



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure <b style="color: blue;">Incorporation of VFC System in Centralised Compressors.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: Variable Feed Control System has been incorporated in the Header Outline of "Low Pressure" and "High Pressure" Air Respectively near the Centralised Compressor Room to reduce the air pressure fluctuation band and hence save upon frequent changes of compressor loading/unloading. Reduced pressure fluctuation helps in reducing the energy consumed by the compressors.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
No Variable Feed Control System in Place.					
Agency that executed the project (with complete address and email): <b style="color: blue;">Energy Logistics - Pune					
Total investment, Rs.: <b style="color: blue;">6.83 Lakhs			Year of implementation: <b style="color: blue;">2006		
First year energy cost savings, Rs.: <b style="color: blue;">4.68 Lakhs					
First year other savings, Rs.: <b style="color: blue;">n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	2174.98				
Energy consumption after	2008.00				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Automation of Compressed Air System.		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Indigenous		
Description of the energy conservation measure: Install a Composite Compressor Control System which will oversee the status of each compressor and the process demand. Accordingly this will chooses the best combination of running of the compressors, decide loading (0 , 50, 100 %) of each compressor and work with a narrow band width . The status and power consumption will be monitored and any adverse variance will be immediately noticed to initiate remedial action. The system is termed as Savair Manager and is hooked up with a remote PC in the Paper Machine Control Room for constant monitoring by shift managers.					
Picture/ sketch/ drawing before modification (if available)		Picture/ sketch/ drawing after modification			
No Automation in Place.					
Agency that executed the project (with complete address and email): Energy Logistics - Pune					
Total investment, Rs.: 9.42 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 3.39 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	2174.98				
Energy consumption after	1887.00				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure IJT Boiler Waste Heat Recovery (Air Preheater)	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
<p>Description of the energy conservation measure: This was an outcome from Employees Brainstorming Session – We utilised the available heat in the flue gas of IJT which was earlier released to the atmosphere through the Chimney . Installed an Air Pre-Heater in the IJT Flue Gas Duct to extract the heat of hot flue gas and loop the same to the furnace, through new insulated ducts, for heating the cold (ambient) fresh air for combustion. Thereby reducing coal consumption in the IJT Boiler.</p> <p>Modern day boilers of the same type are equipped with Air Pre-heater from the very inception. However, the situation had been different during installation of our IJT Boiler in 1980. Air-Preheater was not included with the original Boiler . Thus, by default, we have a potential of coal saving by preheating the combustion air by extracting heat from hot flue gases.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
Agency that executed the project (with complete address and email): Isgec John Thompson (IJT) , the Boiler OEM - Chennai					
Total investment, Rs.: 45.97 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 29.64 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after		-1507.48			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...		1967			
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of PM4 Hydropulper 90kW Slip Ring Motor with Super Efficient Motor.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Imported			
Description of the energy conservation measure: Continuous focus was given in analyzing the health and efficiencies of existing Motors in the Plant, out of which this was one of the motors having very low efficiency 87% as per IEC Method 2 was replaced with Super Efficient BALDOR Motor from USA having 97.2% efficiency (as per IEC Method 2). The MOC and Design of these Super-E Motors are patented by BALDOR for yielding higher efficiency.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): Motor Manufacturer – BALDOR Electric, Indian Office at Pune.					
Total investment, Rs.: 6.67 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 2.42 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	827.59				
Energy consumption after	740.72				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	

Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of 2Nos. 1000m³/hr TG3 Cooling Water Pumps with One 1500 m³/hr pump.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: Running One 1500 m3/hr energy efficient pump in variable speed (Instead of two 1000 M3/Hr fixed speed Pumps) to take care of Variable demand of our Turbine Generator Set No. 3. This was prior incorporated in our Turbine Generator No.2 in the year 2005-06 paving the way for replication. The same concept has also been highly appreciated by the Turbine OEM m/s Triveni Engineering.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): KIRLOSKAR Make Pump, project executed In-House.					
Total investment, Rs.: 17 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 8.12 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	1314				
Energy consumption after	1024				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.80				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of Paper Machine No.3 Separator1 Condensate Pump with Energy Efficient Vertical Pump.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Imported			
Description of the energy conservation measure: This was an outcome from Employees Brainstorming Session – The old pumps (Main / Standby) were prone to failures including of gland steam leakages, low NPSH. Incorporated “Grundfos” Make “CRN 10-4” pump with mechanical seals and are designed to operate at condensate temperature of 150 Deg.C.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
						
Agency that executed the project (with complete address and email): Pump & Motor Manufacturer – M/S Grundfos . Project Executed In-House.						
Total investment, Rs.: 3.60 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 0.65 Lakhs						
First year other savings, Rs.: n.a						
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other	
Energy consumption before	38.42					
Energy consumption after	15.417					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8					
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature		
				Date		



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Incorporating Condenser Vacuum + Temperature Based Variable Speed Drive of TG3 1500m³/hr Cooling Water Pump.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: In TG-3 the condenser designed load is 23.4 tons/h, but from the past records, average condensing load on the condenser is found to be about 16 to 17 tons/h (60%). Load on the TG3 continuously varies. However, the cooling water flow through condenser was circulated constantly at 100%, irrespective of the varying condensing load. Earlier there was flow/pressure regulation by throttling of valves to distribute the total cooling water to condenser, alternator and turbine oil cooler. After the success of the TG2 innovative Vacuum-Temperature DCS Control Loop with VSD, we have implemented the same in our Turbine Alternator No.3 this year. This project was highly appreciated by the OEM m/s Triveni Engineering.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
Agency that executed the project (with complete address and email): In-House expertise for the innovative DCS Loop. VFD of Rockwell Power Flex.					
Total investment, Rs.: 12.60 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 6.58 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	1024				
Energy consumption after	789				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Installation of Solar Water Heater System 220LPD in Mill Canteen	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Imported			
Description of the energy conservation measure: Our panel of In-House experts have been tracking the Solar Water Heaters since a long period (more than 3 years). We were not satisfied with conventional plate / pipe type solar water heaters due to reduced efficiency and high dependency on water quality (low efficiency due to hard water deposition and also difficulty in cleaning). We came across the "Evacuated Tube" technology and found these to be abundantly used by a group of Small Scale Textile Cottage Industries in West Bengal. The evacuated tube type provides higher efficiency, than contemporary solar water heater systems, are less prone to scale deposition, are easy to clean and monitor the effectiveness of the system and also are cheaper than their counterparts. We incorporated our 1 st Solar Water Heater System with Evacuated Tube Technology from "British Console" for a 220 LPD system for our Mill Canteen eliminating 2 Nos. Electric Water Geysers.					
Picture/ sketch/ drawing before modification (if available)		Picture/ sketch/ drawing after modification			
					
Agency that executed the project (with complete address and email): GP Tronics – Kolkata, West Bengal.					
Total investment, Rs.: 0.70 Lakhs		Year of implementation: 2006			
First year energy cost savings, Rs.: 0.25 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	9.00				
Energy consumption after	0				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of PM1 Pre-Dryer Moisture Sensor with State-of-art Moisture Sensor		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Imported		
Description of the energy conservation measure: The old NDC infrared type moisture transmitter, which was eleven years old was replaced with IG710 type for improving quality of paper. This transmitter provides moisture signal to the predryer moisture controller, which is critical for the master steam pressure controller of the predryer section of PM1. Any variation in the moisture signal ultimately affects the entire predryer group, resulting in paper breaks and affecting the quality of paper. This project was aimed at reducing quality variations and rejections, thus saving steam consumptions.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Supplier – Earth Teknics – Kolkata, executed by In-House Team.					
Total investment, Rs.: 11.68 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 7.13 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after		-362.49			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...		1967			
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Capacity Utilisation of HP Shower Pump of Paper Machine No. 1	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
<p>Description of the energy conservation measure: This was an outcome from Employees TPM activities in PM1. The Pump was almost a new pump replaced in the year 2004 for energy savings but the observation was that there was still a valve throttling of more than 30%. The TPM team came up with a fantastic idea of contacting the manufacturer – M/S KSB and sought their intervention to reduce one disc out of the multistage pump to reduce its energy consumption as well as minimize the throttling required. The same was carried out In-House after getting a technical clearance from the Manufacturer – M/S KSB that the same will not affect the performance of the pump.</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 Expertise.					
Total investment, Rs.: 0.00 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 0.08 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	210.24				
Energy consumption after	207.20				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of Slip Ring Motor of PM1 Hydropulper No. 1, 93kW with Super Efficient Motor.		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Imported		
Description of the energy conservation measure: Continuous focus was given in analyzing the health and efficiencies of existing Motors in the Plant, out of which this was one of the motors having very low efficiency 89% as per IEC Method 2 was replaced with Super Efficient BALDOR Motor from USA having 97.2% efficiency (as per IEC Method 2). The MOC and Design of these Super-E Motors are patented by BALDOR for yielding higher efficiency.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Motor Manufacturer – BALDOR Electric, Indian Office at Pune.					
Total investment, Rs.: 6.67 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 1.79 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	808.99				
Energy consumption after	745.00				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of Paper Machine No.3 Separator No.2 Condensate Pump with Energy Efficient Vertical Pump.		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Imported		
Description of the energy conservation measure: This was an outcome from Employees Brainstorming Session – The old pumps (Main / Standby) of Separator No. 2 were prone to failures including of gland steam leakages, low NPSH. Incorporated “Grundfos” Make “CRN 10-4” pump with mechanical seals and are designed to operate at condensate temperature of 150 Deg.C. Incorporated after success of Separator No.1 Trial. We have considered savings based on the difference of Motor rating that is 5.5kW earlier motor, Now we are having Grundfos make 2.2kW Motor.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Pump & Motor Manufacturer – M/S Grundfos . Project Executed In-House.					
Total investment, Rs.: 3.60 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 0.65 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	38.42				
Energy consumption after	15.42				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Installation of Solar Water Heater System – Elimination of 4 Electric Water Geysers in River Side Canteen – 220LPD Capacity.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Imported			
<p>Description of the energy conservation measure: Our panel of In-House experts have been tracking the Solar Water Heaters since a long period (more than 3 years). We were not satisfied with conventional plate / pipe type solar water heaters due to reduced efficiency and high dependency on water quality (low efficiency due to hard water deposition and also difficulty in cleaning). We came across the "Evacuated Tube" technology and found these to be abundantly used by a group of Small Scale Textile Cottage Industries in West Bengal. The evacuated tube type provides higher efficiency than contemporary solar water heater systems, are less prone to scale deposition, are easy to clean and monitor the effectiveness of the system and also are cheaper than their counterparts. We incorporated our 1st Solar Water Heater System with Evacuated Tube Technology from "British Console" for a 220 LPD system for our Mill Canteen eliminating 2 Nos. Electric Water Geysers.</p>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): GP Tronics – Kolkata, West Bengal.					
Total investment, Rs.: 0.70 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 0.49 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	18.00				
Energy consumption after	0				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Capacity Utilisation of HP Shower Pump of Paper Machine No. 4		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Indigenous			
<p>Description of the energy conservation measure: This was an outcome from Employees TPM activities in PM1 later on shared with Paper Machine No.4 TPM Team This Pump was also a new pump replaced in the year 2004 for energy savings but the observation was similar that of PM1 i.e there was still a valve throttling of more than 15%. The TPM team came up with a fantastic idea of contacting the manufacturer – M/S KSB and sought their intervention to reduce one disc out of the multistage pump to reduce its energy consumption as well as minimize the throttling required. The same was carried out In-House after getting a technical clearance from the Manufacturer – M/S KSB that the same will not affect the performance of the pump.</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 Expertise.						
Total investment, Rs.: 0.00 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 0.06 Lakhs						
First year other savings, Rs.: n.a						
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other	
Energy consumption before	168.20					
Energy consumption after	166.19					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8					
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature		
				Date		


Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of Slip Ring Motor of PM1 Hydropulper No. 2, 125HP, with Super Efficient Motor.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Imported			
Description of the energy conservation measure: Continuous focus was given in analyzing the health and efficiencies of existing Motors in the Plant, out of which this was one of the motors having very low efficiency 89.5% as per IEC Method 2 was replaced with Super Efficient BALDOR Motor from USA having 97.2% efficiency (as per IEC Method 2). The MOC and Design of these Super-E Motors are patented by BALDOR for yielding higher efficiency.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
						
Agency that executed the project (with complete address and email): Motor Manufacturer – BALDOR Electric, Indian Office at Pune.						
Total investment, Rs.: 6.67 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 1.60 Lakhs						
First year other savings, Rs.: n.a						
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other	
Energy consumption before	804.47					
Energy consumption after	747.50					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8					
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature		
				Date		


Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of Paper Machine No.3 Separator No.3 Condensate Pump with Energy Efficient Vertical Pump.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Imported			
Description of the energy conservation measure: This was an outcome from Employees Brainstorming Session – The old pumps (Main / Standby) of Separator No. 3 had turned inefficient both from energy as well as their respective , low NPSH. Incorporated “Grundfos” Make “CRN 1-6” pump with mechanical seals and are designed to operate at condensate temperature of 150 Deg.C. Incorporated after success of Separator No.1 Trial. We have considered savings based on the difference of Motor rating that is 5.5kW earlier motor, Now we are having Grundfos make 1.5kW Motor.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
						
Agency that executed the project (with complete address and email): Pump & Motor Manufacturer – M/S Grundfos . Project Executed In-House.						
Total investment, Rs.: 2.70 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 0.78Lakhs						
First year other savings, Rs.: n.a						
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other	
Energy consumption before	38.42					
Energy consumption after	10.42					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8					
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature		
				Date		



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Introduction of On-Lin Flue Gas / Oxygen Analyser in “IBIL” Boiler.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: Oxygen is required for combustion in the boiler. Less oxygen will lead to the incomplete combustion where the excess oxygen will lead to wastage of heat. So the monitoring of excess oxygen present in the flue gas before economiser was useful for the optimisation of combustion control thus saving a quantum the of fuel COAL. TAI Make Zirconia Analyser Model No. 9060H with 20" probe for O2 measurement was used. Supplied by Tata Honeywell.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
No Analyser earlier.					
Agency that executed the project (with complete address and email): Tata Haneywell – Hyderabad.					
Total investment, Rs.: 7.79 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 20.00 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after		-1017			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...		1967			
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Installation of Solar Photo Voltaic Cell “Power House” for Periphery Lighting System.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: As a step forward in harnessing the Renewable Energy Resources our team of experts have implemented a Photo Voltaic Solar Power Cell System with a contemporary inverter cum battery charger module rated 1000VA for periphery lighting around the Mill Dispensary. The system consists of Six sets of PV Cells with a battery backup of 14 hours.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
No Solar PV Cell earlier.					
Agency that executed the project (with complete address and email): “SHARP” Make PV Cells supplied by GP Tronics – Kolkata.					
Total investment, Rs.: 3.50 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 0.10 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	3.942				
Energy consumption after	0				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of PM3 Tri-Disk Refiner No.1 Motor with Super Efficient Motor of 160kW.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Imported			
Description of the energy conservation measure: A Constant effort in analyzing the weaker efficient motors of the Mill has paved the way to this idea of identifying this Tri-Disk 160kW Motor, around 20 years old NFEF make, rewinded a couple of times and was having an efficiency of 90% (as per IEC Method). We had selected Siemens Germany Make Super-Efficient Motors of similar rating having 95.90% efficiency (as per IEC Method) . Replaced the same and saved energy to the tune of 0.68 Lakh kWh per year.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): Siemens					
Total investment, Rs.: 5.10 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 1.90 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	987.315				
Energy consumption after	919.31				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Capacity utilization of Very High Pressure Shower Pump of PM3.		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Indigenous		
Description of the energy conservation measure: This was an outcome from Employees TPM activities in PM1 later on shared with Paper Machine No.3 TPM Team This Pump was also a new pump replaced in the year 2004 for energy savings but the observation was similar that of PM1 i.e there was still a valve throttling of more than 28%. The TPM team came up with a fantastic idea of contacting the manufacturer – M/S KSB and sought their intervention to reduce one disc out of the multistage pump to reduce its energy consumption as well as minimize the throttling required. The same was carried out In-House after getting a technical clearance from the Manufacturer – M/S KSB that the same will not affect the performance of the pump.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): In-House Initiative.					
Total investment, Rs.: 0.00			Year of implementation: 2006		
First year energy cost savings, Rs.: 0.10 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	238.20				
Energy consumption after	234.20				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of existing Drilled Bronze Suction Pick-up Shell with Contemporary "3Re60" Duplex Stainless Steel Shell for nip pressure improvement.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Imported			
Description of the energy conservation measure: The old drilled phosphor bronze shell was limiting the nip pressure increase required in the Suction Pickup due to its age and also from the material of construction point of view. Currently shells made of duplex quality stainless steel which is superior to bronze in respect of strength and anticorrosion properties. Also duplex stainless steel being stronger, can withstand higher nip pressure. We selected a vendor who fabricates the shell from a plate, thereby distribution of material composition are uniform. This technology is superior to conventional centrifugal casting where the distribution of material composition varies from inside to outside to some extent. Metso, offered the shell in "3Re60" Duplex Stainless Steel, which in one of the best material for this application. Higher Nip Pressure was instrumental in reducing the post Nip Moisture Content and thus achieving a reduction in Steam Consumption for the Paper Machine No.3.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): METSO – Finland.					
Total investment, Rs.: 58.72 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 7.13 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after		-362.49			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...		1967			
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	


Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of Paper Machine No.3 Separator No.4 Condensate Pump with Energy Efficient Vertical Pump with Mechanical Seals.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Imported			
Description of the energy conservation measure: This was an outcome from Employees Brainstorming Session – The old pumps (Main / Standby) of Separators in PM3 had turned inefficient both from energy as well as their respective , low NPSH. Incorporated “Grundfos” Make “CRN 1-6” pump with mechanical seals and are designed to operate at condensate temperature of 150 Deg.C. Incorporated after success of Separator No.3 Trial. We have considered savings based on the difference of Motor rating that is 5.5kW earlier motor, Now we are having Grundfos make 1.5kW Motor.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
						
Agency that executed the project (with complete address and email): Pump & Motor Manufacturer – M/S Grundfos . Project Executed In-House.						
Total investment, Rs.: 2.70 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 0.78Lakhs						
First year other savings, Rs.: n.a						
On annual basis		kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before		38.42				
Energy consumption after		10.42				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...		2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504					We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy					Signature	
					Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of PM3 Tri-Disk Refiner No.2 ,160kw, Motor with Super Efficient Motor.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Imported			
Description of the energy conservation measure: A Constant effort in analyzing the weaker efficient motors of the Mill has paved the way to this idea of identifying this Tri-Disk2, 160kW Motor, also around 20 years old NFEF make, rewinded a couple of times and was having an efficiency of 88.9% (as per IEC Method). We had selected Siemens Germany Make Super-Efficient Motors of similar rating having 95.90% efficiency (as per IEC Method) . Replaced the same and saved energy to the tune of 0.59 Lakh kWh per year.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Siemens					
Total investment, Rs.: 5.12 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 1.65 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	916.23				
Energy consumption after	857.08				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	

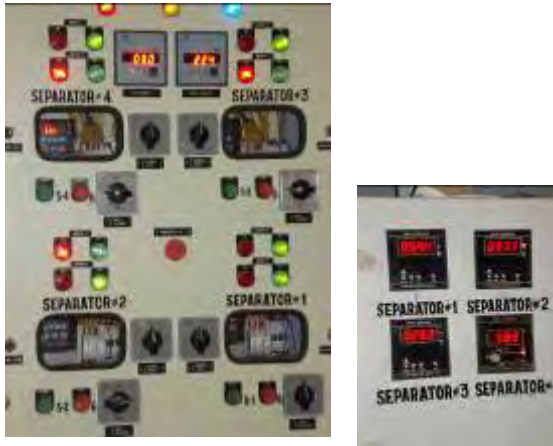
Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Incorporation of low loss 100kVA Dry Type Transformer in Lighting Circuit of Godowns and Street Lighting.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: This was an outcome from various lighting system energy optimization trials undertaken time to time at our mills. The basic option was to have a lighting voltage maintained as per lighting luminaries specification i.e 220volt at 50Hz. We not only save the life expectancy of the lamps and luminaries but also reduce losses incurred on account of over voltages beyond the specified limit. Thus our in-house team of experts arrived at a conclusion of selecting a very efficient and reliable dry type transformer which can be used for the purpose. We selected and incorporated an m/s "Universal Magnetics" Make Dry Type Transformer (Corporate EHS Approved) 100kVA, 3.5% Impedance, 415/415V AC, Dyn11, 3 Phase, 50Hz, with +/-2.5%, +/-5% taps, AN Cooled as per IS 11171-1985, Insulation Class "C". Thus gaining on energy consumption of the lighting system for Raw Material Godown and Street Lighting System without compromising on the illumination level also important from Occupational Health Point of View.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
No lighting transformers.					
Agency that executed the project (with complete address and email): Universal Magnetics – Kolkata.					
Total investment, Rs.: 3.00 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 0.28 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	463.19				
Energy consumption after	453.33				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504 Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				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 Replacement of Inefficient Vacuum Pump in PM3 with KVM600 Efficient Pump for Flat Box Vacuum.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Indigenous			
Description of the energy conservation measure: The old Utmal 10E Pump was replaced with a KAKATI Make KVM600 Vacuum Pump with optimally designed Speed to suit the best operating point for Paper Machine No.3 Flat Box. The result was a 0.63 lakh units savings per annum, in terms of electrical energy. The other tangible benefits but not quantified herein were improvement of vacuum control on the Wire Part.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
						
Agency that executed the project (with complete address and email): KAKATI INDUSTRIES – Hyderabad.						
Total investment, Rs.: 5.20 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 1.75 Lakhs						
First year other savings, Rs.: n.a						
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other	
Energy consumption before	252.29					
Energy consumption after	189.20					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8					
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature		
				Date		



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Incorporation of Variable Speed Control of Condensate Pumps of PM3 through Automatic Separator Level Control.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
<p>Description of the energy conservation measure: On replacing the separator pumps with energy efficient pumps our team of experts came up with this innovative idea of incorporating level control based variable speed control for the four separator pumps instead of old practice of throttle control with a pneumatic control valve. This project aimed at both improving electrical energy consumption through VFD and also higher condensate return thus achieving thermal energy savings. The higher condensate return was envisaged for the low leakage and consistent smooth operation of the VFD control instead of full RPM of the Pumps. The project required incorporation of specific type of level controllers in addition to existing controllers so as to implement a non-drying of the separator pumps by ensuring pump runs only with condensate available.</p>					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
No VFD and level control earlier.					
Agency that executed the project (with complete address and email): VFD by Rockwell, idea and installation In-House expertise.					
Total investment, Rs.: 3.00 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 8.50 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	51.86				
Energy consumption after	46.67	-424.92			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8	1967			
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure <b style="color: blue;">Incorporation of low loss 50kVA Dry Type Transformer in Lighting Circuit of Effluent Treatment Plant.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Indigenous			
Description of the energy conservation measure: This was an outcome from various lighting system energy optimization trials undertaken time to time at our mills. The basic option was to have a lighting voltage maintained as per lighting luminaries specification i.e 220volt at 50Hz. We not only save the life expectancy of the lamps and luminaries but also reduce losses incurred on account of over voltages beyond the specified limit. Thus our in-house team of experts arrived at a conclusion of selecting a very efficient and reliable dry type transformer which can be used for the purpose. We selected and incorporated an m/s "Universal Magnetics" Make Dry Type Transformer (Corporate EHS Approved) 50kVA, 3.5% Impedance, 415/415V AC, Dyn11, 3 Phase, 50Hz, with +/-2.5%, +/-5% taps, AN Cooled as per IS 11171-1985, Insulation Class "C". Thus gaining on energy consumption of the lighting system for ETP Lighting System without compromising on the illumination level also important from Occupational Health Point of View.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
No lighting transformers.						
Agency that executed the project (with complete address and email): <b style="color: blue;">Universal Magnetics – Kolkata.						
Total investment, Rs.: <b style="color: blue;">2.00 Lakhs			Year of implementation: <b style="color: blue;">2006			
First year energy cost savings, Rs.: <b style="color: blue;">0.14 Lakhs						
First year other savings, Rs.: <b style="color: blue;">n.a						
On annual basis		KWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before		224.82				
Energy consumption after		219.80				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...		2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504					We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy					Signature	
					Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of Old Consistency Transmitter with Rotary Type Transmitter of Higher accuracy in PM1 Softwood Circuit.		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Imported		
Description of the energy conservation measure: To get better performance and accuracy in the soft wood consistency circuit, the existing old transmitter was replaced by BTG rotary type transmitter. The old transmitter was not sensitive enough to cater to precise porosity control and hence was affecting quality in terms of rejections thus leading to lower productivity. This transmitter controls the consistency of the fibres which controls the furnish of PM1 stock. So, variation in the furnish due to variation of consistency causes variation in the product. The BTG consistency transmitter will measure highly accurate and sensible for 0.001% consistency irrespective of the change in furnish, fillers grades and flow rate.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Manufacturer is BTG Pulp & Paper Sensors, Sweden. Conceived In-House.					
Total investment, Rs.: 11.98 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 3.54 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after	-93.00	-48.50			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8	1967			
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of PM3 Hydropulper 200kw Motor with Super Efficient Motor of 200kW.		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Imported		
Description of the energy conservation measure: Also an outcome from constant effort in analyzing the weaker efficient motors of the Mill has paved the way to this idea of identifying this Hydropulper, 200kW Motor, rewinded twice and was having an efficiency of 87.85% (as per IEC Method). We had selected Siemens Germany Make Super-Efficient Motors of similar rating having 95.60% efficiency (as per IEC Method) . Replaced the same and saved energy to the tune of 0.041 Lakh kWh per year.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Siemens					
Total investment, Rs.: 6.00 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 1.15 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	840.96				
Energy consumption after	800.08				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of Two-Way Vacuum Control Valve with Three Way Control Valves as per VOITH Recommendations in PM1 Wire Box Vac System.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Imported			
Description of the energy conservation measure: The old control valve was a normal globe type two way Fisher Xomox make Valve. This conventional wire box vacuum control system lead to small vacuum fluctuation and hence unstable vacuum in wire box. M/s Voith , during their PM1 audit suggested Three Way Type of vacuum control valve to reduce fluctuation. The installation of this new IEVA-Vacuum Control system Type PN-PLS valve helped in eliminating vacuum fluctuations in wire boxes, which likely to improve porosity variation and thus reduce rejections by 1%. This has resulted in reduced specific energy and steam consumption in PM1.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
						
Agency that executed the project (with complete address and email): IBS Control Systems.						
Total investment, Rs.: 12.00 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 1.74 Lakhs						
First year other savings, Rs.: n.a						
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other	
Energy consumption before						
Energy consumption after	-46.00	-24.47				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.8	1967				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature		
				Date		



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Modifications of PM4 Beater Dump Chest Agitation with Side Entry Agitator and Replacement of Pump to attain energy savings in PM4 Refining System.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Indigenous			
Description of the energy conservation measure: The old refiner dump chest had no provision for agitation of the stock. The stock was pumped out from the chest and was passed through the refiners. After refining the stock used to come back into the chest. This cycle continued till the stock attained the desired degree SR. Due to the absence of agitation of the stock consistency entering the refiner varied. The entire process was identified as an inefficient one due to loss of energy in excess batch time of refining to attain the required "freeness", inefficient agitation process and pump. The M&V of savings was done only for a prime grade which runs for 120 days a year. The old circulation and feed pump were taken out. The horizontal chest was modified to suit the installation of side entry agitator as well the mid-feather was rectified so that entire stock can be utilised. A side entry agitator was installed for uniform agitation, MP-7 type locally fabricated and refiner feed pump was replaced with a "APP-GC-32-100,H - 27 M" Model KSB Pump.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
						
Agency that executed the project (with complete address and email): Pump by KSB, rest locally fabricated.						
Total investment, Rs.: 10.00 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 1.60 Lakhs						
First year other savings, Rs.: n.a						
On annual basis		kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before		108.00				
Energy consumption after		51.00				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...		2.80				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504					We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy					Signature	
					Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of PM3 Moisture Sensor with “Hemiplus” Sensor.		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Imported		
<p>Description of the energy conservation measure: This was an outcome from the extensive focus on energy efficiency of the PM3 Team. It was identified that the old moisture sensor was not providing the correct moisture indication of paper. Poor moisture control resulted in substandard quality of paper and it is one of the major sources of roping and piping defects. Hence it was proposed to replace the sensor with a new one. ABB make Hemiplus moisture sensor to be installed in place of existing one.</p> <p>This resulted in reduction of finished paper rejections.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): ABB Sweden					
Total investment, Rs.: 27.98 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 3.95 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after	-110.30	-48.50			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.80	1967			
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Replacement of inefficient Air Circulators with High Efficient Ones – 18 Nos.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: This was an outcome from Employees Brainstorming Session – constant monitoring of sample fans and identification of high power consuming ones followed by a quantum requirement of 18 nos. to be replaced for inefficiency. All the air circulators are in the production areas serving the purpose of man coolers.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): ALSTOM Make Fans.					
Total investment, Rs.: 1.50 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 0.04 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	12.61				
Energy consumption after	11.31				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.80				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Modifications (Phase-1) of Mill Wide Steam Distribution System from Boiler House to Respective Turbines & Paper Machines.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: m/s Forbes Marshall was engaged for their expertise in Steam Distribution to identify potential areas to attack for reducing the thermal energy consumption. A mill-wide extensive audit was conducted by m/s Forbes Marshall. Their recommendations in part was implemented as Phase-1 in 2006-07. The details of the same are as per their report enclosed with this booklet. The annual coal savings envisaged from this project is to the tune of 300 Metric Tonnes.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): Forbes Marshall					
Total investment, Rs.: 16.00 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 5.50 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after		-266.73			
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...		1967			
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination	
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure Incorporation of DUPLEX Filters in Shower Water Lines to Reuse Recycled White Water instead of Fresh Water.		Sector : Paper & Pulp		
Year to be filled by BEE			Technology: Indigenous		
Description of the energy conservation measure: Old filtration arrangement of fresh water line in PM3 for low pressure & high pressure showers were single filters with wire mesh causing jamming of showers when used in Recycled water line. Hence we installation duplex 50 micron filters for VHP applications, 150 micron filters for low pr. applications & 25 micron filters for dandy shower enabling proper cleaning of filters at regular intervals & consequently eliminate usage of fresh water. There has been water saving of 300 Cu.M/day in PM3 & 80 Cu.M/day in PM4.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): Kingsley Industries - Kolkata					
Total investment, Rs.: 14.16 Lakhs			Year of implementation: 2006		
First year energy cost savings, Rs.: 4.45 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before					
Energy consumption after	-159.00				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.80				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504 Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				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 <b style="color: blue;">Incorporation of Variable Frequency Drives for 3 Nos. Reelers in Finishing House 4.	Sector : Paper & Pulp			
Year to be filled by BEE		Technology: Indigenous			
Description of the energy conservation measure: The old inefficient system of eddy current drives were replaced with variable frequency drives having finer speed control systems with Allen Bradley Make 1336 PLUS II series. 2 Nos. 10HP and 1 No. 15HP Drives were replaced with Variable Frequency Drives.					
Picture/ sketch/ drawing before modification (if available)	Picture/ sketch/ drawing after modification				
					
Agency that executed the project (with complete address and email): Rockwell – AB Make – Shahibabad, UP.					
Total investment, Rs.: 4.83 Lakhs	Year of implementation: 2006				
First year energy cost savings, Rs.: 0.62 Lakhs					
First year other savings, Rs.: n.a					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	114.35				
Energy consumption after	92.27				
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.80				
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504 Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				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 Incorporation of Roof Top Wind Turbine Ventilators replacing 19 Nos. Exhaust Fans in PM3&4 Areas.		Sector : Paper & Pulp			
Year to be filled by BEE			Technology: Indigenous			
Description of the energy conservation measure: As per our earlier experience of Installing a few Wind Ventilators the in house team identified further areas for replacing 19 Nos. of such Exhaust Fans with roof top Wind Ventilators of Shreejee Make – Mumbai. These not only provided energy benefit but also improved the working environment of the Production floors.						
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification			
						
Agency that executed the project (with complete address and email): Shreejee Industries – Mumbai.						
Total investment, Rs.: 5.97 Lakhs			Year of implementation: 2006			
First year energy cost savings, Rs.: 2.45 Lakhs						
First year other savings, Rs.: n.a						
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other	
Energy consumption before	87.60					
Energy consumption after	0.00					
Energy tariff, Rs/ kWh/ Ton/ Nm ³ / kL ...	2.80					
Company complete address: ITC Limited, Paper Boards & Specialty Papers Division, Unit-Tribeni, Chandrahati, Dist: Hooghly, West Bengal - 712504				We authorise Bureau to use this information for dissemination		
Contact person who could be contacted for more information: Mr. Sunil Ghosh – Senior Manager Energy				Signature		
				Date		