

Unit profile

Ballarpur Industries Limited, unit Bhigwan (formerly known as Bilt Graphic Papers Ltd.) is an ISO 9000 & ISO 14001 company.

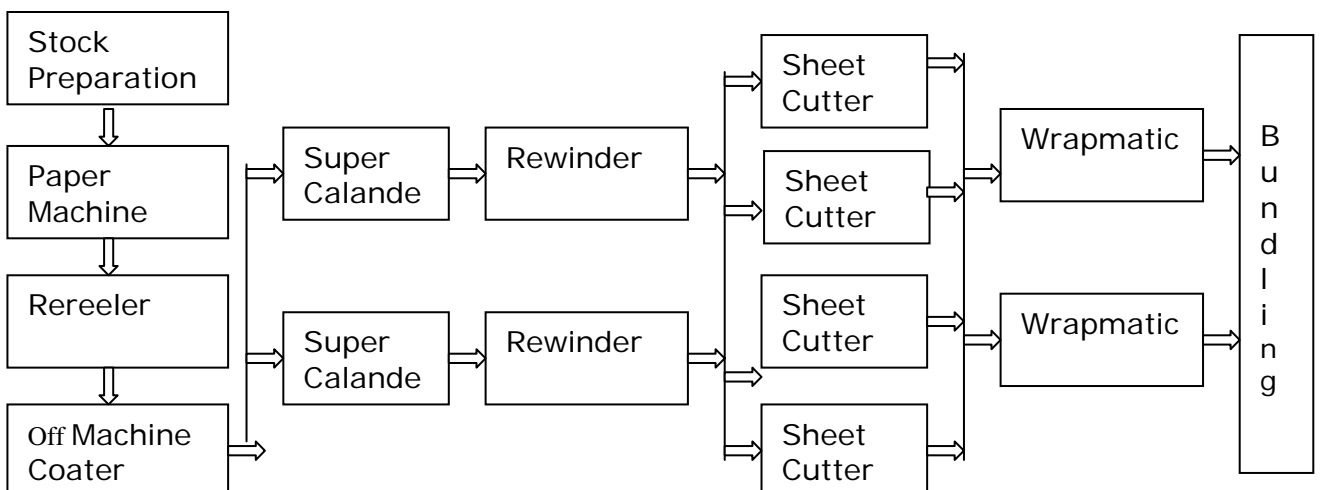
It is one of the largest state-of-the-art Paper Mill, with a capacity to manufacture 1,15,000 tpa of coated and speciality paper of various grades based on 100% imported pulp at village Bhadalwadi, Taluka Indapur, Dist. Pune, Maharashtra.

BILT Bhigwan Plant equipment includes :

- Stock preparation system supplied by Sunds Defibrator,
- Voith Sulzer paper machine with a deckle of 3.20 meters and 1000 m/min speed fitted with the most modern control system and an on-machine coater from BTG. The machine is equipped with QCS system and DCS system.
- Off machine Coater supplied by Jagenberg Germany. The base paper is processed through Jagenberg off-machine four-blade coater to produce superior quality papers. Quality is maintained through on line QCS system.
- Paper Finishing equipment like IHI Super calenders, two re-reelers, rewinders one each from Atlas and Jagenberg, three automatic synchrofly sheeters from Will Pemco and one from Jagenberg, automatic reel and ream wrapping machines supplied by FIS and Wrapmatic respectively.
- Fully equipped Quality Lab where quality parameters are monitored and controlled.

The total cost of project is 800 crores and the annual sales turnover of the company is around Rs.54720 lakhs including exports of power.

Process Flow Chart

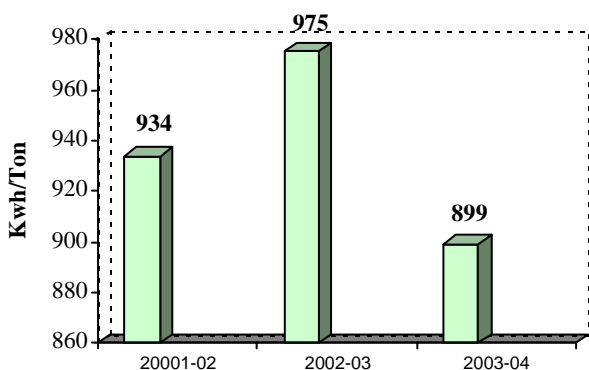


Energy Consumption

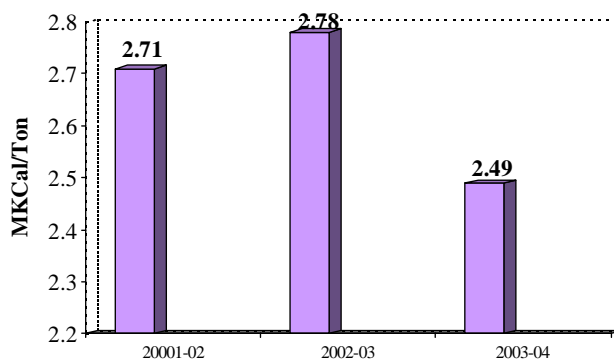
There is decrease in specific energy consumption of the plant by virtue of various measures of energy savings like installation of variable frequency drives, use of natural light, process logic modifications & R&D developments in the process like bio refining etc.

Description	Unit	2001-02	2002-03	2003-04
Annual production	MT	103696	102045	113102
Electrical Energy Consumption	Lakh KWH	968.06	994.47	1016.29
Specific Thermal Energy Consumption	Mkcal/Ton	2.71	2.78	2.49
Specific electrical Energy Consumption	Kwh/Ton	934	975	899

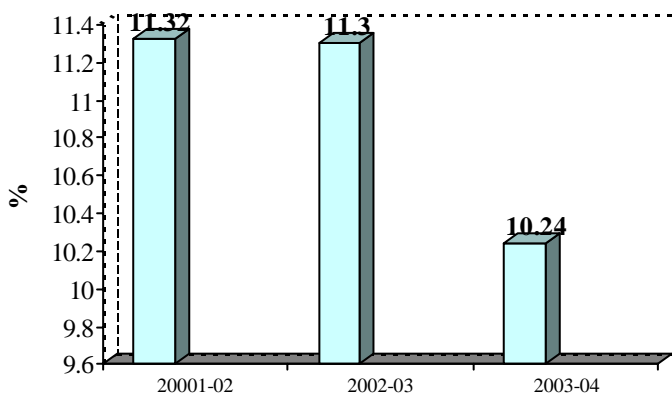
Specific Electrical Energy Consumption



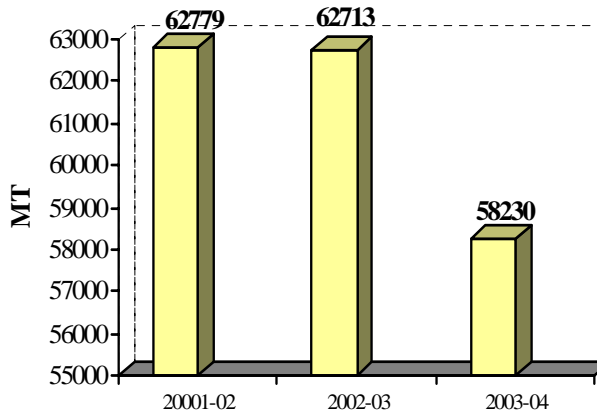
Specific Thermal Energy Consumption



Energy Cost as a % of Manufacturing



Coal Consumption



Initiatives taken (Thermal) -

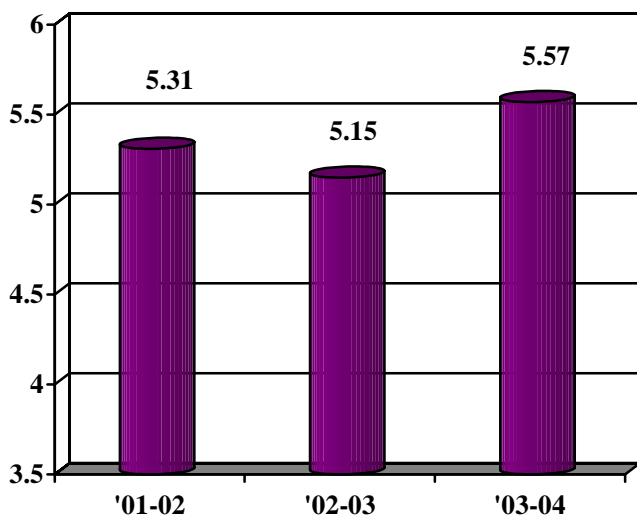
Coal blending ratio has been optimized.

Improvement in boiler efficiency by repairing of refractory

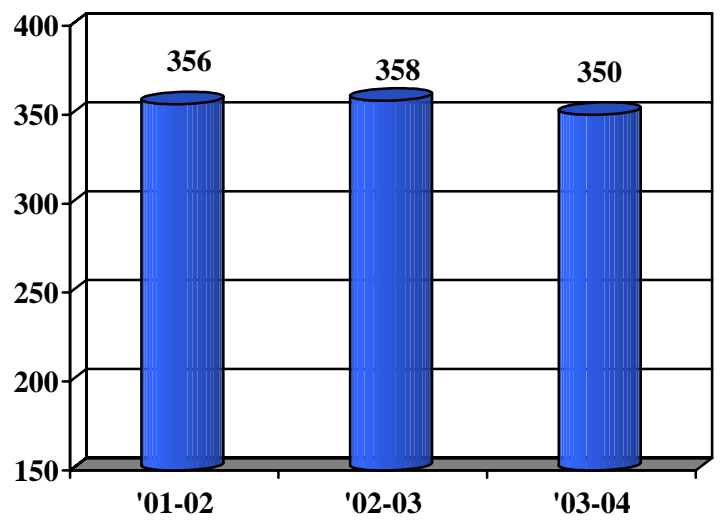
De-stoning and de-shelling of coal

This has resulted in substantial improvement in steam to coal ratio.

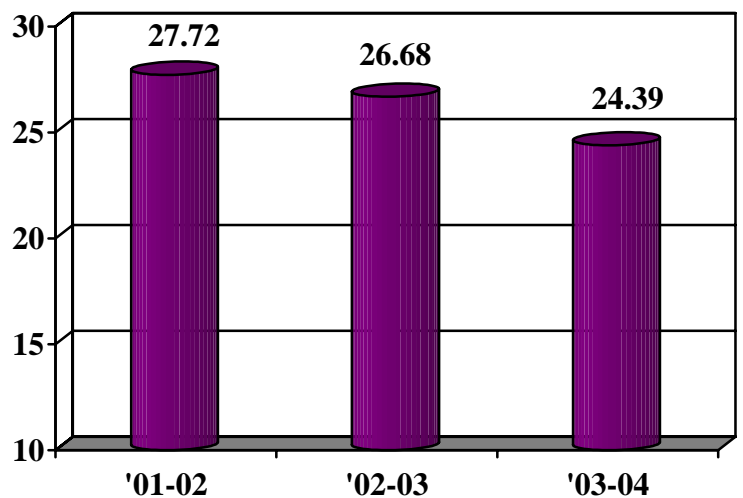
STEAM COST (Rs. Per Mt.)



STEAM GEN. (Mt.)/Mt Of Coal



WATER Cub.M. PERTON OF PAPER



Initiatives taken (Water) -

ETP discharge water is used for the floor, and tank Cleaning instead of fresh water.

Water is used judiciously and Leakage arrested from pipes and Flanges.

Press Water taps are provided in toilets.

Energy conservation Commitment, Policy and Set Up

BILT's top management is committed for improving energy efficiencies. A separate budget of Rs. 75 Lakhs for capital investment on energy conservation projects is sanctioned for the year 04-05. The Energy cell is functional to implement ECO's. Energy cell's Salient features, structure, Energy policy are mentioned in point 13. structure and The energy consumption and the variances are monitored in the monthly MIS reports & corrective action are initiated. Total 12 ECO are implemented in the plant.

Energy conservation achievements

Reduction of 35 KWH / ton and 0.22 MKCAL / ton over year 01-02 is achieved resulting in savings of Rs 138.23 Lakhs with investment of Rs 11.85 Lacs.

Future Plans for Energy Conservation

- Specific electrical energy consumption 860 Kwh / Ton by the year 05-06
- Specific thermal energy consumption 2.81 steam Ton / Ton year 2005-06
- The total investment of around Rs 162.5 lakhs is proposed for year 04-05, with expected payback of 1.5 years.
- Engage Energy consultant for energy audit and identifying ECO's

Safety and Environment

Safety

BILT- Bhigwan's main objective is attaining zero accident. Work Permit System for different types of jobs is in practice. Implementation of OHSAS 18001 in progress. Certification audit is expected in Dec 04. Safety ambassador from each dept. 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.

Our Company has won Green-tech Golden safety award in the year 2003-04.

Environment

BILT Bhigwan is committed for protecting environment through its sound environment policy and activities. A five-stage state of the art Effluent Treatment Plant, as well as waste management facilities ensures environment friendly disposal of waste. The mill re-circulate more than 70% of the water and is also developing a green belt in and around 700 acre site. The 30 MW power plant is equipped with its state of the art ESP which maintain all environmental norms for discharge of gases from the boiler. The company has been certified for ISO 14001.

We have voluntarily accepted limit of BOD & TSS 10 ppm each & COD of 120 ppm, which is much less than the prescribed legal limits. Furthermore we are maintaining above limits/even below 50% level.

Sludge handling system has been redesigned to avoid the impact on environment due to failure of sludge handling pumps with an investment of Rs 3.0 Lakhs. The ETP sludge is used as a fuel in a boiler.

Undertaking environment related Research & Developments.

Other major achievements :

- Vermi-composting started after doing R&D work on ETP sludge by Institute of Natural Organic Agriculture,(INORA) Pune, Pilot project is successfully completed plant scale trial is in progress.
- Plantation over fly ash disposal area also done. The growth of the trees is faster and better.
- We have laid a pipe ring-main of 10 km length for watering the plants (investment made Rs. 40 Lakhs.)
- 1 lakh 25 thousand plants are planted, with survival rate exceeding 95%.
- To demonstrate the quality of water to nearby farmers many crops like Sugarcane, Maize, Wheat, Sunflower and different type of vegetables are grown. Varieties of fruits bearing trees planted like Banana, Mango, Chiku, Grapes, Pomegranates, lemon, almond, guava, cherry, coconut etc. are planted.
- Fishes are kept in every stage after secondary clarification to demonstrate the quality of treated ETP water. It is a matter of pride that there is not only 100% fish survival in our ETP water but there is a sizable amount of multiplication.

21. Whether any dispute pertaining to statutory requirements of safety and pollution control is pending with any Government agency.

No

ENERGY CONSERVATION AWARD-2004

SUMMARY- SHEET

(Please summarize the information provided in the Questionnaire)

Unit Name – Ballarpur Industries Limited, Unit-Bhigwan, Sector: Paper

1 IMPLEMENTATION OF ENERGY CONSERVATION MEASURES & INVESTMENTS (S.NO-16 AND S.NO.9.3(I))					
A. No of measures implemented , investment made & savings achieved					
Year	No. Of Measures implemented (S.No.16) (I)	Investment made(S.No.16) (Rs Lakhs) (ii)	Savings achieved(S.No.16) (Rs Lakhs/yr.) (iii)	Energy Cost S.No.9.3(I) Rs Lakhs/year) (iv)	% Savings of Energy Cost (iii/iv*100)
2001-02	6	0.13	103.985	2664.85	3.90
2002-03	6	7.5	100.01	2888.84	3.46
2003-04	13	11.85	138.234	2674.35	5.17

2. Energy Savings (S.No.16,S.No.9.1C(a),S.No.10R(k), Absolute Savings						
Year	Elect. saving (Lakhs KWH) (S.No 16) (i)	Thermal Fuel Saving (MKCal) (S.No 16) (ii)	Elect. Consumption (Lakhs KWH) (S.No.9.1C (a) (iii)	Thermal Fuel Consumption (MKCal) (S.No 10 R(k) (iv)	%Elect Saving (i/iii)	% Thermal Fuel Saving (ii/iv)
2001-02	18.63	15536	968.06	281408	1.92	5.52
2002-03	27.32	11848	994.47	283946	2.75	4.17
2003-04	39.09	16483	1016.30	281489	3.85	5.85
Remarks (if any): NIL						

2.b. Specific Energy Consumption (SEC) Reduction during the period 2001-2004 (S.No.11)

Year	Product	KWH/MT	%reduction over2001-2002	MKCal/MT	% reduction over 2001-2002
2001-02	Paper	934	-	2.71	-
2002-03	Paper	975	(4.39)	2.78	(2.58)
2003-04	Paper	899	3.75	2.49	8.11
Remarks (if any) : Figure given above as per award questionnaire result.					

- or use actual units as requested in Note under Sr. No.11(I) in the case of Refinery ,Integrated steel plants ,Cement plants and Fertilizer .

2c. Specific Energy Consumption Comparison with National & International Best Values (S.No.12)			
		National/International Best	
Product	Figures for the Current Year (2003-2004)	National	International
Paper	Electrical- 875 kwh/Ton Thermal-1.95 MKCal/T	NA	N.A
Remarks (if any): **Benchmark not available as there is no identical unit available in India/Abroad, this information could not be provided in full.			

3. Annual Energy Savings and Annual Sales Turnover(Ref.S.No17)			
Year	Annual Energy Savings achieved(Rs Lakhs) (i)	Annual Sales Turnover(Rs Lakhs) (ii)	Annual Savings achieved/Annual Sales Turnover(in%) (i/ii)*100
2001-02	103.985	47215	0.220
2002-03	100.01	45677	0.219
2003-04	138.23	54720	0.253

4-Specific energy Consumption Target as Achieved during 2003-04(Ref S.No 19a)						
Planned target for 2003-04 (a)		Actual achieved in 2003-04 (b)		% Reduction(+) or Increase(-)(a-b)/a*100		Money Saved during 2003-04
KWH/Ton	Steam Ton/Ton	KWH/Ton	Steam Ton/Ton	Electrical	Thermal	Rs Lakhs
936	2.88	875	2.87	6.33	0.34	126.07

5-Planned Specific Energy Consumption Target for the year 2004-05 & 2005-06

Year	Electrical (kwh/Ton)	Thermal (Ton/Ton)-	Elect(%Reduction) Over year 2003-04	Thermal (%Reduction)
2003-04(Base Year)	875	2.87	-	-
2004-05	870	2.84	0.57	1.05
2005-06	860	2.81	1.71	2.1

EC Award 2004

Annexure-A

Summary of classified energy saving measures implemented during 2003-04 (Please tick mark (√) measures implemented in 2003-04 and provide consolidated information on investment incurred and the saving accrued in the year 2003-04)

(a) Retrofitting/Minor Modifications of existing equipment – Low investment options

- Retrofitting of low excess air oil/gas burners
- Modification of oil preparation and heating system
- Modification of coal screening and sizing system
- Installation of on-line flue gas analysers in boilers/furnaces
- Installation of on-line temperature measuring instruments
- Installation of on-line fuel oil/gas meters
- Replacement of defective steam traps
- Replacement of damaged/leaking condensate pipe lines/fittings
- Attending on steam leakages
- Replacement of damaged insulation of steam pipes/equipment/chilled water tanks
- Insulation of heated/cooled tanks, equipment, pipes, etc.
- Replacement of incandescent lamps/tube-lights with compact fluorescent lamps
- Replacement of damaged/leaking compressed air pipe lines
- Replacement of damaged/leaking chilled water pipe lines

Total Investment in 2003-04

2.0...(Rs.lakhs)

Total Money savings in 2003-04...

12.77 (Rs.lakhs)

(b) Replacement/Installation/Modernisation of old and inefficient existing equipment and systems – High investment options

- Replacement of inefficient boiler with efficient one
- Replacement of inefficient furnace/kiln with efficient one
- Replacement of inefficient motor with efficient one
- Replacement of inefficient transformer with efficient one
- Replacement of inefficient air/gas compressor with efficient one
- Installation of variable speed drive
- Installation of high temperature (more than 350/400 C) heat recovery system e.g. economiser, heat recovery boiler, high temperature air heater (e.g. recuperator, regenerator), gas heater, raw material or intermediate product preheating system, etc.
- Upgrading of insulation of furnaces/kilns with low thermal mass ceramic fibre/ insulation bricks
- Upgrading insulation of steam distribution pipelines,equipment,chilled water pipe lines, etc.

- Modernisation of condensate recovery system
- Revamping of steam distribution system

Total Investment in 2003-04...

6.8 (Rs.lakhs)

Total Money savings in 2003-04...

34.15 (Rs.lakhs)

(c) Energy substitution/switching measures

- Substitution of fuel oil with coal in boilers/furnaces for energy cost reduction
- Substitution of coal with fuel oil/natural gas in boilers/furnaces for energy efficiency
- Substitution of coal/fuel oil/natural gas with agro-waste, bio-mass, other solid wastes, in boilers/furnaces for energy cost reduction
- Substitution of electricity use in any other specific equipment with renewable energy source e.g. solar, winds, agro-waste, etc.

Total Investment in 2003-04...

3.05 (Rs.lakhs)

Total Money savings in 2003-04...

5.24. (Rs.lakhs)

(d) Combined heat and power systems

- Cogeneration system using high pressure steam turbine (back pressure/extraction) for captive power generation and process steam for heating
- Combined cycle power generation plant (based on gas turbine and steam turbine combination)

Total Investment in 2003-04...Rs.lakhs)

Total Money savings in 2003-04... (Rs.lakhs)

(e) Waste Heat Recovery systems (Low Temperature-less than 350/400 C)

- From diesel generating sets exhaust gas
- From boiler exhaust gas
- Flash steam recovery
- From hot effluents and finished products, intermediates, etc.
- From air conditioning plants
- Installation of Heat pipes
- Installation of Heat pumps
- Installation of Vapour absorption system

Total Investment in 2003-04...(Rs.lakhs)

Total Money savings in 2003-04... (Rs.lakhs)

(f) Process Monitoring and Controls

- Temperature monitoring and control system
- Combustion control system in boilers/furnaces
- Compressed air/gas pressure monitoring
- Humidity monitoring system
- Surface temperature monitoring system
- Raw material quality monitoring system
- Any other production process monitoring and control system

Total Investment in 2003-04...(Rs.lakhs)
Total Money savings in 2003-04... (Rs.lakhs)

- (g) Reduction in usage of energy intensive raw materials. Please give salient details

Total Investment in 2003-04...(Rs.lakhs)
Total Money savings in 2003-04... (Rs.lakhs)

- (h) Reduction of rejects in the production process

Please give salient details
Total Investment in 2003-04...(Rs.lakhs)
Total Money savings in 2003-04...(Rs.lakhs)

- (i) Reduction of water consumption in the plant

Please give salient details
Total Investment in 2003-04...(Rs.lakhs)
Total Money savings in 2003-04...(Rs.lakhs)

- (j) Recycling of material

- Water and effluents
- Production rejects
- Utilisation of waste bye-products (within or outside)

Total Investment in 2003-04...(Rs.lakhs)
Total Money savings in 2003-04... (Rs.lakhs)

- (k) Reduction of transport fuel

- Replacement of fuel inefficient vehicles with efficient ones
- Replacement of petrol/diesel by CNG (if available) or LPG
- Utilisation of battery operated vehicles

Total Investment in 2003-04...(Rs.lakhs)
Total Money savings in 2003-04... (Rs.lakhs)

- (l) Human Resource Development for Energy Efficiency improvement

- Specific 'training need assessment study' carried out by internal team or external consultants for providing appropriate training to the employees
- In-house training programmes conducted
- Employees sent for training within India
- Employees sent for training in abroad
- Study undertaken to assess the impact of training provided to employees

Total cost in 2003-04...(Rs.lakhs)
Annual Energy Cost(2003-04).... (Rs.lakhs)

DOCUMENTS ATTACHED :

- I. Copies of Certificates pertaining to statutory requirements such as pollution control are enclosed.
- II. Audited annual reports for year 2001-02,2002-03 & 2003-04(draft) are enclosed.
- III. A brief write up of the unit as mentioned as Sr. No 22 along with photographs depicting equipment /locations where energy efficient activities have been undertaken and a Floppy Diskette in are enclosed.

Signature of Executive :

Name & designation of the Executive :

Date :

Place : Ballarpur Industries Limited, Unit-Bhigwan

Organisation Seal :