

HINDUSTAN NEWSPRINT LIMITED

1.0 UNIT PROFILE

Hindustan Newsprint Limited (HNL), a Subsidiary of Hindustan Paper Corporation Limited, a Govt. of India Undertaking operates one of the largest integrated newsprint mills in the country. The mill was commissioned in 1982 with an installed capacity of 80,000 MT/annum, which was raised to 1,00,000 MT/annum in 1993-94 with major modernization and technological upgradation. The highest even production was achieved by the mill in 2003-04, by producing 1,12,555 MT, attaining capacity utilization of 112.6%. HNL's production range consists of different types of newsprint viz. the popular 49 GSM, special 45 GSM and tailor made pink newsprint.

The year 2002 was a milestone for HNL for the plant modernization and technological upgradation. 100 TPD De-inking Plant commissioned in December 2002, is an environment friendly and energy efficient project, replacing 68,000 MT of forest raw material per annum and saving 190 units of electrical energy per MT of Newsprint. The new Quality Control System commissioned in Paper Machine Plant is not only a technological upgradation of the Paper Machine but also resulted in a saving of 2.52 lakh units of electrical energy during the period July 2002 - March 2003. Paper Machine and Pulp Mills were technologically upgraded through the commissioning of DCS in July 2002, which resulted in a saving of 14.30 lakh units of electrical energy during the period July 2002-March 2003.

The company appointed Energy Manager as per the guidelines of EC Act 2001, in August 2003.

Our Company made an aggressive footstep on energy conservation front in the year 2003. An energy conservation study has been conducted with the expertise of an external technical consultant on motors, pumps & fans and the study pointed out tremendous energy saving potential by electronic speed control using variable frequency drives for motors driving pumps and fans. As a result the company sought the approval of Board of Directors for the energy conservation schemes, using VFDs in three phases and the details are shown below in plans & targets.

The energy conservation schemes implemented during the last 3 years are shown in Annexure :II

2.0 ENERGY CONSUMPTION

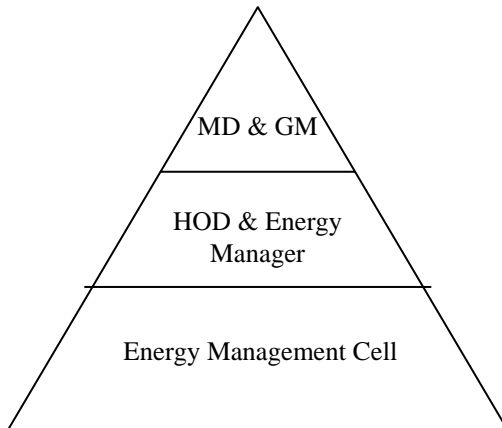
The energy scenario of HNL in the past three years is given below :-

Sl. No	Description	Unit	2001-02	2002-03	2003-04
I	Production of Newsprint	MT	1,00,404	1,00,495	1,12,555
II	a) Electrical energy Purchased	Lakh KWH	1292	1151	1095 997.75

	b) Electrical energy generated thro' TG	Lakh KWH	854.05	932.29	0.47
	c) Electrical energy generated thro' DG	Lakh KWH	0.95	0.71	2093.22
	d) Total electrical energy consumption	"	2147	2084	
	e) Specific energy consumption – Ele.	KWH/MT of Newsp rint	2138	2073	1859
III	a) Coal purchased	MT	1,22,067	1,24,361	1,44,308
	b) Furnace oil purchased	KL	3046	2892	2216
VI	Energy cost as % of Total cost of prodn.	%	28.03	32.80	29

3.00 ENERGY CONSERVATION COMMITMENT, POLICY AND SET UP

Energy Management set up comprises of three groups:



Managing Director and General Manager (Works) of the Company forms the apex group, which indicates the involvement and commitment of the top Management. It gives all necessary support and encouragement for all Energy Conservation activities. The middle group comprising the Department Heads and Energy Manager.

The next is the Energy Management Cell headed by Dy. General Manager (Engg) with cross-sectional representatives comprising of Managers of Production and Maintenance teams of different Plants. The explore the new avenues for energy conservation in all areas, implemented the schemes, look for continuous improvement, conduct train storming discussions and make awareness and involve all employees for the energy saving activities. The Energy Manager co-ordinates the activities of the Energy Management Cell.

4.0 PLANS& TARGETS FOR 2004-05 & 2005-06:

The details of the Energy Conservation schemes through Variable Frequency Drives proposed for 2004-05 & 05-06 are shown below:

Schemes	Completion target	No. of Pumps & fans	Investment Rs: lakhs	Per day saving in kWh	Annual saving lakh kWh	Annual energy cost saving as Rs. lakhs
VFD Phase-I	Sept.04	14	100	7500	24.75	87
VFD Phase-II	Dece.04	31	155	8700	28.71	100
VFD Phase-III, part I	March.05	45	215	8400	27.72	97
VFD Phase- III, part II	March.06	3 (HT drives)	242	6200	20.46	72
Total		93	712	30800	101.64	356

5.0 ENVIRONMENT AND SAFETY

The quality Management System of HNL is certified ISO 9000:2000 and the Environment Management System is certified ISO 14001:1996.

A well structured Safety Department headed by a Manager ensures the effective implementation of Company's health and safety policy, aided by the active involvement and participation of a safety committee comprising of employees from different levels.

HNL utilizes almost entire solid wastes generated by burning the efficient sludge and wood dust in FBC boilers by regenerating lime from the lime mud in a lime kiln and by using the coal fly ash for making cement.

ENERGY CONSERVATION SCHEMES IN 2001-2002

Sl. No.	Scheme particulars	Investment Rs./lakhs	Savings		Value of savings Rs./lakhs
			Electricity	Fuels	
1	2	3	4	5	6
1	Revamping the lighting system in the operating floor of Paper Machine	2.90	18000 kWh	--	0.57
2	Data Logger and Load Management System	22.0	--	--	--
3	Utilisation of effluent sludge, chip dust, Coconut shell and Cashew nut in FBC Boilers	11.43	..	3406.17 MT of coal	70.03
4	Oversize coal transfer conveyor system	27.0	-	-	-
5	Replacement of 5 nos. of reciprocating compressor with a centrifugal compressor	73.0	363120 kWh		11.62
6	Replacement of Pumps & Motors with Energy Efficient ones 1. Booster pump- 90 kW to 75 kW 2. DM Water Transfer pump- 30 kW to 15 kW 3. Paper m/c Vac. Flume Pump – 75 kW to 55 kW 4. Liquor Circulation (LC)Pump – 110 kW to 90 kW – 1 no.	1.38	21120 kWh		0.64
		1.0	13032 kWh		0.39
		3.8	55440 kWh		1.7
		13.50	51620 kWh		1.57
	TOTAL SAVINGS	156.01	522332	3406.17 MT of coal	86.52

ENERGY CONSERVATION SCHEMES IN 2002-2003

Sl. No.	Scheme particulars	Investment Rs./lakhs	Savings		Value of savings Rs./lakhs
			Electricity Lakh KWh	Fuels	
1	2	3	4	5	6
1	Procurement of Variable Frequency drive for Saveall and Thickener in Paper Machine	10	0.79	..	2.84
2	Procurement of variable frequency drive for unbleach and bleach washer	11	1.18		4.28
3	By passing warm water tank pump	0	1.18		4.28
4	Reduction of voltage of lighting transformer	0	0.105		0.378
5	Reduction of idle running of grandis and hybrid lavellingscrews	0	0.349		1.25
6	Calcoil for new QCS in Paper Machine	550	2.52		9.07
7	Commissioning of DCS in Paper Machine & pulp Mills	800	14.3		51.48
8	100TPD Deinking Plant , which is an energy efficient environment friendly project, replacing 68000MT of forest raw material per annum	5220	76.1		273.96
9	Two Refiners, one pump & agitator in the CMP stream of Paper	0	26.4		95.04

Sl. No.	Scheme particulars	Investment Rs./lakhs	Savings		Value of savings Rs./lakhs
			Electricity Lakh KWh	Fuels	
1	2	3	4	5	6
	Machine were by passed by maintaining the freeness in CMP plant, saving 800 units per day.				
10	Use of Effluent Sludge, wood fines & Cashew nut shell as fuel	24.85	5481.07 MT of coal	112.69
	TOTAL SAVINGS	6591	122.92	5481.07 MT of coal	442.58

ENERGY CONSERVATION SCHEMES IN 2003-2004

Sl. No.	Scheme Description	Investment	Anticipated Annual Energy savings	Annual Energy Cost savings @ Rs 3.60 per unit
I	SCHEMES IN PROGRESS			
1	New Trim Pulper with Cyclone separator in Paper M/c Plant	Rs. 26 Lakhs	2.31 lakhs units	Rs. 8.31 lakhs
2	Replacement of Secondary Cleaners Feed Pump (400 KW Motor) in Paper M/c Plant by Energy Efficient Sulzer Pump with 250 KW Motor.	Rs.18.13 lakhs	7.44 Lakhs units	Rs. 26.8 Lakhs
3	Replacement of Liquor Circulation Pump (110 KW Motor) in CP Plant with Energy Efficient Sulzer Pump with 90 KW Motor.	Rs. 13.77 Lakhs	52,800 units	Rs. 1.90 Lakhs
4	Energy Conservation for 14 Pumps (including one 3.3KV motor) by retrofitting Variable Frequency Drives- Phase I	Rs 100.90 Lakhs	24.64 lakhs units	Rs. 88.70 lakhs
5	Energy Conservation for 31 Pumps & Fans (all LT motors) by retrofitting Variable Frequency Drives - Phase II	Rs. 200 Lakhs	28.18 Lakh Units	Rs 101.45 Lakhs.
6	Replacement of dyno drives by Induction motors with Variable Frequency drives for Wood stream No.1 in Chipper House.	Rs.12.50 lakhs	73920 units	Rs.2.66 lakhs
	Total	Rs.371.30 lakhs	63.82 lakh units	Rs.229.82 lakhs
II	IMPLEMENTED SCHEMES			
1	Replacement of 7.5 KW, 3000 rpm motor with 3.7 KW ,1500 rpm motor with VFD for 551-08, Soup Pump to CP	Rs.50000	21250 units	Rs.76500/-
2	VFD for Paper Machine Wet End Cooling Fan (851-292	--	118800 Units	Rs.4.27 Lakhs
3	Replacement of Broke Chest No.1 Jessop Agitator with 45 KW Motor by Energy efficient Sulzer Agitator with 37 KW motor,811-37	Rs.11 Lakhs	154800 units	Rs.5.57 Lakhs
4	Replacement of 27 Nos. of 7 W Indication lamps and 54 Nos. of 15 W Indication Lamps in 3.3 KV panels of Paper Machine with LED Indicating lamps	Rs.16200/-	7920 units	Rs.31504
5	Avoid running requirement of 2 Nos. CW pumps by mounting higher dia -meter Impeller in Cooling water Pump,291-022, in Utilities.	Rs.135000	415140 units	Rs.14.95 Lakhs

6	Usage of Effluent Sludge, Wood dust and Cashew nut shell	Rs.5.93 lakhs	Equivalent to 5558 MT of coal	Rs.100.5 lakhs
	Total	Rs.18.94 lakhs	7.17 lakhs kWh & 5558 MT Coal	Rs.126.36 lakhs