2 MVA transformer</p>		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
	 <p>(OLD and NEW PCC COUPLED TOGETHER)</p>	
Agency that executed the project (with complete address and email): In house		
Total investment, Rs: 12 lakhs	Year of implementation: 2006-07	



First year energy cost savings, Rs.: 4,38,000/-					
First year other savings, Rs: 38,000,00/-					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	219				
Energy consumption after					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
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ID to be filled by BEE	Title of the measure REPLACEMENT OF THREE NUMBERS LOW EFFICIENT TRANSFORMER BY NEW ENERGY EFFICIENT TRANSFORMER	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<u>Description of the energy conservation measure:</u> Rectifier station # 1, which caters DC power to Pot line-1 of our plant, has a total of seven numbers rectifier transformers out of which four transformers are very old (1958 made). In the year 2006-07 out of the four old transformers new 18.5 MVA rectifier transformer replaces three transformers. The replacement is accomplished by replacement of three new thyristor type digital converter units. This replacement drastically reduces the conversion loss.		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
(OLD RECTIFIER TRANSFORMER)	(NEW RECTIFIER TRANSFORMER)	
		
Agency that executed the project (with complete address and email): In house		
Total investment, Rs: 800 lakhs	Year of implementation: 2006-07	


First year energy cost savings, Rs.: 80,000,00/-					
First year other savings, Rs: 10,000,00/-					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	9050				
Energy consumption after	5040				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise Bureau to use this information for dissemination Signature Date	

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ID to be filled by BEE	Title of the measure BY PASSING OF THREE NUMBERS COMPRESSOR BY REPLACEMENT OF POT DOORS	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<u>Description of the energy conservation measure:</u>		
<p>In HSS pot lines pot doors are provided in both front and backside of the pots. All the pot doors are operated by compressed air produced by air compressors. With the conversion of HSS pot line to pre-baked pots, pot hoods, which require no compressed air, replace pot doors. Hence two numbers air compressor are idle because of the said changes. The replacement also avoids air loss in pot door cylinders and flexible pipelines.</p>		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
(OLD POT DOOR ARRANGEMENT)	(NEW POT HOOD)	
		
Agency that executed the project (with complete address and email): In house		
Total investment, Rs: Nil	Year of implementation: 2006-07	


First year energy cost savings, Rs.: 31,53,600/-					
First year other savings, Rs: 5,000,00/- (Repair and maintenance cost)					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	1567.8				
Energy consumption after					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise 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 ENERGY SAVING BY ENHANCING PRODUCTIVITY THROUGH NEW INGOT CASTING MACHINE	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<u>Description of the energy conservation measure:</u> In our casting plant there was a 1-20K ingot casting machine of 8T /Hour capacity. The machine was used to producing 1-20K ingot from oil fired 20T capacity furnace. Because of low capacity of the machine, huge quantity of furnace oil was required to maintain the temperature of hot metal. The ingot-casting machine was replaced by an automatic 15T/Hour capacity machine. As a result of which The FO consumption of casting plant has reduced. Also there is electrical energy saving per ton of metal produced.		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
	(NEW INGOT CASTING MACHINE)	
		
Agency that executed the project (with complete address and email): In house		
Total investment, Rs: 300 lakhs	Year of implementation: 2006-07	

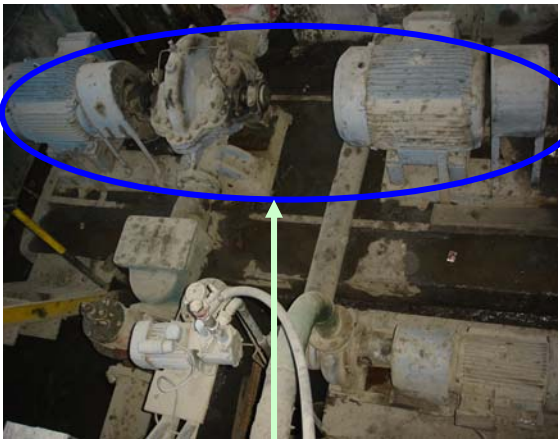

First year energy cost savings, Rs.: 31,80,000/-					
First year other savings, Rs:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before				900	
Energy consumption after				741	
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000			20000	
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise 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 BY PASSING OF 65 MVA REGULATING TRANSFORMER OF RECTIFIER STATION-1	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<u>Description of the energy conservation measure:</u>		
<p>Earlier rectifier station-1, which supplies DC power to Pot line-1 was operating with 216 numbers of pots. Considering 4.5V per each pot, the total voltage of the system was 972 Volts. However rectifier station-1, being an old installation was designed for 900V DC. In order to cope with the higher DC voltage one number 65 MVA regulating transformer was used with OLTC for varying the voltage when required. At present the number of pot in line-1 was reduced to 172 pots instead of 216 pots. Hence the requirement of 65 MVA regulating transformer was not felt and hence the transformer was by passed. There was a electrical energy saving on account of the no-load loss and load loss of the transformer which was in the tune of 250Kw.</p>		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
NA	<p style="text-align: center;">(BY PASSED 65 MVA REGULATING TRANSFORMER)</p> 	
Agency that executed the project (with complete address and email): In house		
Total investment, Rs: Nil	Year of implementation: 2006-07	


First year energy cost savings, Rs.: 43,80,000/-					
First year other savings, Rs:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	2190				
Energy consumption after					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
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Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure SEPARATE PUMP MOTOR SET FOR INGOT CASTING MACHINE	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<p><u>Description of the energy conservation measure:</u></p> <p>Casting plant has a cooling tower for process water cooling which employees 75 kW pump motor set For DC casting. How ever the same motor was being used for 1-20K ingot-casting machine, which uses lesser volume and pressure of water. In order to avoid energy loss, a separate 18.5 kW motor was installed in the cooling tower for the purpose of 1-20K ingot casting only. The above project avoid un-necessary running of the 75 kW motor. Nearly 16 hours of unnecessary running of the motor was avoided for the 1-20K ingot casting machine</p>		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
 <p style="text-align: center;">75 kW motor earlier being used for 1-20K casting</p>	<p>New 18.5 kW motor was installed in the same cooling tower for 1-20K ingot casting machine</p> 	
Agency that executed the project (with complete address and email): In house		
Total investment, Rs: 15,000/-	Year of implementation: 2006-07	

First year energy cost savings, Rs.: 5,25,600/-					
First year other savings, Rs:					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	350.4				
Energy consumption after	87.6				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise 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 USE OF ENERGY SAVER LIGHTS AT VARIOUS PLACES IN PLANT AND COLONY	Sector: ALUMINIUM
Year to be filled by BEE		Technology: PREBAKED
<u>Description of the energy conservation measure:</u> Use of Energy saver lights, choke and other accessories are one of the on going processes in our plant. In the year 2006-07 nearly 300 numbers tube lights (40W) are replaced by 16W energy saver lamps. The above replacement has resulted in energy saving and also reduced the maintenance cost.		
Picture/ sketch/ drawing before modification (If available)	Picture/ sketch/ drawing after modification	
NA	(ENERGY SAVER LIGHT IN CANTEEN) 	
Agency that executed the project (with complete address and email): In house		
Total investment, Rs: 20,000/-	Year of implementation: 2006-07	

First year energy cost savings, Rs.: 1,57,680/-					
First year other savings, Rs: 10,000/-					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	105.12				
Energy consumption after	26.28				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.000				
Company complete address: Hirakud smelter Hirakud-768016 Dist-Sambalpur State-Orissa Tel- (0663) 2481273,2481307,2401655 Fax- (0663) 2481356 E-mail: hirakudsmelter@adityabirla.com <u>Contact person who could be contacted for more information:</u> Sanjay Kumar Jena. Mobile NO. 9937102809				We authorise Bureau to use this information for dissemination Signature Date	