



Ballarpur Industries Limited
Unit -Bhigwan

Unit - Bhigwan



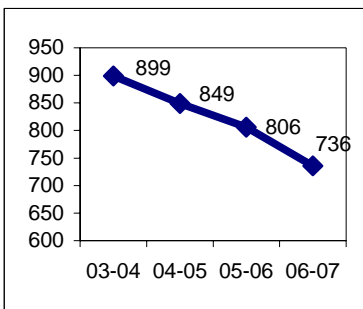
Ballarpur Industries Limited, unit Bhigwan located at village Bhadalwadi, Taluka Indapur, Dist. Pune, Maharashtra. Unit is ISO 9001: 2000, ISO 14001: 2004 and OSHAS 18001 certified. It is one of the largest state-of-the-art Paper Mill, with a capacity to manufacture 1,15,000 tpa of coated wood free paper of various grades based on 100% imported pulp. The company is within 100 top companies of the world.

Unit profile

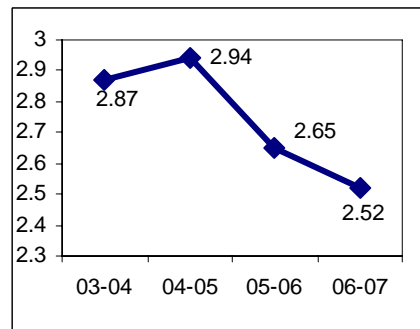
Energy Consumption

With consistent effort and sustained focus on Energy consumption, its controlled use, analysis and implementation of various energy consumption projects, BILT's energy performance is improving continually.

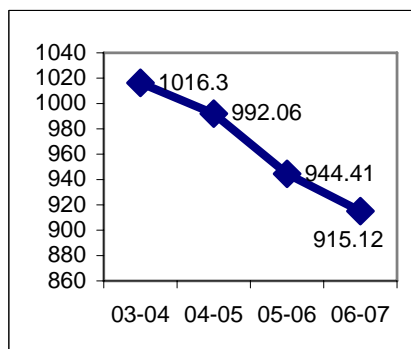
**Specific Electric Energy
Consumption KWH/T**



**Specific Steam
Consumption Ton /T**



**Absolute
Consumption KWH**



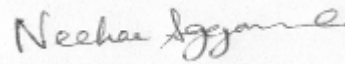
Energy conservation Commitment, Policy and Set Up

We at BILT are committed for effective energy utilization. Our Energy Policy, Energy cell set up, energy monitoring and reporting system, Implementation strategy etc. is detailed in point no. 13. In the year 2006 – 07, eleven major energy saving projects are implemented. The investment made is Rs 55.09 Lacs resulting in total saving of around Rs 150.53 lacs.

: ENERGY POLICY:

We, Ballarpur Industries Limited - Unit Bhigwan, manufacturer of coated paper are committed to provide

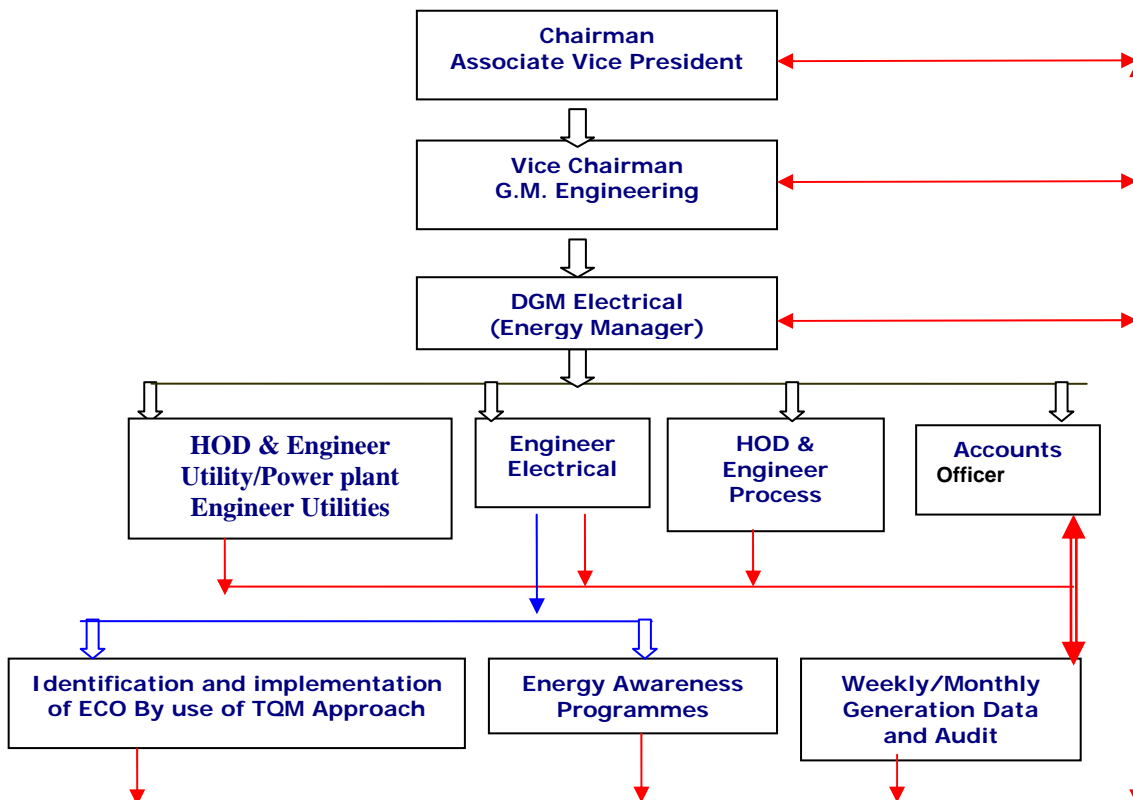
- ❖ Continual improvements in our working to maximize efficiency and achieve resource conservation like water, power, steam, air, oil and coal.
- ❖ Operate reliable processes and reduce cost through efficient use of energy resources / renewable energy sources.
- ❖ To ensure that all statutory rules and regulation related to energy management are followed.
- ❖ To minimize the waste generation and disposal in enviro – friendly way
- ❖ Create a participative, motivating and challenging environments amongst our employees to strive for highest degree of energy conservation and achieve national / international Benchmark.



June 10, 2004

Neehar Aggarwal
(Sr. Vice President – Operations)

Energy Conservation Cell Set Up



The summary of some of the energy conservation projects is as below:

1. Installation of Variable Frequency Drives (4Nos)



Annual Savings: Rs 10.92 Lacs
Investment: Rs 9.09 Lacs

2. Installation of Energy Efficient Pump



Annual Savings: Rs 0.867 Lacs
Investment: Rs 1.50 Lacs

3. Installation of Energy saver



Annual Savings: Rs 1.44 Lacs
Investment: Rs 2.10 Lacs

4. Installation of Solar water system



Annual Savings: Rs 1.38 Lacs
Investment: Rs 5.40 Lacs

5. Optimization of IR Drying power consumption and Up gradation of tension control system



Annual Savings: Rs 93.88 Lacs
Investment: Rs 17.00 Lacs

Safety and Environment

Safety

BILT- Bhigwan's main objective is to attain zero accident. We are having safety policy in our plant. There is separate safety department, taking care for ensuring the safe operation of the plant. Safety ambassador from each dept. are the member of the safety team. Safety ambassador presents the progress to Unit Head in Safety meetings where various types of functional and Cross-functional aspects are addressed. Safety Slogan & Safety Poster Competitions are arranged every year and best ones are rewarded. Due to all these efforts in the safety fields, we have been awarded OHSAS 18001 certification. Our Company has won Green-tech Golden safety award in the year 2003-04, 2004-05 & 2005 -06. This year Company has also won "Safety Innovation Award –2007" and awarded excellence in safety at national level.



**Safety Innovation
Award 2006,07**



**Green Tech Safety Gold
Award 2004,05,06**

Environment:

BILT, Bhigwan is committed to protect environment through its sound environment policy and activities. With the help of our five-stage state of the art Effluent Treatment Plant, as well as through better waste management practices, we ensure enviro friendly disposal of waste. Our efforts are rewarded at national level.



**Green Tech Environment
Award 2007**



**Green Tech Environment
Award 2004 -06**

BILT has installed a bricks manufacturing plant from boiler ash at unit Bhigwan (commissioning under progress). BILT Bhigwan will be zero discharge unit after the commission of this plant. ETP sludge is burnt in boiler, ETP water & boiler ash will be used for bricks manufacturing.

Energy Awards and Recognition :



MEDA Energy Award -04



MEDA Energy Award-05



CII Award -02,06



BEE Energy Award -06

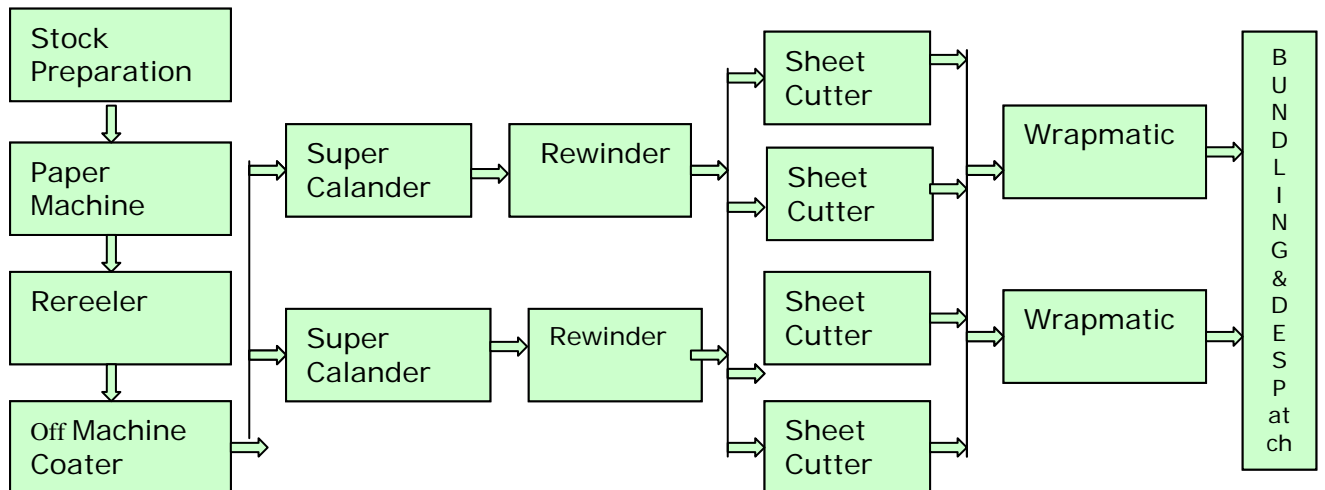


BEE Energy Award -05

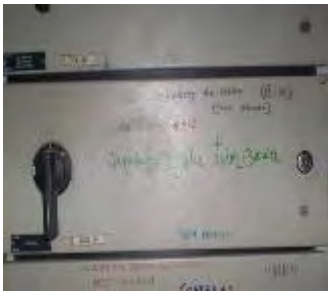

Plant View:





Simple schematic diagram of the production process along with view of plant




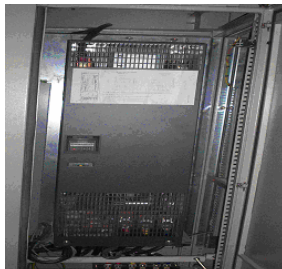
9.0	Energy Consumption and cost	2004-05	2005-06	2006-07
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ID to be filled by BEE	Title of the measure		Sector: Pulp and Paper		
Year to be filled by BEE	1.Installation of VFD at Jagenberg Re-reeler Suction Blower motor (15 KW)		Technology: Energy Saving		
Description of the energy conservation measure:					
Application: Suction Blower					
The motor was running through DOL starter on fixed rpm. Installed the VFD for trial purpose, and established the minimum blower speed with re reeler can run with out any impact on its performance. After trial Installed new 18.5 KW VFD on blower.					
It is observed that motor is running with in the range of 37-44 Hz for different grade of paper.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): In-house team					
Total investment, Rs.: 1.0 Lakh			Year of implementation: 2006-07		
First year energy cost savings, Rs.:0.24 Lacs					
First year other savings, Rs.: Nil					
On annual basis	KWh	Coal (Tons)	Gas Nm³	Oil (kL)	Other
Energy consumption before	16800				
Energy consumption after	9700				
Energy tariff, Rs/ kWh	3.44				
Company complete address:				We authorise Bureau to use this information for dissemination	
Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist: - Pune (Maharashtra) Contact person: Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure		Sector: Pulp and Paper		
Year to be filled by BEE	2.Installation of VFD at Jagenberg Re-reeler Trim motor (30 KW)		Technology: Energy Saving		
<p>Application: Trim suction blower The damper was closed by 20-25%. In order to save the throttling losses, VFD is Installed on blower. The damper was opened 100% and flow was controlled through the variable frequency drive by rpm control.</p> <p>It is observed that motor is running with in the range of 35-40 Hz for different grade of paper.</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 team					
Total investment, Rs.1.97 Lacs			Year of implementation: 2006-07		
First year energy cost savings, Rs.: 2.02 Lacs					
First year other savings, Rs.: Nil					
On annual basis	KWh	Coal (Tons)	Gas Nm³	Oil (kL)	Other
Energy consumption before	184800				
Energy consumption after	125936				
Energy tariff, Rs/ kWh	3.44				
Company complete address: Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist:- Pune(Maharashtra) Contact person: Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				We authorize Bureau to use this information for dissemination Signature Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure		Sector: Pulp and Paper		
Year to be filled by BEE	3. Installation of VFD at Paper machine 2 degree wet end exhaust fan motor (90 kw)		Technology: Energy Saving		
<p>Application: Paper machine wet end Two degree wet end motor of 90 kw installed at our Paper machine hood system (used to remove the moisture of wire-part). New 110 KW VFD is installed on motor to remove the moisture as per paper GSM. It is observed that instead of running the motor on 50 Hz, motor is running in between 40 to 45 Hz with 100% damper open to reduce the throttling losses.</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 team					
Total investment, Rs.5.12 Lacs			Year of implementation:2006-07		
First year energy cost savings, Rs.:7.22 Lacs					
First year other savings, Rs.: Nil					
On annual basis	KWh	Coal (Tons)	Gas Nm³	Oil (kL)	Other
Energy consumption before	630000				
Energy consumption after	414857				
Energy tariff, Rs/ kWh	3.44				
Company complete address: Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist: - Pune (Maharashtra) Contact person: Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				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		Sector: Pulp and Paper		
Year to be filled by BEE	4. Installation of VFD at Paper machine one degree pre-drier exhaust fan motor (15 KW)		Technology: Energy Saving		
<p>Application: PMC hood & ventilation blower</p> <p>Motor of 15 kw capacity installed for paper machine hood and ventilation system.. The damper of the exhaust fan closed by 15-20%. In order to save the throttling losses, a new 18.5 KW VFD is Installed on blower. It is observed that instead of running the motor on 50 Hz, motor is running on 40-45 Hz .</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 team					
Total investment, Rs 1.00 Lacs			Year of implementation:2006-07		
First year energy cost savings, Rs.:1.44 Lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	100800				
Energy consumption after	58474				
Energy tariff, Rs/ kWh	3.44				
<p align="center">Company complete address:</p> <p>Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist:- Pune(Maharashtra) Contact person: Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423</p>				<p>We authorise Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date</p>	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure		Sector: Pulp and Paper		
Year to be filled by BEE	5. Installation of Beblec Power Saver in the lighting circuit of work-shop		Technology: Energy Saving		
<p>Workshop Lighting was given through the 415 Volt MCC. There was no separate lighting transformer for the workshop lighting supply. The Beblec power saver having the property of lighting transformer installed for the workshop area lighting. Instead of 425 volt, at present lighting fixtures are charged with 380 volt supply resulting into substantial amount of energy saving.</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 team					
Total investment, Rs 2.10 Lacs			Year of implementation: 2006-07		
First year energy cost savings, Rs.: 1.44 Lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	96600				
Energy consumption after	54600				
Energy tariff, Rs/ kWh	3.44				
Company complete address: Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist: - Pune (Maharashtra) Contact person: Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				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 6. Installation of Solar water Heating System in B-Colony	Sector: Pulp and Paper			
Year to be filled by BEE		Technology: Energy Saving			
<p>Presently in our B-Colony water heating was done through Electrical heaters of 2 kw in each room. There are 48 rooms in the hostel equipped with electrical heaters. This energy consumption can be reduced by installing solar water heaters. After implementation it is found that Solar water heating system of 3000 Liter successfully installed and put in operation resulted the saving of energy consumption.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): In-house team					
Total investment, Rs 5.40 Lacs			Year of implementation:2006-07		
First year energy cost savings, Rs.: 1.38 Lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	40000				
Energy consumption after	0				
Energy tariff, Rs/ kWh	3.44				
Company complete address: Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist: - Pune (Maharashtra) Contact person: Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				We authorize Bureau to use this information for dissemination Signature Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure		Sector: Pulp and Paper		
Year to be filled by BEE	7 & 8: Up-gradation of analog type tension controller and optimization of color % solids in Off machine coater		Technology: Energy Saving		
Description of the energy conservation measure: In Off machine coater coating is applied on paper. To dry the paper Electrical IR dryer is used. IR drying requirement is reduced by increasing the % solids by @ 1 to 1.5 percent in coating color. For effective and quality coating web tension plays an important role. Due to tension problem, web movement was taking place causing the paper break. During paper break machine use to run for cleaning (non productive running). Upgraded the old tension control system with the new digital tension control system. This has eliminated tension problem completely and ensured stable running of the coater. The combined effect of both the projects has resulted in overall energy saving of Off machine coater and coated paper production is also increased.					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): In-house team					
Total investment, Rs 17.0 Lacs			Year of implementation: 2006-07		
First year energy cost savings, Rs.: 93.88 Lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh	Steam (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	17818050				
Energy consumption after	15088725				
Energy tariff, Rs/ kWh	3.44				
Company complete address: Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist:- Pune(Maharashtra) Contact person: Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				We authorize Bureau to use this information for dissemination	
				Signature	
				Date	



Energy Conservation Measure implemented in 2006-2007

ID to be filled by BEE	Title of the measure		Sector: Pulp and Paper		
Year to be filled by BEE	9. Increase of productivity due to auto-cocking in Paper machine		Technology: Energy Saving		
<p>Our machine has Tri nip press followed by 4th press. We were facing the problems of vibration and less felt life. To increase the felt life earlier manual cocking of 4th press felt was done. Motor of 0.12 kw with DOL starter was used for this purpose. When the motor is actuated the felt stretcher skews little and seam position of the felt changes. Installed the VFD, load cells and auto felt tension control system. The impact of this project is that the vibrations are reduced, machine run ability at higher speeds increased by around a day per felt. Felt life is increased by @ 2 days. Press loadings are also increased. There by paper dryness improved and draw rates increased. Over all impact of the project is visible form the fact that the finished production is increased by around 7000 T with almost same energy consumption.</p>					
Picture/ sketch/ drawing before modification (If available)			Picture/ sketch/ drawing after modification		
					
Agency that executed the project (with complete address and email): In-house team					
Total investment, Rs 20.0 Lacs			Year of implementation: 2006-07		
First year energy cost savings, Rs: Not considered the benefits as direct energy saving, productivity improved. Reduced energy intensity of the product.					
First year other savings, Rs.: Nil					
On annual basis	kWh	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	NA				
Energy consumption after	NA				
Energy tariff, Rs/ kWh	NA				
Company complete address: Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist:- Pune(Maharashtra) Contact person : Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				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 10_Optimization of the Centralized compressed air System	Sector: Pulp and Paper			
Year to be filled by BEE		Technology: Energy Saving			
<p>We are having three No of screw compressor of 450 KW to give the instrument and service air for entire plant .We have found the air leakages in the system. Arrested the leakages and plugged wherever possible. We have also reduced the pressure of the set point of compressor from 7.0 kg/cm2 to 6.5 kg/cm2. It has resulted in stoppage of third compressor, which in turn has saved substantial amount of energy.</p> <p>Presently one compressor is running on load and second compressor is running on loading-unloading mode. Third compressor is completely stopped without affecting the processes.</p>					
Picture/ sketch/ drawing before modification (if available)			Picture/ sketch/ drawing after modification (View of Air receivers & control panel)		
			 <p align="center">Controller</p>  <p align="center">Air receiver</p>		
Agency that executed the project (with complete address and email): In-house team					
Total investment, Rs 0.0 Lacs			Year of implementation:2006-07		
First year energy cost savings, Rs.:39.48 Lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm ³	Oil (kL)	Other
Energy consumption before	7367939				
Energy consumption after	6146014				
Energy tariff, Rs/ kWh	3.44				
Company complete address: Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist:- Pune(Maharashtra) Contact person : Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				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		Sector: Pulp and Paper		
Year to be filled by BEE	11. Installation of Energy efficient pump at paper machine condensate		Technology: Energy Saving		
<p>Two pumps of KBL make of 9.3 KW was running. The efficiency of the earlier pump was 30%. Proposal was made to install energy efficient pump of efficiency 77%. With this only one pump will run during lower GSM to run for 15 days. In addition to energy saving, maintenance cost also reduced.</p> <p>At present energy efficient pump is running with lower consumption and better efficiency in paper machine.</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 team					
Total investment, Rs 1.50 Lacs			Year of implementation:2006-07		
First year energy cost savings, Rs.:0.867 Lacs					
First year other savings, Rs.: Nil					
On annual basis	kWh 000'	Coal (Tons)	Gas Nm³	Oil (kL)	Other
Energy consumption before	71400				
Energy consumption after	46200				
Energy tariff, Rs/ kWh	3.44				
Company complete address: Ballarpur Industries limited, unit- Bhigwan 105 Milestone, Pune-Solapur Highway, Bhadalwadi, Paundhwadi, Near Bhigwan, Tal- Indapur, Dist:- Pune(Maharashtra) Contact person : Mr. Uday Kukde, DGM (Electrical) Ph. No.: 9422078423				We authorise Bureau to use this information for dissemination Signature Date	