

ITC LIMITED- PAPERBOARDS AND SPECIALTY PAPERS DIVISION BHADRACHALAM UNIT, Sarapaka, (Andhra Pradesh)

Unit Profile

Promoted by ITC limited, Bhadrachalam Paper Division was incorporated on 17th July 1975, manufacturing high quality paper and paperboards for printing and packaging. During the year 2003-2004 the company produced 2,36,911 tons of paper and paperboards against the installed capacity of 1,82,500 tons with a Capacity utilization of 129.8%. In the Indian market ITC-PSPD commands a market share of 18% by volume. Since inception ITC PSPD has won 67 awards in various areas out of these, 36 are in Energy and Environment front. Exports are to the tune of 15 % of total production. Premium products manufactured on one of state of art board machine are import substitution for major FMCG packing industry.

The company installed state-of-the-art Elemental Chlorine Free pulp mill in the year 2002 having a production of 330 tons bleach pulp with an investment of Rs. 200 crores which has resulted huge reduction in energy, chemicals, water, etc.

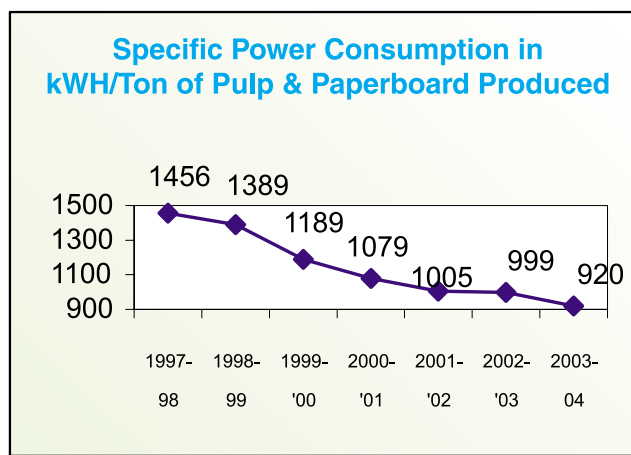
ITC-PSPD, unit Bhadrachalam has exclusively setup an energy cell in 1982 and appointed a dedicated Energy Manager on a full time job with one engineer in each discipline to Audit Energy on all ENCON activities.

The unit has its own plantation makes available high-yielding disease resistant clonal planting stock developed through biotechnology, with the use of these clonal plantations farmers have brought 16000 hectares under these plantations. The clones are procured by forest department of Andhra Pradesh, Karnataka, Tamil Nadu, Maharashtra and West Bengal in all 8000 hectares have been planted.

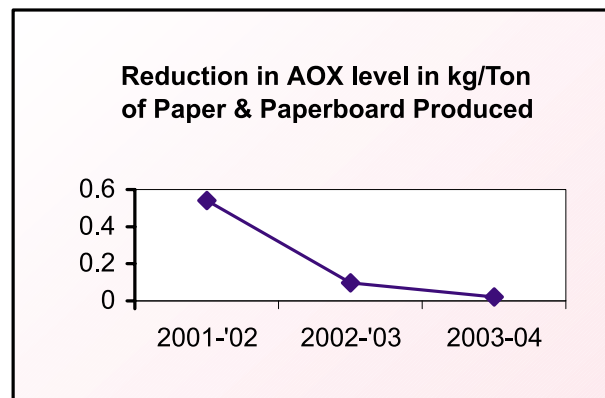
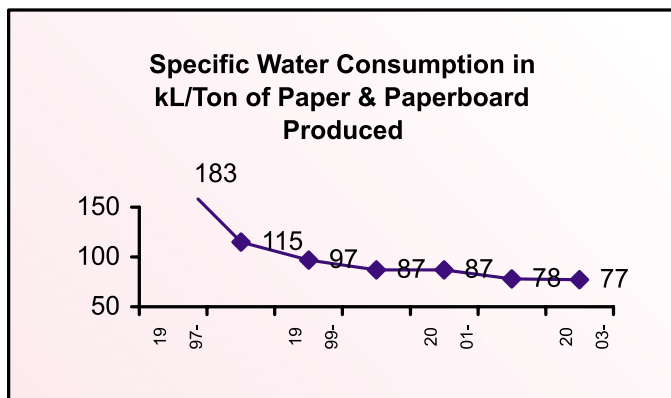
The Unit has put enormous efforts to reduce energy, chemicals, water consumption by updating the technology and constantly strives to bring the consumption of all inputs at par with international practices.

Energy Consumption

DESCRIPTION	UNIT	2001-02	2002-03	2003-04
Annual Production	tonnes	235955	238264	236911
Total Electrical Energyconsumption	Lakhs kWh	2332.2	2377.85	251691
Specific Energy Consumption- Electrical	kWH/T	988.4	998	920
Total Thermal Energy consumption	Million Kcal	914912	938359	1019214
Specific Energy Consumption- Thermal	Million kKcal/t	3.87	3.93	3.75
Total Manufacturing Cost	Lakhs Rs.	55276	55178	58700
Total Energy Cost	Lakhs Rs.	4803.83	5103.34	6233.89
Energy cost as %age of Total Manufacturing cost	%	8.69	9.24	10.619



ITC-PSPD, unit Bhadrachalam like any other pulp and paper is highly energy intensive. The senior management who are policy makers have given a very high priority for Energy Conservation activities. The policy makers who were instrumental in adopting latest technology which has driven the energy, chemical and water reduction on decline tendency year after year.



From the above graphs it is clear that above achievements are only possible with good practices and involvement of Senior Management who are policy makers.

Energy Conservation Commitment, Policy and Set up

At ITC-PSPD, Bhadrachalam unit, the company's main objective is to operate a modern, cost-effective, energy efficient and environment friendly production plant. The management commitment towards Energy Conservation is as under :

- a) Use Energy but very efficiently.
- b) Target better than design
- c) Bench mark with International best
- d) Energy auditing and monitoring for all sections to micro level and eliminate waste.
- e) Replace the inefficient systems with efficient ones at the first available opportunity.
- f) Use of SCADA systems for Energy monitoring.
- g) Keep track of latest technological developments in pulp & paper and upgrade the plants as soon as the schemes becomes viable.
- h) Engaging experts / external consultancy for study of various equipment efficiency and ways and means to improve the operating efficiency of the various equipments.
- i) Organise visit to various pulp & paper mills to study and understand the operation and gather data for study and actions to be initiated in particular to the equipments which are operating at lower efficiencies.
- j) Minimum procurement of purchased power.
- k) In-house co-generation should be maximum possible.

At ITC Bhadrachalam, the vision of Energy Conservation of the founders was turned into a mission by the successors. The concept was converted into culture. Commitment of the Top Management trickled down

to all levels. Electrical Department acting the role of a facilitator, the Process adopted energy conservation as a regular function. Consequently, within two years of commencing commercial production, the company was awarded First Prizes by the National Productivity Council and the Indian Paper Makers' Association for its meritorious performance in the areas of energy conservation, capacity utilization and productivity consistently during 1981-85.

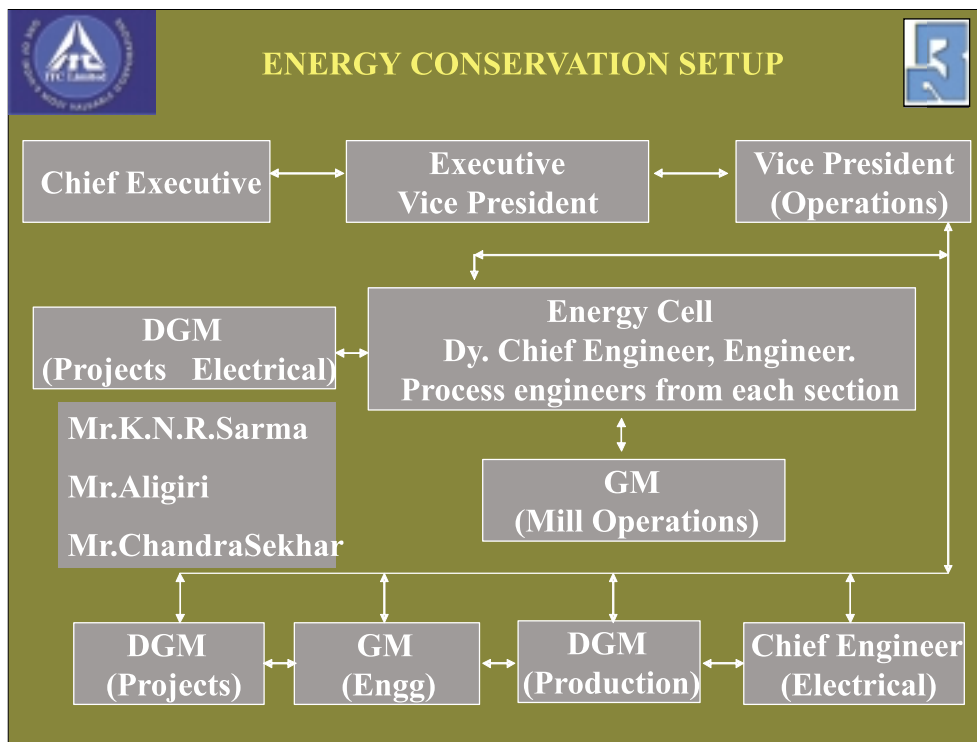
Regular monitoring of the energy usage pattern is day-to-day activity in the company and is done by top most levels. Energy Consumption is monitored at macro and as well as micro level.

The culture of the company is to constantly modernize the mill with the equipment of latest technology, which are environmentally friendly, and energy efficient. Since inception of the company it has been practice to work always on system efficiency and this guiding factor has been followed in day-to-day activities and as well as in the project stage. The commitment to greening the environment is visible in the mill and the town of Bhadrachalam through the gardens and plantations being maintained by ITC Bhadrachalam.

In the year 2002-2003, ITC-PSPD Bhadrachalam Unit has installed India's most Modern plant with Elemental Chlorine Free Pulp-Mill 300TPD (and old Pulp-Mill 200TPD has been stopped). Soda Recovery Boiler having 650TPD black liquor solids firing and Lime re-burning Plant augments the Pulp Mill. The payback is of 3 year 10 Months with an investment of 200 crores. All the additions in equipments have very marginally increased the Specific Energy in view of Energy efficient equipment selected.

In 1980 ITC-PSPD felt the implementation of EnCon and identified a separate section and energy manager to head all EnCon activities to give maximum thrust. Chief Executive and Executive Vice-president personally involve and see the achievements

Energy Conservation Set Up:



Energy Conservation Achievements

During the period 2003-2004, ITC-PSPD Bhadrachalam unit has implemented 44 ENCON projects from in-house expertise and as well as from external consultants. The effort has resulted in savings of Rs 697 lakhs with an investment of Rs 119 Lakhs. Three Major Projects implemented are below :

Three major Projects implemented during the year 2003-2004 are given below

1. Blow heat recovery system at digester house:

Installed for 17 - 20 blows per day
 Increased Digester blows in view of
 Up gradation of Pulp Mill 38 - 40 blows per day.
 Hot water requirement increased &
 additional LP steam consumption of 10 - 14 ton/ hr
 Increased the capacity of heat exchangers and
 foul condensate pumps
 Cost of scheme Rs.25 Lakh
 Envisaged steam saving of Rs.100 Lakh.
 Resulted Rs.180 Lakh of savings per annum.



2. Harmonic Filter installation at Paper Machine No.1

Harmonic filters of capacity 900kVAR were installed
 Investment of Rs.18 Lakh
 Estimated saving of 100kw
 Payback of 13.5 months.
 Achieved power saving : 76kw
 Savings achieved: Rs. 16 Lakhs.



3. Installation of TriDisc Refiner in place of Double Disc Refiner in Paper Machine-1

Compared to double disc refiner,
 tri-disc refiner was observed to give
 fine quality refining and was energy efficient.
 Investment Made Rs.28 Lakh
 Payback period of 19.5 months.
 Estimated energy saving of 150 kW
 Results: power saving of 130 kW
 Savings achieved Rs.13.8 Lakhs



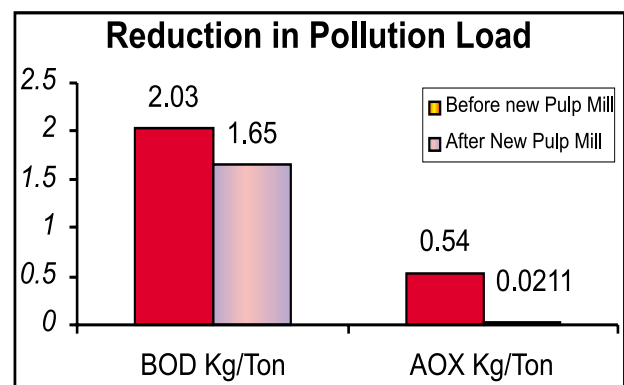
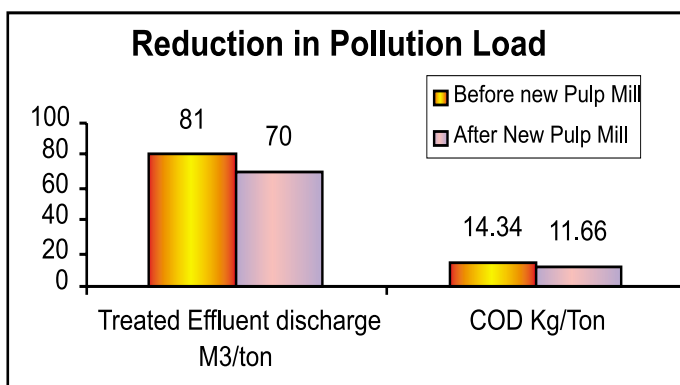
Energy Conservation Plans and Targets

For the period 2004-2005, ITC-PSPD Bhadrachalam unit has Targeted for 56 ENCON projects with in-house expertise and as well as with external consultants. The efforts will result in an annual savings of Rs 1189.67 lakhs with an investment of Rs 844.35 Lakhs (payback of 9 months).

Environment and Safety

ITC-PSPD (Bhadrachalam unit) as per the environmental policy committed for continual up gradation of technology, which generates less pollution, use of less water consumption, use of effluent water to paddy fields and high yield Eucalyptus plantations are taken as prime importance at ITC-PSPD (Bhadrachalam unit). It's worth to note Chlorine dioxide plant has been designed and commissioned for zero effluent discharge

1. Golden peacock Environment Management Award 2003
2. Indira Priyadarshini Vriksha Mitra Award 1997
3. The company has achieved best effluent system and adopted best practices. APPCB has given rebate on CESS in view of good quality of effluent and Air pollution maintained.
4. Also in view of good quality of effluent APPCB has given permission to use the discharge effluent for irrigation purpose.
5. Zero waste management at ITC-PSPD Bhadrachalam residential colony.
6. Utilization of waste paper and use this in the manufacture of paperboard to reduce the forest reserve and conservation of resources.
7. Use of paper waste generated in schools, collages and in the head quarters by collecting and sending it to Bhadrachalam for recycling.
8. The company has very high safety standards and ha aimed for zero accidents.
9. The company has TPM (Total Productivity Management) activity for all-round developments. The TPM activity is under the guidance of Japanese expert Mr.IGAMI stationed at Bhadrachalam.
10. ITC-PSPD (Bhadrachalam unit), Primary, Secondary schools and Junior college students have been trained to reduce the wastages on paper, utilization of natural resources and to take care of Mother Nature. Also school student in twin cities are also educated for minimizing wastages.



Safety

The plant has been rated very high in terms of safety. ITC-PSPD (Bhadrachalam unit) always imparts training on Environment & Safety to all the employees to get the maximum benefit.