

ITC Limited
Paperboards & Specialty Papers Division
Unit: Tribeni, Hooghly (West Bengal)

Unit Profile

ITC Limited, Paperboard and Specialty Papers Division, Unit-Tribeni is a pioneer in the manufacture of a wide range of specialty papers in India. Specialty papers manufactured in Tribeni Unit involve precise control of technical properties, which are markedly different from the specifications and precision levels required for other commodity paper grades. These products need to cater the specific requirements of individual customers.

Unit Tribeni has developed significant capabilities in product development and other research covering specialty papers through one of the best-equipped paper laboratories in the country. Tribeni Unit is certified under the ISO 9001, ISO 14001 and OHSAS 18001.

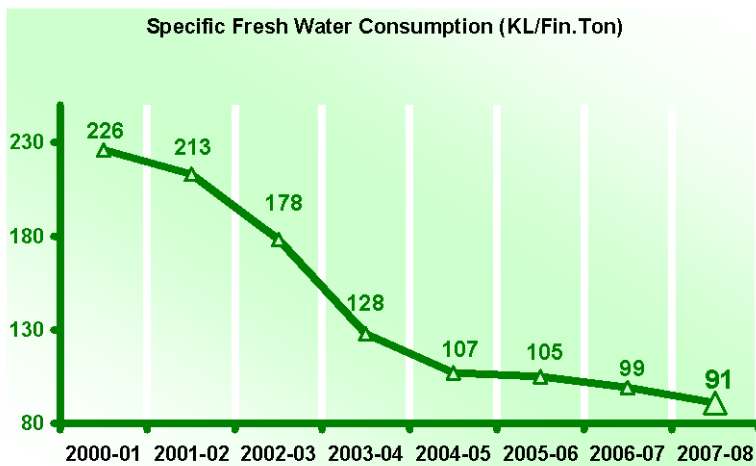
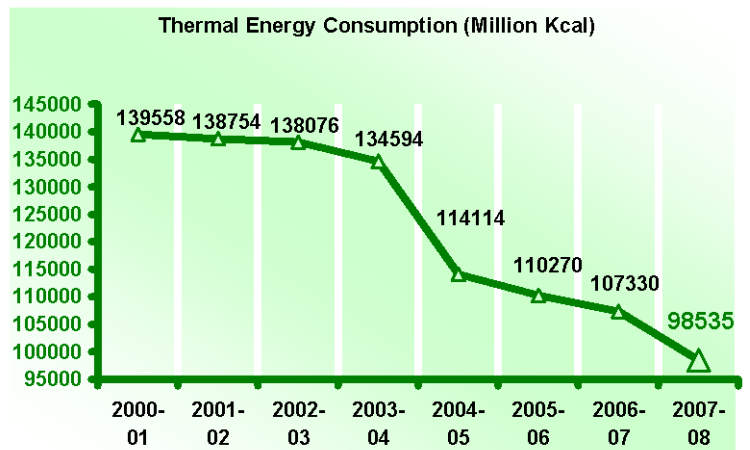
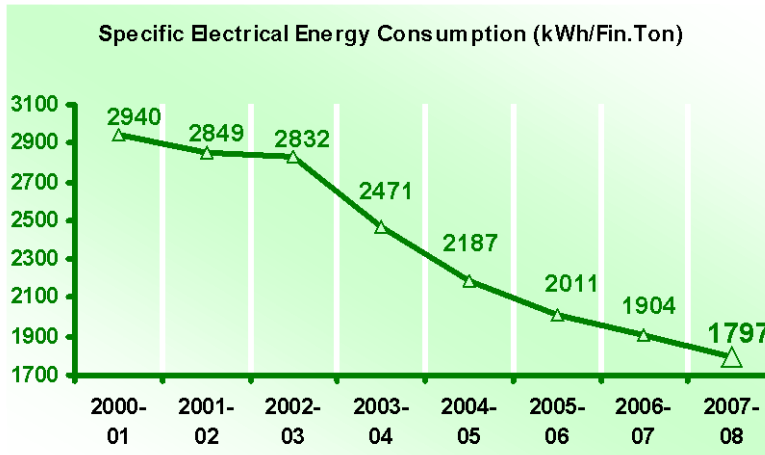
Unit Tribeni operates with three paper machines having a capacity of 30000TPA, namely PM1-7000TPA, PM3-16000TPA and PM4-7000TPA. The specialty papers manufactured at our unit are Cigarette Tissues & Components, Décor Grades, Lightweight Communication Grades, Insulating and Interleaving Tissues, High Strength Match Tissues and Other Specialty Grades.

Energy Consumption

Year	Electrical Energy		Thermal Energy (For Process Heating)**		
	KWh Lakhs	Rs. Lakhs	Type of Fuel	MKCal	Rs. Lakhs
2004 – 2005	517.37	1327.22	Coal	114114	554.70
2005 – 2006	483.12	1454.01	Coal	110270	721.60
2006 – 2007	461.73	1293.57	Coal	107330	660.01
2007 – 2008	420.35	1350.77	Coal	93736	619.51

Year	2004-2005	2005-2006	2006-2007	2007-2008
Annual sales turnover of the unit (Rs. Lakhs)	13500	13253	13500	19369
Total Energy Cost (Rs Lakhs)	1882	2175	1954	1970
Energy Cost as % of manufacturing cost	15	16	17.5	14.3

Year	Production in Tons	Increase w.r.t previous year.	Specific Electrical Energy		Specific Thermal Energy (For Process Heating)**	
			kWh* per Unit Produced.	Decrease w.r.t previous year	MkCal per unit produced	Decrease w.r.t Last Year
2004-05	23667	11.71%	2187		4.82	
2005-06	24024	2.81%	2011	8.04%	4.59	4.77%
2006-07	24250	0.94%	1904	5.32%	4.25	7.40%
2007-08	23387	-3.56%	1797	5.60%	4.01	5.69%



Energy Conservation Commitment, Policy and Setup

Commitment:

At ITC PSPD Tribeni Unit, the vision of Energy Conservation was conceptualized in the late eighties. Successive Management thrusts on Encon were translated into action plans and implemented through the normal organizational set-up with Encon as an additional function. In the year 2003, a major thrust to the Energy Conservation (EC) activity was given by the creation of an EC cell headed by a Senior Manager exclusively qualified and certified for the job. The Process adopted energy conservation as a regular function. The commencement was moderate but within a short time the specific energy trend showed quantum improvement, with machine utilization and productivity improvements following the fast track. There was an all round spurt in the systematic identification of EC potential in several areas of the Mill.

ITC PSPD Tribeni Unit is committed towards sustained conservation of energy and improvements to environment with the following objectives:

- Maximum utilization of self-generation and co-generation plants.
- Continuous monitoring of energy efficiency of all equipments and taking timely replacement/renewal steps towards efficiency improvement.
- Empowering the Energy Management Cell to monitor and adopt appropriate energy conservation technologies for all new projects.
- Continuous tracking of new technologies towards energy efficiency improvement and employ the best resources for conducting conservation studies and audits.
- Inculcate a culture of Team Participation through TPM and other small group activities towards harnessing in-house capabilities in energy saving.
- Continuous improvement in Knowledge and Skill of employees for better productivity and energy utilization.
- Creating mass awareness among employees, nearby population and school children.
- Benchmarking of energy consumptions by comparing with the international levels.
- Recognition and rewards for the employees towards their initiatives on energy conservation.
- Micro and Macro level monitoring of energy including all natural resources like, coal, steam, water and electricity on a day-to-day basis.
- Maximizing the recovery of waste heat energy.
- Specific Energy reduction target of at least 2% per annum.



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Energy Policy

We at ITC Limited, Paperboards & Specialty Papers Division, Unit-Tribeni are totally committed to continuously improve our Energy performance in all our activities, products and services.

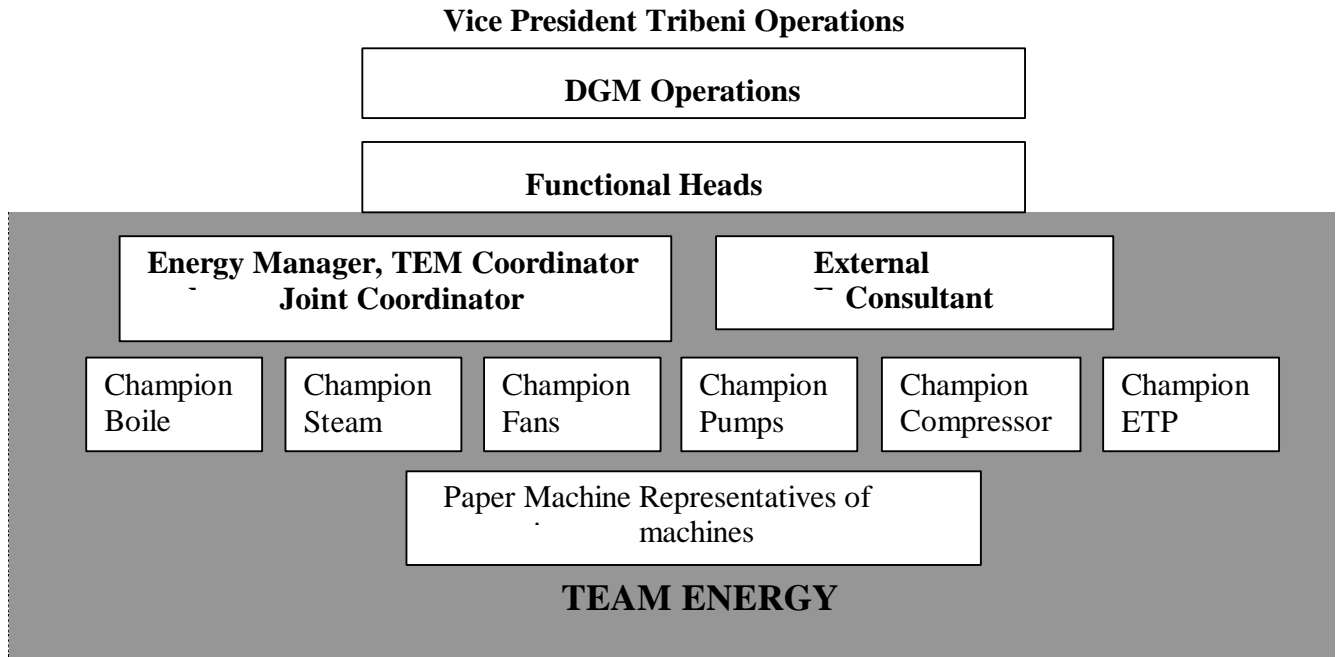
To meet above goals we will strive for:

- Maximising cogeneration.
- Adopting, appropriate energy conservation technologies for all the projects.
- Replacing energy inefficient equipment, with energy efficient equipment.
- Conducting conservation studies including audits by engaging external specialists in the respective areas.
- Creating awareness among employees and nearby population through campaigns, publicity about the need for energy conservation.
- Benchmarking of energy consumptions by comparing with the international levels.
- Recognizing the efforts of employees in energy conservation initiatives and suitably rewarding them.
- Monitor closely and controlling the energy consumption by utilizing effective energy management systems.
- Maximizing the recovery of waste energy.
- Reducing Specific Energy Consumption at least by 2% annually.


PRADEEP DHOBALE
Chief Executive

ITC Limited, Paperboards & Specialty Papers Division

Energy Conservation Set up:



EC Cell is constituted of Electrical, Mechanical, Instrumentation, Energy and Process Engineering functions and is called “Total Energy Management” or “TEM” Committee in short. While the management puts topmost priority to TEM implementation, TEM Team derives strength from the workmen participation in brainstorming sessions conducted regularly. Departmental “Open Forums” and TPM activities are one of the mechanisms through which the workmen communicate on Energy Conservation suggestions. The core management team mentioned below is the steering committee, wholly involved in reaching new heights in energy conservation with quality projects for sustained energy conservation.

Energy Conservation Achievements:

ITC PSPD, Tribeni Unit has implemented 37 Encon Projects in 2007-08 amounting to annual savings of 46.75LkWh, 11686MKCal, Rs.226.84Lakhs with Investment of Rs.2070.69Lakhs, out of which Four (4), ZERO/LOW investment projects have been derived from employees participation, through TPM activities, resulting in a saving of 2.92 Lakhs kWh /year equivalent to Rs.9.34 Lakh /year. Out of the rest Investment Oriented Projects, Three (3) Projects (highlighted in same/'brown' colour) were outcome of ideas from employee participation in BrainStorming / TPM Sessions, which were further analysed and implemented through Top Management Support for an investment of Rs.131.02 Lakhs, resulting in a saving of 2.82 Lakhs kWh /year and 3126.61 MKCal/year, equivalent to Rs.29.70 Lakh /year.

Introduction of Third Press Nip in Paper Machine No. 3.

Added a Third Press Nip in Paper Machine3 to reduce pre-dryer moisture and steam consumption. This was an outcome from the several brainstorming sessions undergone post ENCON trainings in the UNIT.

Total investment, Rs.: 67.5 Lakhs
Annual Energy Saved – Rs. 20.66 Lakhs.



Complete Automation of Paper Machines No.1 and 3 with DCS.

With state of the Art DCS technology ACS800xA from ABB. Process Controls like Multiple interlocks and most optimum control logics were used to save energy and steam consumption. In the process, various process control valves were also replaced to ensure finer controls and hence improve upon the objective of energy conservation

Total investment, Rs.: 110 Lakhs
Annual Energy Saved – Rs. 31.47 Lakhs



Replacement of 21 Nos. DC Variable Speed Drives with AC Variable Speed Drives in Paper Machine No.1.

All the sectional Variable Speed DC Drives of Paper Machine No.1 having KEC DC Motors and ABB Midi2 DC Drives were replaced with state of art ACS800 Drives and Energy Efficient Motor technology from ABB. The result was a straight minimum saving of 70kW load in the Machine Drives

Total investment, Rs.: 350 Lakhs
Annual Energy Saved – Rs. 15.52 Lakhs.



Installation of "Low Pressure Drop Efficient Centricleaners in Paper Machines 1 and 4.

Replaced energy consuming Centricleaners with low pressure drop GL&V make and Kadant Make Centricleaners respectively with optimized pressure drop and higher consistency.

Total investment, Rs.: 98 Lakhs
Annual Energy Saved – Rs. 15.05 Lakhs.



Other Projects Implemented during 2007-08

1. Replacement of Fan Pump of Paper Machine No.4 with energy efficient Fan Pump.
2. Introduction of Additional felt Suction roll before 3rd Nip in Paper Machine No. 3.
3. Install translucent sheet and switchoff the lights in daytime in PM3 hall.
4. Install 30 Nos. of Wind Turbine Exhaust Fans to shut 18 nos. of Room Exhaust Fans in PM3&4 Building.
5. Utmal 10E Vacuum Foil Box Pump replaced with energy efficient KVL300 Vacuum Pump in Paper Machine No.3.
6. Suction Pick up cum press Zone 1, KVM1800 Vacuum Pump replaced with K202L in Paper Machine No.3.
7. Introduction of Induction Profiler System in Paper Machine No.3.
8. Automatic Tail Threading Device installed after 2nd Nip and Third Nip to reduce paper reeling time in Paper Machine No.3.
9. New Head Box in Paper Machine No.1. Productivity Improvement.
10. Paper Machine No.1 Wire Part Extension by 3 Meter with other modifications to improve productivity and reduce drag load.
11. Higher Diameter 2nd Nip Top Press Roll in Paper Machine No.1.
12. Replacing 2 Nos. of Jhyla Refiners with 2 No. 28" Double Disc Refiners in Paper Machine No.1.
13. Replacement of Jordon Refiner with 21" Tri-Disc Refiner in Paper Machine No.4.
14. Paper Machine No.1 Pope Reel Replacement to improve productivity.
15. Replacement of Worm Gear Boxes by Helical Gearboxes for Paper Machine Drives.
16. Replacement of Paper Machine No.1 Flat Suction Box Vacuum Pump NASH'L-5' with NASH'CL-1001', With Poly-V Belt System.
17. Replacement of Paper Machine No.1 Suction Couch Vacuum Pump NASH'L-6' with NASH'CL-2001', With Poly-V Belt System.
18. Replacement of Paper Machine No.1 Suction Pick-up Vacuum Pump KVM-600 with NASH'CL-1001', With Poly-V Belt System.
19. Replacement of Paper Machine No.1 Suction Press 1st Zone Vacuum Pump KVM-900 with NASH'CL-2001', With Poly-V Belt System.
20. Replacement of Paper Machine No.1 Suction Press 2nd Zone Vacuum Pump KVM-900 with NASH'CL-2001', With Poly-V Belt System.
21. Replacement of Paper Machine No.1 UHLE BOXES Bottom Felt Vacuum Pump KVM-900 with NASH'CL-2001', With Poly-V Belt System.
22. Replacement of Paper Machine No.1 UHLE BOXES Top Felt Vacuum Pump KVM-900 with NASH'CL-2001', With Poly-V Belt System.
23. Replacement of 2 Nos. 37kW LT Induction Motor with Super Energy Efficient Motors.
24. Replacement of 3 Nos. 45kW LT Induction Motor with Super Energy Efficient Motors.
25. Replacement of 3 Nos. 90kW LT Induction Motor with Super Energy Efficient Motors.
26. Replacement of 3 Nos. 75kW LT Induction Motor with Super Energy Efficient Motors.
27. Replacement of 1 No. 160kW Finishing Refiner Motor with Super Energy Efficient Motor.
28. Incorporation of 3 Nos. 100kVA and 2 Nos. 50kVA Dry Type Transformers in Lighting Circuits to optimise Lighting Voltage Level and Save Energy.
29. Incorporation of 10 Nos. 70Watt Metal Halide Flood Lighting replacing 10 Nos. 500 Watt Halogen Light Fittings in Paper Machines.
30. Shutting Down of 1No. 25HP Suction Water Pump in Paper Machine No.3.
31. Replacement of Paper Machine No.1 Pocket Ventilation Fan with Energy Efficient One.

Major projects under implementation during 2007 – 08.

1. Paper Machine 3, Hood Exhaust Recovery.
2. Paper Machine No. 3 - Modifications in Approach Flow System including Head Box.
3. Modifications in the Steam Distribution System Phase II.
4. Replacement of Paper Machine 4 Steam System from Trap Type to Thermocompressor System.
5. Replacement of Air Dryer Batteries with Modified Design Air Dryer for reducing Compressed Air Pressure Drop and to get constant Dew Point.
6. Closed Cycle Cooling Water System for Process Cooling Requirements.
7. Major Productivity Improvement Modifications and Initiatives.
8. Solar Water Heaters in DeAerator Feed Line replacing steam usage.
9. Reverse Osmosis Plant in Paper Machine No.1.
10. Replacement of Water Cooled Mechanical Braking System in Rewinder 3 Unwind Roll to a Regenerative AC Drive Braking System.

The above 10 projects in pipeline will save around 9.7L-kWh /year, 18060 MkCal/year generating savings of Rs. 109.23 Lakhs with an investment plan of more than Rs. 10.82 Crores. The payback of this cluster of projects is more than 9 years, which shows the commitment of ITC PSPD Management on Sustained Energy Conservation.

Environment and Safety

ITC Tribeni is governed by the Corporate EHS guidelines and is focused on sustainable improvements beyond the statutory regulations.

Best Practices prevailing in our Unit are Total Productive Maintenance (TPM), 5S, Juran Quality Initiative (JQI) and OHSAS 18001,

Major EHS projects taken during 2007-08

1. Reduced effluent discharge by 2.94% w.r.t 2006-07.
2. Fly ash Brick Making Facility 21.3% usage of fly ash.
3. Rebuild of Dust Suppression System in Boiler and Coal Handling Plant Area.
4. Replacement of 2 Numbers Paper Machine Asbestos Roof with Galvolume Sheets..
5. ETP Secondary Sludge Treatment Plant Setup.

Major Achievements in EHS during the year 2007-08.

Fly Ash	(An increased amount of re-use through bricks)			
	2004-05	2005-06	2006-07	2007-08
Fly Ash used in Clay Bricks	20.18%	22.17%	55.00%	52.00%
Fly Ash Bricks Made	0%	6%	8.21%	21.29%
Ash used for Road Construction	79.82%	71.67%	36.79%	26.71%

ESP - SPM					
	2003-04	2004-05	2005-06	2006-07	2007-08
IJT Boiler (mg/Nm³)	109	35.1	30	29	25
IBIL Boiler (mg/Nm³)	123	92.3	80	62	51
Improved IBIL ESP Performance after Retrofit and stabilisation.					

ETP Sludge				
	2004-05	2005-06	2006-07	2007-08
Reused by PCB Auth. Board Manufacturers	780.67 MT	1049.817 MT	1493.28 MT	1214.28MT
	(Bone Dry Basis)		100% recycled.	

Used Oil					
	2004-05	2005-06	2006-07	2007-08	
Generated (Litres)	7530	8190	11090	10052	
Reclaimed and re-used internally (litres)	2730	4340	9420	8789	
Sold to Authorised Agencies for further use (Litres)	4800	1870	1670	1263	

Not Only saving the environment but also re-use of hydraulic and lube oils leads to indirect energy saving (petro products + their processing energy consumption)

ITC PSPD Tribeni Unit has a Cleaner Production Approach through :

Recycling : Process back water recycling., Recycling of wooden pallets. Broke Paper : segregated & reused.

Treated Effluent : partly used in cooling tower, compressors cooling and blow down operations of boiler.

Waste Minimisation: Reduction of shrinkage, Reduction of fibre & filler loss through adoption of latest technology of dual & triple polymer systems for retention programme. JQI groups actively engaged in shrinkage and variance reductions. **Water Conservation :** Major fresh water conservation initiatives taken to bring down freshwater consumption level to 99 m³ / T from a level of 107m³/T 2years ago.

Raw Material Management : Consumption of Eco-friendly products. Gunny packing. Corrugated fibre board container. Re-pulpable adhesive tape. Chemicals with FDA approval. Pulp sourced from units having sustained forests & ECF bleaching , all imported.

Non-hazardous Solid Waste : Segregated at source, Disposed off as per Standard Operating Procedure.

Safety : Adherence to stringent guideline laid down by Corporate incorporating worldwide best standards, System of regular risk assessment by managers in force and whole hearted participation of employees through Apex & Departmental Safety Committees. Periodic internal audit and annual corporate audit, Safety slogan and quiz competition, Need based training program for all employees for safety & first aid including refresher program.

Environmental Audit: Periodic Internal Audit, Corporate Audit and External audit by LRQA and DNV for ISO 14000 and OSAHS 18000 respectively.

Awards won by Tribeni in the area of EHS.

National Safety Award : 1996 & 1997 (from British Safety Council)

RoSPA Gold Award : 1998 & 1999

Golden Peacock Environmental Management Award : 2000

Environmental Excellence Award : 2003

Runners up in “National Energy Conservation Award 2005” by BEE.

Winner of CII (ER) “Excellence in Energy Management” (amongst all types of industries) – 2006.

Winner of CII “Excellence in Water Management Award” – 2006.

“Five Star Rating” in EHS from British Safety Council – 2006.

Winner of “National Energy Conservation Award 2006” by BEE.

Winner of CII (ER) “Excellence in Energy Management” (amongst all types of industries) – 2007.

“Sword of Honor” by British Safety Council – 2007.

Winner of CII 9th National Award on “Excellence in Energy Management” - 2008