

## Nahar Industrial Enterprises Limited Patiala

### UNIT PROFILE:

Nahar fabrics ltd. is a unit of Nahar industrial enterprises. Nahar is one of the leading industrial houses of the country. Nahar fabrics is a weaving and processing unit. We make cotton fabric and then dye it. It sells under the brand name of **Monte Carlo**. We have the latest state of the art imported machinery from Germany, Italy, Israel etc.

### ENERGY CONSUMPTION:

There has been a steady decrease in Electrical and Thermal Energy consumption per ton of fabric due to implementation of various energy conservation measures.

DESCRIPTION	UNIT	2001-2002	2002-2003	2003-2004
ANNUAL PRODUCTION	<u>Kmtr</u>	13464	18090	20225
TOTAL ELECTRICITY CONSUMPTION/YEAR	Lakhs kWh	292.75	324.63	314.05
THERMAL ENERGY CONSUMTION/YEAR	Mcal	3223.4	3815	3305
SOFT WATER CONSUMTION/YEAR	Kltrs	762764	662652	565346
LPG CONSUMPTION/YEAR	<u>Kg</u>	231366	275310	219660

YEAR	ELECTRICITY		<u>THERMAL ENERGY</u>		<u>SOFT WATER</u>		<u>LPG</u>	
	Consumption (Kwh/MTR)	% Reduction over 2001-2002	Consumption (MCal/MTR)	% Reduction over 2001-2002	Consumption (Kltrs/Kmt>ir)	% Reduction over 2001-2002	Consumption (Kg/tonne)	% Reduction over 2001-2002
2001-2002	2.17		0.239		56.65		17.18	
2002-2003	1.79	17.51%	0.211	11.71%	36.63	35.13 %	15.25	11.23.0 %
2003-2004	1.55	28.57%	0.163	31.79%	27.95	50.40 %	10.86	36.78 %

## **ENERGY CONSERVATION COMMITMENT, POLICY AND SET UP:**

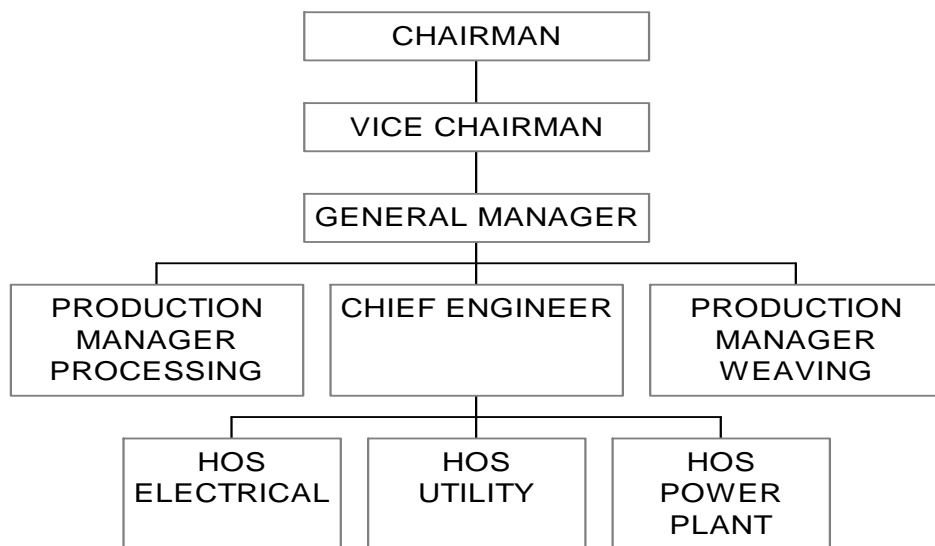
Nahar Fabrics Ltd. considers energy saving as a multi disciplinary approach. The company's energy profile consists of Electricity, Gas, Furnace oil and Water. Budget provisions are made exclusively for Energy projects. Energy conservation plans, policy and structure are reviewed periodically. Energy conservation week is celebrated every year from 14<sup>th</sup> December to 21<sup>st</sup> December. A poster and slogan competition on energy saving and in house seminar is conducted. The importance of energy conservation is emphasized through various forums.

## **ENERGY MANAGEMENT POLICY:**

We at Nahar Fabrics, Unit of Nahar Industrial Enterprises limited are committed to:

1. Prevent wastage of energy in any mode either by steam, water, air, power by efficient use of resources, treatment and operational control.
2. Make continual improvement through our energy management performance by controlling and reduction in consumption and wastage.
3. Comply with all applicable legislation's and regulations on energy conservation and environment.

### **ENERGY CONSERVATION CELL**



## **ENERGY CONSERVATION ACHIEVEMENTS**

During the period 2001-2004 Nahar Fabrics Ltd. has implemented around 10 major energy conservation and lot of small energy saving proposals through Engineering initiatives, workmen's suggestion schemes, auditors suggestions resulting into savings of around 700 Lakh by spending around Rs 4 Crore. This has resulted in reduction of 28.57% electricity and 31.79% reduction in Thermal energy consumption. In water conservation we have excelled by reducing the water consumption to 50.40%.

## MAJOR PROJECTS IMPLEMENTED DURING THE YEAR 2003-2004

### 1) INSTALLATION OF 5 MW CO-GEN PLANT INPLACE OF DIESEL GENERATOR AND ELECTRICITY BOARD SUPPLY

Electricity charges bought from Electricity board	: 3.70 Rs/unit
Electricity charges from the TG set	: 2.20 Rs/unit
Saving in Rs terms	: 1.50 Rs/unit
Avg. Daily unit generation	: 1.08 lakh units
Saving in Rs terms	: 1.6 lakh per day



### 2) CONVERSION OF FO THERMOPAC INTO HUSK THERMOPAC

FO consumption per day	: 4500 ltr
FO charges per day @ 14.10 Rs/ltr	: 63450 RS
FO charges per year	: 23159250 RS
Husk consumption per day	: 16.5 ton
Husk charges per day @ Rs 1500 per ton	: 24700 Rs
Saving per day	: 38450 Rs
Saving per year	: 14143750 Rs



### 3) INSTALLTION OF A.C VARIABLE FREQUENCY DRIVE ON CIRCULATION PUMPS AND COLOUR TANK STIRRERS:

Circulation pumps are used to circulate chemicals in machine chambers. The flow was controlled by closing the ball valves. We have installed ac drives instead of ball valves for flow control.

Stirrers are installed on color tanks and are used for mixing the colors. We installed ac drives to control the speed, as it is not necessary to run the stirrers at full speed.

Installation investment	: 1 lakhs
Total load of motors	: 30 kw
After installation energy saving	: 15.75 kWh
Per day saving	: 378 kWh
Per year saving	: 137970 kWh
Per year saving Rs @ 3.7 Rs	: 510489 Rs



#### **4) PUMP HOUSE MODIFICATION**

Soft water is used in the machines. Earlier the water was supplied via motors directly and the pressure was maintained at 4 kg/cm<sup>2</sup>.

We installed PID control valve on the water line and thus were able to reduce the water pressure to 2.2 kg/cm<sup>2</sup> resulting in saving of water and electricity used to run the pump motors.

Water consumption before modification	: 3000 KL per day
Water consumption after installing PID Control Valve on water line	: 1700 KL per day
Saving of water	: 1300 KL per day
Saving in kWh	: 700 per day
Saving of power in Rs terms per day @ Rs 3.7	: 2590 Rs
Saving per year	: 945350 Rs
Saving per day @ 5 Rs per KL	: 6500 Rs
Saving per year	: 2372500 Rs
Total saving of project	: 3317850 Rs



#### **5) OTHER PROJECTS**

- We have modified the steam supply system of the drying range of the machines, which are used to dry the fabric after passing it through the washing chambers. Earlier steam was supplied directly to the cylinders without any control. We installed residual moisture controller on the machine. This system controls the steam supply to the cylinders of the drying range as per the setting of the residual moisture. This resulted in the saving of steam on the machines.
- Installation of temperature controllers on the cooling towers fans.
- Use of lower wattage tubes in Adm. block and sub stations.
- Stoppage of half the streetlights at midnight by installing timers.
- Removal of unwanted motors.



## **ENERGY CONSERVATION PLANS AND TARGETS**

<b>ENERGY CONSERVATION MEASURES (PLANNED)</b>	<b>ANTICIPATED SAVINGS IN ENERGY (Rs Lakhs/yr)</b>	<b>APPROX. INVERSTMENT (Rs Lakhs)</b>	<b>PROJECT COMMENCEME NT &amp; COMLETION YEAR</b>
Chemical dosing pumps to be removed by installing storage tanks at height and using gravity for dosing	1.59	0.5	2004
Lawer color kitchen stirrers inverter installation	4.32	1.8	2004
Soft water overhead tank construction	10	14	2005
Inverter installation on FD and ID SA fan pumps	33	14	2004
Inverter installation on Thermopac ID and FD fan pumps	6.5	3.5	2004

## **ENVIRONMENT AND SAFETY:**

Nahar is committed to the protection of the environment by prevention of pollution and continual improvement in the environment performance. The company has successfully installed environment management system and got the certification of ISO 14001. During the process of implementation of ISO 14001 following efforts were undertaken and on going efforts are continuously on as per the environment policy.

- Prevent pollution through efficient use of resources, treatment And control.
- To make continual improvement in our environmental performance by controlling emission, effluent waters and waste.
- To comply with all applicable rules and regulations.

The company has installed an effluent treatment plant for treatment of effluent water. Pollution control board continuously monitors this ETP plant.

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*( S.S.AICH )  
General Manager*

**ENERGY CONSERVATION CELL**

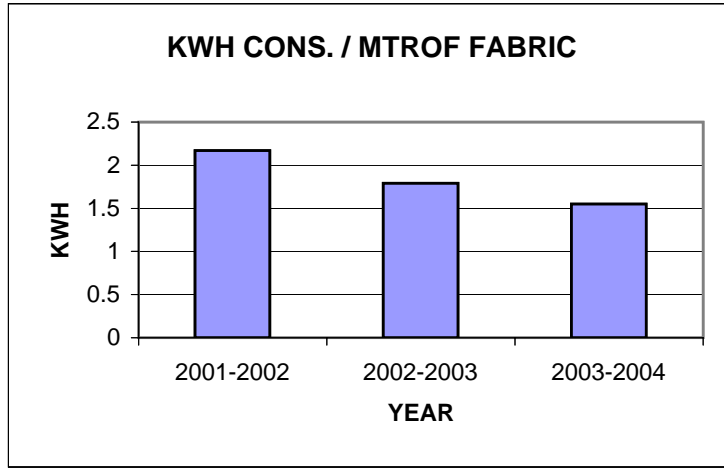
*(Management Representatives)*

1. *Chairman* : *General Manager*
2. *M.R.* : *Chief Engineer*
3. *Asst. M.R.* : *Chief Engineer ( Utility)*
4. *Member* : *H.O.S.(Electrical)*
5. *Member* : *H.O.S.(Utility)*
6. *Member* : *H.O.S.(Power Plant)*
7. *Member* : *Production Manager (Weaving)*
8. *Member* : *Production Manager(Processing)*

*(S.S.AICH)*  
*General Manager*

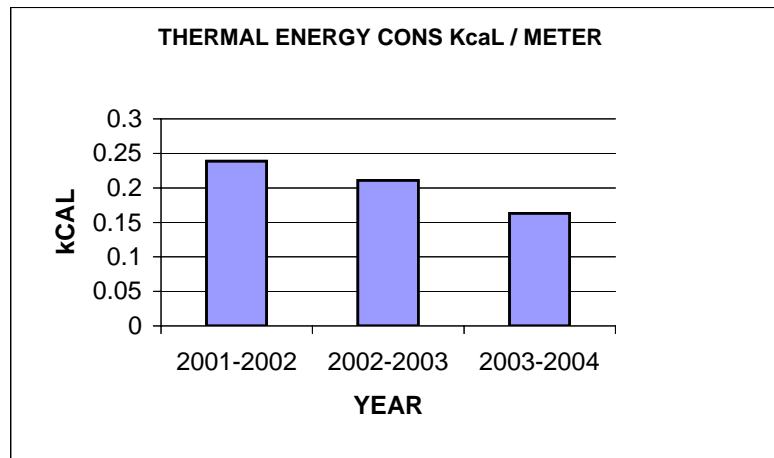
KWH

2001-2002	2.17
2002-2003	1.79
2003-2004	1.55



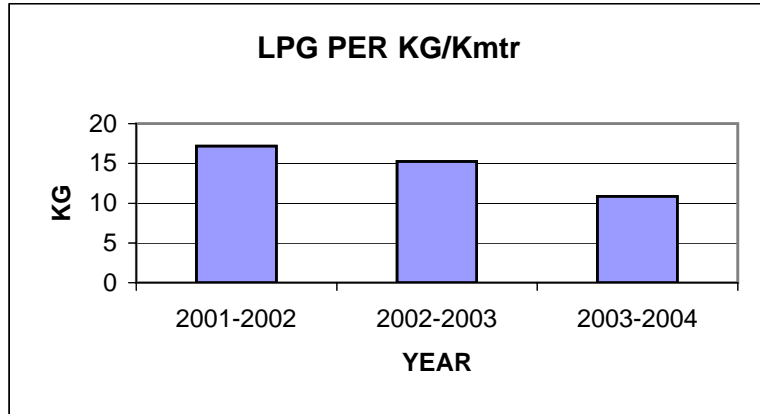
THERMAL ENERGY

2001-2002	0.239
2002-2003	0.211
2003-2004	0.163



LPG

YEAR	KG/Kmtr
2001-2002	17.18
2002-2003	15.25
2003-2004	10.86



WATER

YEAR	WATER CONS. KL /TONE
2001-2002	56.65
2002-2003	36.63
2003-2004	27.95

