

Brief Write-up of the Unit

Unit Profile



BILT Graphic Paper Products Ltd. is the largest paper manufacturing group having six paper-manufacturing units all over India with 4.5 lac MT p.a. capacity along with a new global acquisition at SABAH- MALAYSIA with capacity of 1.5 lac MT p.a.

Unit Ballarpur is the largest unit of **BILT Graphic Paper Products Ltd.** This unit is a pioneer in the manufacture of wide range of high quality writing and printing papers for the wide range of prestigious end users.

The brand names of our unit are Maplitho NSD premium SF & HB, Sunlit Bond, Sun Shine Super Printing, Cream Wove, ESKP, T.D, AR and AF Poster duplicating semi absorbent ledger, Coating base Maplitho etc.

It is an **integrated Pulp and Paper Mill** with 6 Paper Machines having its own pulp manufacturing facilities along with chemical recovery process plant. Hence it has larger infrastructure comparing to the paper mills manufacturing paper from purchased pulp. The operating capacity of the unit has been brought up to 1,30,000 MT p.a. without any major investment.

BGPPL unit Ballarpur is going to increase its production capacity from 1.30 lac MT to 2.5 lac MT per annum by after installing a new single paper machine of 500 TPD and shutting of 3 old paper machines along with new Power Plant of 40 MW by Dec-2009, New Pulp mill and Recovery sections are also in the future planning.

Unit has received several **National & State level Awards** for “**Excellence in Energy Conservation and Management**”.

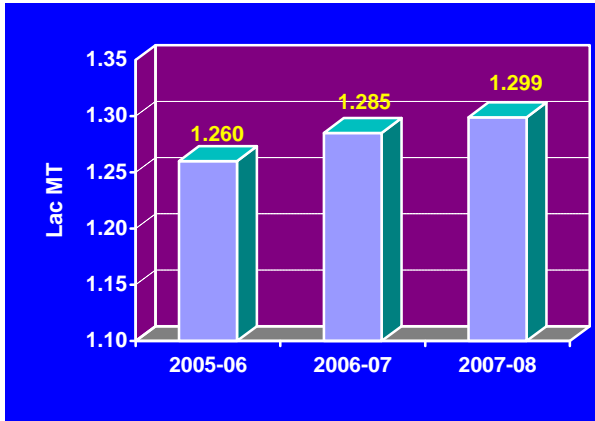
ENERGY CONSUMPTIONS

There is a continuous decline in Specific energy consumption due to regular improvement & implementation of energy conservation ideas in the unit.

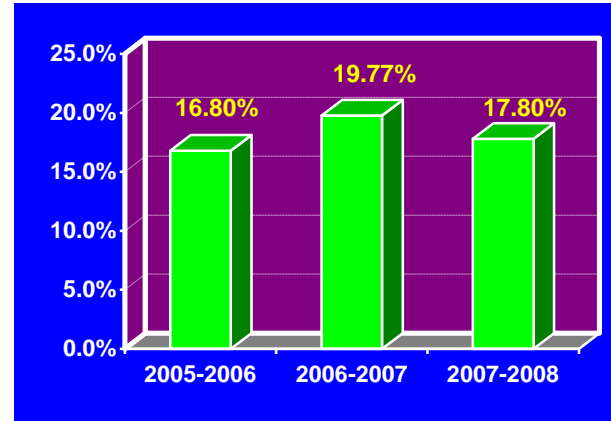
Description	Unit	2005-2006	2006-2007	2007-2008
Annual Production	MT	126009	128504	129890
Total Electrical Energy Consumption / annum	Lakhs kWh	2244.319	2220.65	2243.9
Specific Energy Consumption - Electrical	kWh / MT	1039	1013	1002
Total Thermal (fuel) Consumption / annum	MKCals	935553	943981	949714
Specific Energy Consumption - Thermal (fuel)	MKCals / MT	7.424	7.346	7.312
Total Paper Manufacturing Cost	Rs /MT	22334	24254	27337
Total Energy cost	Rs /MT	3753	4796	4866
Energy Cost as % of Manufacturing cost	%	16.80	19.77	17.80

Production and Energy Cost Trend

Paper Production in Continuous increasing trend (lac MT)



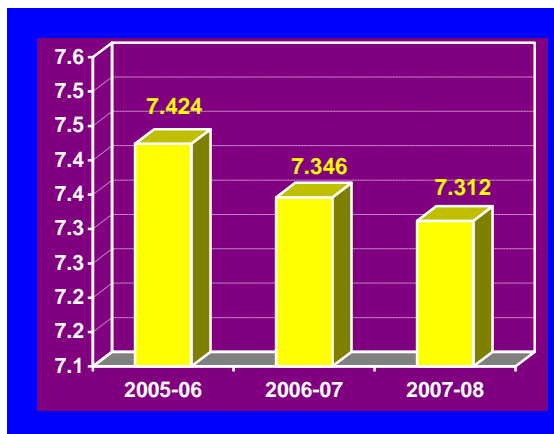
Reduction In Energy Cost : % of total Manufacturing Cost



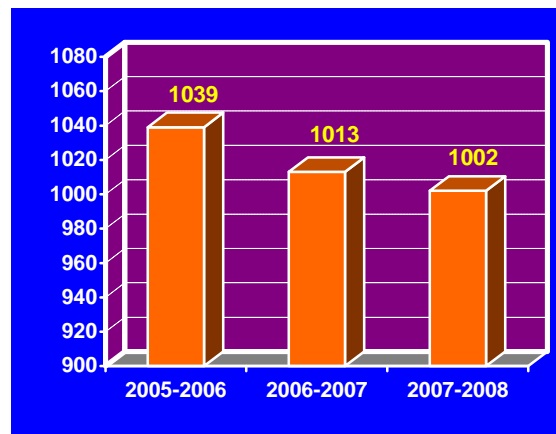
** Impact of increased MSEB Grid Power price

Specific Energy Consumptions Trend

Sp. Thermal Energy Consumption (M kcal/ MT)



Sp. Electrical Energy Consumption (kWh/ MT)



Energy Conservation Commitment, Policy & Organizational Set up

Unit: Ballarpur is committed for reducing the energy consumptions thr'o effective utilization and continuous improvement. Company has independent Energy Conservation Cell setup, headed by a full time Energy Manager, constituting Process & Engineering faculties.

Our unit has Energy Management Policy.

Energy Management Policy **Ballarpur Industries Limited, Unit - Ballarpur**

Communication, Culture & Commitment are the key driving Forces for us in making "Conservation of Energy – A way of Life" at our works.

The simplicity in our approach, thus inspires our actions, which broadly includes :

- *Identify & communicate ECO's – Energy Conservation Opportunities and continuous improvement of the process.*
- *Introduce site-specific conservation measures and re-examine their effectiveness periodically.*
- *As a part of our Energy Conservation Strategy, we are committed to reduce our specific Energy Consumption regularly to be the Best in paper industry having similar operations in India.*
- *Impart regular training to create awareness and align the commitment at all levels*
- *Top Management commitment & regular reviews to ensure continual improvement*

Let each one of us participate enthusiastically to succeed and sustain this mission in making Unit Ballarpur the pace setter in the area of Energy Conservation.



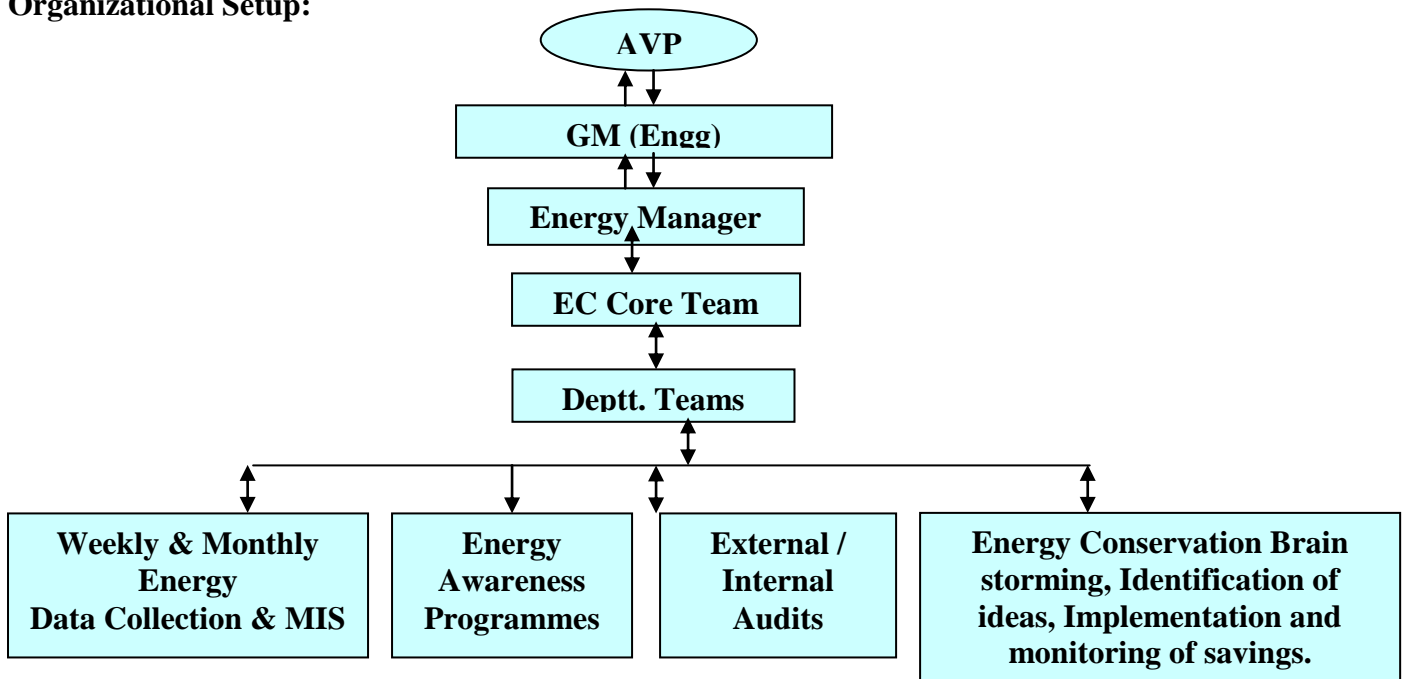
Dr. Ashok Kumar

Unit Head



Dec 2, 2006

Organizational Setup:



We have celebrated Energy Conservation Week from 14th to 20th Dec-07 in which several programmes such as awareness, energy quiz, and painting competitions were conducted.



Energy Conservation Campaign by school children



General Awareness Programme



Painting Competition



Energy Quiz Competition

Energy Conservation Achievements for two year 2007-08

Major Projects Implemented During the Year 2007-08

Project No. 1

Replacement of two nos. inefficient vacuum pumps on PM-1.

Before : Vacuum pump for tubes was running with 132 kWh power.

After : New same capacity pump installed with running power of 107 kWh.

Power saved = 4,20,000 kWh/annum
Money Saved = Rs. 20.3 lacs / annum
Investment = Rs. 10.0 lacs



Project No. 2

Installation of VFD on one blow tank Pump.

Before: Blow tank pump was consuming 50 kWh.

After: After installing VFD it is consuming 25 kWh.

Power saved = 2,10,000 kWh/annum
Money Saved = Rs. 10.1 lacs / annum
Investment = Rs. 4.0 lacs



Project No. 3

Installation of VFD on 3 no washers of wash plant.

Before: BSW 3 washers were consuming 32 kWh.

After: After installing VFD it is consuming 21 kWh.

Power saved = 92400 kWh/annum
Money Saved = Rs. 4.46 lacs / annum
Investment = Rs. 7.5 lacs for 3 VFD



Project No. 4

Installation of VFD on Coal Boiler-6 ID fan.

After installing VFD powers saved 38 kWh/hr.

Power saved = 3,19,200 kWh/annum
Money Saved = Rs. 15.42 lacs / annum
Investment = Rs. 5.0 lacs

Project No. 5
Installation of VFD on 4 no on Bleach washers.

Before: BPW 4 washers were consuming 32 kWh.
After: After installing VFD it is consuming 21 kWh.

Power saved = 2,43600 kWh/annum
Money Saved = Rs. 11.77 lacs / annum
Investment = Rs. 10.0 lacs for 4 VFD



Project No. 6
Continuous stock preparation system on PM-4.

After installing continuous stock preparation system on PM-4, power saving achieved 10 kWh/hr.

Power saved = 84000 kWh/annum
Money Saved = Rs. 4.06 lacs / annum
Investment = Rs. 10.0 lacs



Project No. 7
Replacement of inefficient motors 5 Nos.

5 nos inefficient power saving achieved 15 kWh/hr.

Power saved = 126000 kWh/annum
Money Saved = Rs. 6.09 lacs / annum
Investment = Rs. 10.0 lacs



Project No. 8
Reduction in Steam consumption in Bleach plant after upgrading blow heat recovery.

Complete blow heat recovery upgraded which is resulted in better heat recovery & saved steam consumption on



bleach plant.

Equivalent coal saved = 2545 MT/annum
 Money Saved = Rs. 41.18 lacs / annum
 Investment = Rs. 290.0 lacs

Project No. 9
Reduction in Steam consumption in ClO₂ plant after installing the double effect VAS Chiller.

New double effect Vas chiller installed in place of single
 Effect old chiller resulted in steam saving.

Equivalent coal saved = 850 MT/annum
 Money Saved = Rs. 13.76 lacs / annum
 Investment = Rs. 55.0 lacs



Other EC Ideas implemented during the year 2007-08

S.No.	Description	Energy Saving	Saving in Rs. lacs	Investment Rs. lacs
1	Running of lower rating warm water pump in Pulp Mill.	126000 kWh/yr	12	Nil
2	Running of lower rating warm water pump in Pulp Mill.	50400 kWh/yr	2.4	Nil
3	Power saving by stopping knotter screen dilution pump by providing dilution line from treated effluent pump.	37800 kWh/yr	1.8	Nil
4	Power saved by running smaller capacity pump to feed bleached pulp to TRDP.	25200 kWh/yr	1.2	Nil
5	Replacement of 50 nos. 102 W tube light with 70 W metal halide lamp.	13440 kWh//yr	0.6	1.5
6	Reduction in Steam consumption in Recovery section.	672 MT/yr Coal saved	10.9	15

Energy Conservation Plans and Targets:-

Energy Conservation Measures (Planned)	Anticipated savings in		Approx. investmen t (Rs.lakhs)	Project Commencement & Completion year
	<u>Energy Value</u> Million k Cal	<u>Rs. Lakhs</u>		
Installation of Thermo compressor based Steam condensate system on PM-6 to utilise max. flash steam	9541	42	70	2008-09
Installation of VFD for Broke cleaning feed pump (37 kW)	101	2	35	2008-09
Installation of VFD for PM-3 m/c chest pump (37 kW)	71	2	2	2008-09
VFD for PM-4 fan pump (110 kW)	99	2	6	2008-09
VFD in RB-2 ash mixing tank (37 kW)	57	1	2	2008-09
VFD in white Liquor supply pump (18 kW)	51	1	2	2008-09
Installation of VFD's Blow tank pump	181	4	5	2008-09
Installation of 2 nos. energy efficient under pulper rotor.	144	3	7	2008-09
Replacement of inefficient motors	311	7	20	2008-09
Reduction of fresh water consumption	10 M ³ / MT	36	25	2008-09
Installation of Producer gas system for Lime Kiln	----	625	590	2009-10
Installation of Air preheater on Coal Boiler 4 & 6.	2900	14	13	2008-09
Installation of New high capacity Paper Machine	11686	56		2008-09
Coal boiler No. 6 conversion to FBC	65.42	275	600	2008-09
Installation of Thermo compressor based Steam condensate system on PM-4 to utilise max. flash steam	5446	30	65	2009-10

Environment & Safety



At Unit Ballarpur, effective and efficient operation of all equipments and facilities for pollution control are considered as priority area and being operated accordingly.

Various effective measures have been taken to control pollution at source like efficient pulp washing system, DCS process control for optimizing chlorine consumption, reducing molecular chlorine by using chlorine dioxide and oxygen in bleaching process, replacing calcium hypochlorite with hydrogen peroxide,

use of eco friendly inputs, cooking aid to reduce chemical consumptions, spills collection and reuse systems, good housekeeping etc. We are efficiently operating a state-of-the-art Effluent Treatment Plant based on Activated Sludge Process. The treated effluent meets Maharashtra Pollution Control Board's effluent discharge norms. Treated effluent used in the process, gardening in ETP and other mill area. The treated effluent is utilized for land irrigation by the farmers.

We have already installed state of the art limekiln with the investment of Rs. 33 crores for recycling lime mud, a solid waste. Mill is also in the process of adopting eco-friendly technologies of ODL (Oxygen De-Lignification) and ECF Bleaching (Elemental Chlorine Free) technology. The project is under installation state and expected to be completed by October 2008.



We have taken various measures to reduce water consumption. Unit Ballarpur water consumption is less than 114 m³/T of paper, which is lower than national norms. Mill is actively working towards water conservations programs through Reduce, Recycle and Reuse (3-R) methodologies.

Unit Ballarpur has provided efficient Electro Static Precipitators to Recovery Boilers to control the emissions below State Pollution Control Board specifications. Tall chimneys of the boilers help in dispersion and hence reduce pollution. We have scrubbers for bleach plant, hydrochloric acid plant and sulphur dioxide plant which

is working effectively and efficiently.

We are also disposing all solid waste in gainful manner.

We have profuse greenery in and around mills, beautiful garden and lush green lawns on our lime sludge dumps, colony, Mills areas and ET Plant area. We have more than 2.60 Lakh standing trees planted in our mills and colony area. These provide more than 40% green cover as assessed by Forest Department, Government of Maharashtra.

Mill has developed about 53 kilometers of Avenue Plantation along with Ballarpur Nagpur Highway, at Ballarpur, Chandrapur, Visapur, Ghodpeth, Nadori, Bhadravati etc. Every year we are doing about 5 km avenue plantations.



Under farm forestry activities, we have a full fledge separate department looking into the production and distribution of high quality eucalyptus clones suitable to the local climate.

Unit Ballarpur has well equipped Environmental Monitoring Laboratory and trained staff with facilities like, Spectrophotometer, Flame Photometer, BOD & COD Analysis, Weather Monitoring Station, Stack Monitoring Kit, High Volume Air Samplers, Handy Air Sampler etc.

We have conducted various in-house training programs to enhance awareness level towards environment for worker and management staff. World Environment Day was celebrated by organizing plantation activities and other competitions involving people.

Various environmental up-gradation projects are in progress at Unit Ballarpur with the investment of more than Rs. 5400 Lacs. This will help in improving overall environmental performance of Unit Ballarpur. We have been selected for Gold Award for Excellence in Environment Management for the year 2007-08, from Greentech Foundation, New Delhi, a national level renowned NGO.

SAFETY

BGPPL unit Ballarpur has full-fledged Safety Department to look after the safety requirements of the plant & employees. National Safety day is being celebrated every year on 4th March.

Departmental safety committees are formed & regular meetings are being conducted for day-to-day requirements & improvements. Internal & external Safety Audit & health checks are also conducted at scheduled intervals.



On site Emergency plan exists. Work permit system, Mock Drills, House Keeping regular training etc are the main activities for ensuring safety.



BGPPL Unit Ballarpur received Greentech Safety Awards 2008.

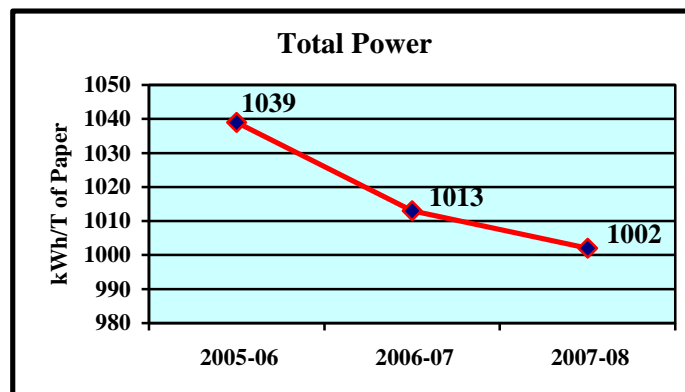
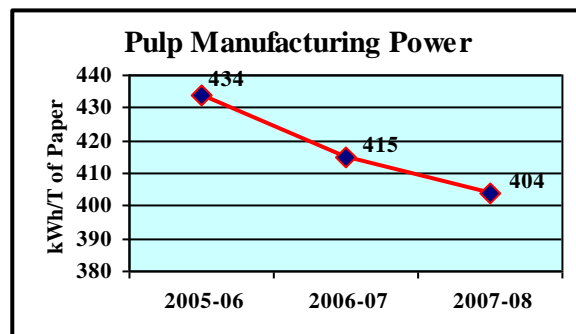
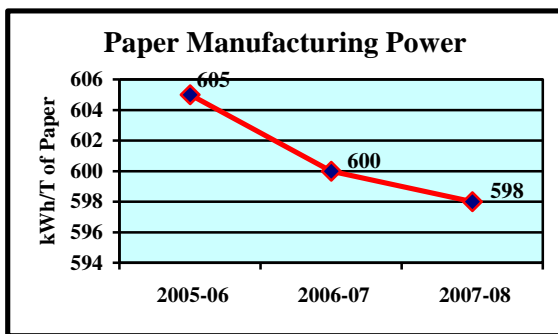


MOST IMPORTANT

Difference between Integrated Pulp & Paper and Purchased pulp Paper Mills

Here we would like to draw the attention on a very important point for the right judgment while comparing two paper mills. There are different categories in paper mills such as some paper mills are manufacturing paper by purchased pulp where they have only paper manufacturing facilities while the integrated Pulp & Paper mills have their own pulp manufacturing facilities along with paper machines in which the total infrastructure is quite big and that includes pulp mill & soda recovery plants etc. Hence the norms of integrated paper mills & purchased pulp paper mills cannot be compared as both are having different infrastructure.

Here we have shown the separate energy consumptions for Pulp & Paper manufacturing sections, which is a breakup of the total consumptions.



Our unit Ballarpur is an integrated pulp & paper manufacturing unit having its own pulp manufacturing facilities along with paper manufacturing facilities. Hence its energy consumptions can be compared only with similar paper mills having similar operations. If compared with other mills the separate consumptions are shown above.

Flow Chart for Non Integrated Paper Mill Operations

Purchased Pulp conveyor
& Pulper

Stock
Preparation

Paper Machine

Paper Finishing
& Packing

