

Tamil Nadu Newsprint and Papers Limited Kagithapuram – Tamil Nadu

i) Company Profile

Tamil Nadu Newsprint and Papers Limited, known as TNPL is the largest bagasse, an agricultural residue, based paper unit in India presently having an installed capacity of 1,80,000 tpa of Newsprint and Printing & Writing Paper in various combinations. It is a Government of Tamil Nadu Enterprise commissioned in 1985 and is the pioneer in commercially successful production of Newsprint from bagasse in the entire world. Recognizing the pioneering effort, World Bank had extended a loan of US \$ 100 million through IDBI in 1981 and based on its performance, World Bank for the first time directly financed the Company to the tune of US \$ 75 Million for its expansion project in 1993 for enhancing capacity from 90,000 tpa to present level.

Notwithstanding the highly fluctuating market conditions of paper in India, TNPL has been achieving consistently high capacity utilisation of over 100% and an unique record of "ZERO STOCK" at the end of each financial year since 1989-90, except for 1997-98. TNPL is an ISO 9001 and ISO 14000 certified company with its commitment to satisfy customers with products developed using eco-friendly raw material and at competitive prices. Environmental solution with an approach of sustainable development has always drawn top priority at TNPL.

ii) Energy Consumption

Cost of Energy in TNPL reduced substantially over manufacturing cost for the last 3 years, which is a good achievement specially for a Newsprint and Printing & Writing Paper Manufacturing mill with 70% Bagasse as raw material. The details of Energy cost for the last 3 years are given below:

		<u>2002-2003</u>	<u>2003-2004</u>	<u>2004-2005</u>
Finished Production	(Tons)	1,67,878	1,82,215	1,96,241
Sales Turn over	(Rs. In Lakhs)	53,986.82	58,359.62	67,128.52
Manufacturing Cost	(Rs.in Lakhs)	28,613.84	33,548.71	44,448.05
Power Cost	(Rs.in Lakhs)	4,772.90	5,052.39	5,991.87
Fuel Cost	(Rs. in Lakhs)	3,815.26	4,179.26	4,519.66
Energy Cost	(Rs.in Lakhs)	8,588.16	9,231.65	10,511.53
Energy Cost over Manufacturing Cost	(%)	30.01 %	27.52 %	23.65 %
Power/ton of Paper	(Kwh)	1,760	1,660	1,525

- ⇒ Specific Power consumption is for Newsprint and Printing and Writing Paper combine. The Power consumption is high for Newsprint.
- ⇒ The raw material is bagasse 70%, wood 30%. The Power consumption is high for Bagasse Paper.

iii) Energy Conservation Commitment, Policy and Setup

The Company has fixed target of reducing Specific Energy Consumption by 5% each year for 4 years to reach International Norms at the end of 4 years.

The Company has constituted Energy Conservation Cell consisting of DGM(Utility), Chief Manager (Utility), Chief Manager (Electrical), Manager (Offsite), Manager (Pulp) & Sr.Plant Engineer (Paper Machine). The cell will work under Director (Operations) I/c, the Chief of the Mill. The Cell meets once in two months to review the operating parameters of energy, which are prepared and monitored on daily basis.

The Energy Cell conducts periodically walk through inspection in the mill and record the energy wastage/saving proposals and work out implementation. 5 Members of TNPL have undergone training and Certified as Energy Auditors (2 Members by FICCI and 3 Members by Fuel Users Association).

iv) Energy Conservation Achievements

Paper Industry is a highly energy intensive with the energy bills in the range of Rs.50-100 Crores per annum for large size mills. The savings in Energy generation and consumption costs are the major factors for an industry to sustain market fluctuation and profitability.

1) Reduction of Vacuum Pumps Speed

Investment (Rs. Lakhs)	:	0.04
Implemented in Month	:	July 2004
Savings (Rs.Lakhs)		
Per Annum	:	12.90
For 2004-2005	:	8.60

A new Lime Mud Drum Filter installed in Causticizing Plant for augmentation of capacity of White Liquor production. The RPM of vacuum pump supplied with new Lime Mud Drum Filter was much lower than the 2 nos. vacuum pumps running in the existing 2 nos. Lime Mud Drum Filters. The existing 2 nos. vacuum pumps RPM reduced by arranging suitable V-pulleys and savings of about 7.6 Lakh Kwh/annum achieved with performance of the filter remaining the same.

2) Improved dryness of Lime Mud and save Furnace oil.

Investment (Rs. Lakhs)	:	10.00
Implemented in Month	:	September 2004
Savings (Rs.Lakhs)		
Per Annum	:	19.50
For 2004-2005	:	9.75

The waste process hot water at 75°C was used for hot dilution and spraying on lime mud drum filter for recovery of Na₂O and dry lime mud at 50% dryness was fed to Lime Kiln. Arrangements were made to raise water process hot water temperature from 75°C to 95°C by low pressure steam thereby increasing the temperature of lime mud. At higher temperature, lime mud dryness increases and in our case it has improved from 50% to 53%. 3% dryness in lime mud fed to Lime Kiln has saved about 890 Litres of furnace oil per day and annual savings of about Rs.34.66 Lakhs. The investment on system installation and cost of LP steam works out to Rs.15.13 Lakhs. Net savings of Rs.19.50 Lakhs/annum achieved by this project.

3) Waste Effluent Sludge fired in Boiler as fuel

Investment (Rs. Lakhs)	:	15.00
Implemented in Month	:	April 2004
Savings (Rs.Lakhs)		
Per Annum	:	57.60
For 2004-2005	:	57.60

Arrangements were made to dry and fire waste effluent sludge generated in Effluent Treatment Plant. About 16,545 tons of waste effluent sludge fired in the boiler during 2004-2005 which is equivalent to 2400 tons of coal.

(v) Energy Conservation Plans and Target

The target of reducing energy consumption by 5% every year for 4 years is fixed by the company. The Energy Cell and Certified Energy Auditors of the company are regularly inspecting mill sections to find and arrest energy waste. We are propagating awareness among all employees for Energy Conservation.