



DCW - manufacturers of chemicals that
make industries hum

DCW LIMITED

(DHARANGADHRA CHEMICAL WORK LIMITED)

- **DCW Ltd is a chemical complex situated at Sahapuram, Thoothukudi (Dist), established in the year 1959**
- **The products manufactured are Salt, Caustic soda, Liquid Chlorine, Trichloro Ethylene, Hydro Chloric acid, Beneficiated Ilmenite, PVC Resin and Captive Generation of Power.**
- **The Complex with residential colony is situated in an area of around 2400 Acres.**

THE MAJOR MILE STONES

- 1959 CAUSTIC SODA PLANT**
- 1965 LIQUID CHLORINE PLANT.**
- 1967 TRI CHLORO ETHYLENE PLANT.**
- 1970 BENEFICIATED ILMENITE**
- 1983 REVAMPED PVC DIVISION ALONG WITH VCM INSTALLATION**
- 1991-1996 CAPTIVE POWER PLANT.**

CAUSTIC SODA DIVISION capacity of plants

PLANT	PRODUCT	ANNUAL PRODUCTION
➤ SALT	Industrial salt	1,30,000 MT
➤ CAUSTIC SODA	Lye	60,000 MT
	Flakes	30,000 MT
	Solid	250 MT
	HCl acid	26,000 MT
	Sodium Hypo chlorite	3,000 MT
➤ CHLORINE	Liquid Chlorine	22000 MT
	Tri Chloro Ethylene	4800 MT
➤ ILMENITE	Beneficiated	
	Ilmenite	40,000 MT

PVC DIVISION INSTALLED CAPACITY

➤ PVC RESIN

90,000 MTA

CAPTIVE POWER PLANT

➤ Installed capacity: 6 Nos. 6 MW = 36 MW

➤ Power 27.5 MW

For captive consumption

➤ STEAM by WHRB 12.5 TPH

(Installed capacity)

For captive consumption

ENERGY CONSERVATION WEEK
(14TH TO 20 TH DEC 2003)

DCW LIMITED
SAHUPURAM WORKS



Mr.Mudit Jain

President, DCW

ENERGY MANAGEMENT POLICY

Released

ENERGY MANAGEMENT POLICY

At **DCW**, total energy management is an integral element of its business of manufacturing Chlor-Alkali Chemicals, Synthetic Rutile and PVC Resin.

In pursuit of the above, Sahupuram Works is committed to:

- 1. Introduce** appropriate technology and innovative measures to conserve energy and prevent energy wastage in its manufacturing processes and support services.

ENERGY MANAGEMENT POLICY

- 2. Initiate** and implement energy efficient practices in plant operations and maintenance to achieve value addition to energy conservation efforts;
- 3. Implore** and encourage greater application and use of non-conventional renewable energy sources;
- 4. Improve** and upgrade energy management performance continually by adherence to sound systems and practices, appropriate conformances to standards and conduct of regular energy audits to assess status and bridge gaps;

ENERGY MANAGEMENT POLICY

5. **Impart** training to all personnel for enhancing their awareness towards energy conservation and instill in them a culture for optimization and continuous improvement in energy management actions;
6. **Institute** effective systems for recognizing employees for their contributions to energy conservation and management;
7. **Interact** with industry to share gains and assimilate noteworthy successes achieved in energy management for benchmarking its initiatives and performances;

ENERGY CONSERVATION CELL STRUCTURE

PRESIDENT

VICE PRESIDENT

Sr. GENERAL MANAGER (Manufacturing)

GENERAL MANAGER (ELECTRICAL)

ENERGY MANAGER

Dy.MANAGER (ELECT)

Dy.MANAGER (INSTRUMENT)

Senior Engineer (Elect) 3 Nos.

Asst. Engineer (Elect) 3 Nos.

Electrical supervisors

Work men

Shift Electrical
Engineers

Engineer (Inst)

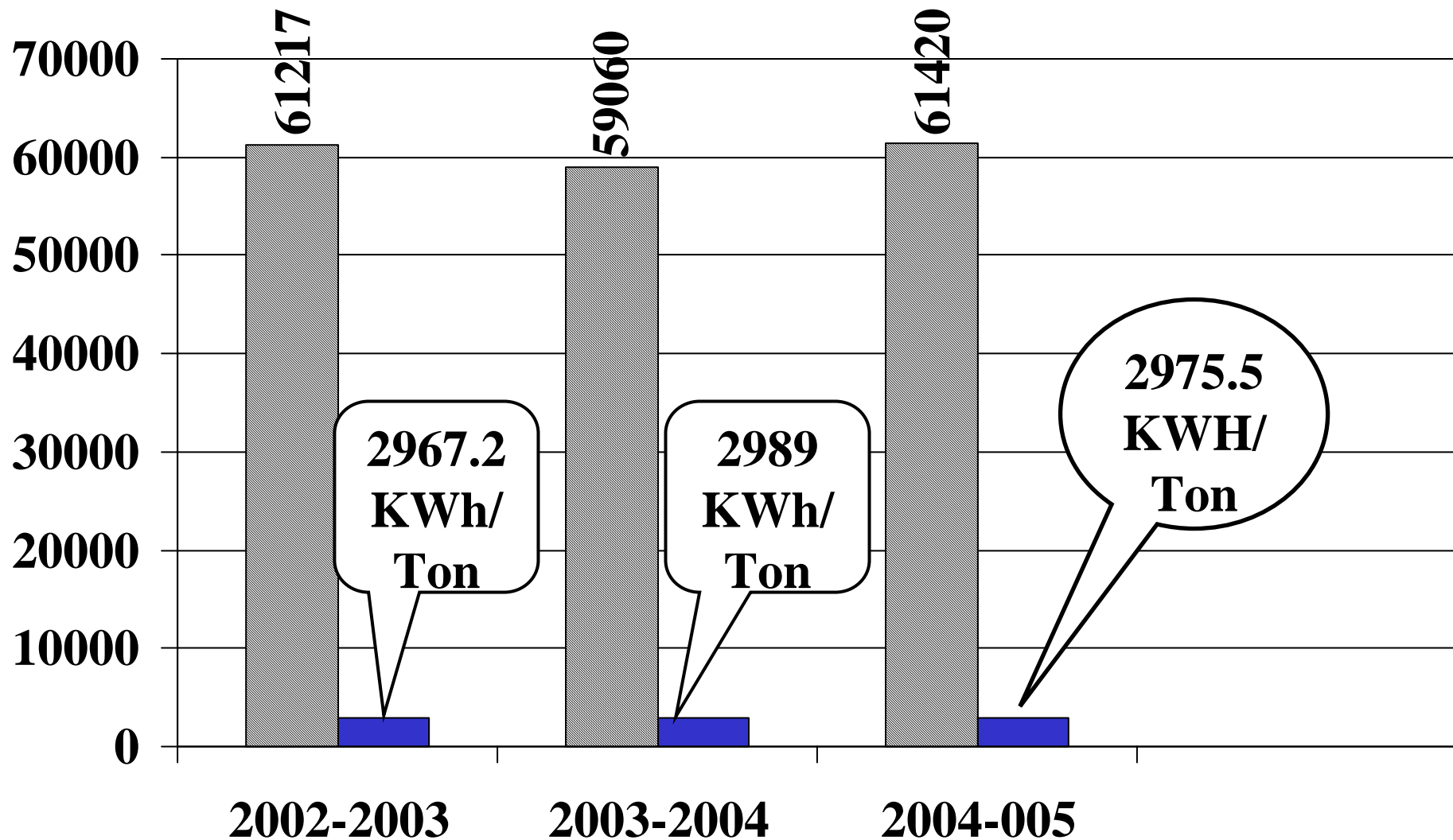
Asst. Engineer (Inst)

Instrument supervisors

Work men

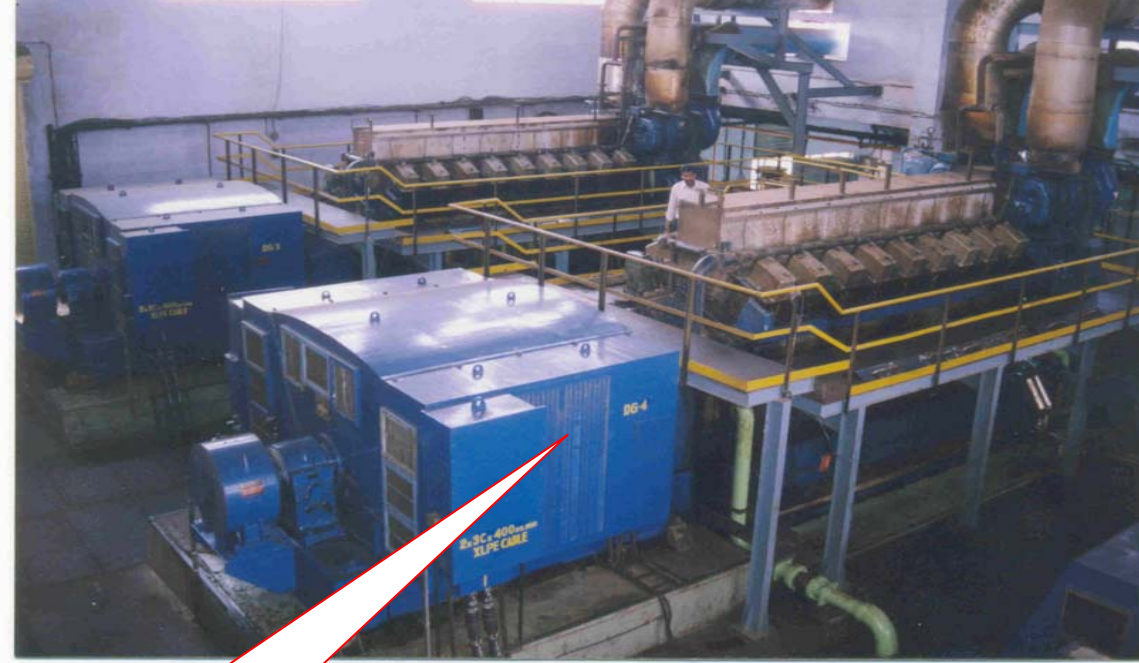
ACTUAL CAUSTIC SODA PRODUCTION AND SPECIFIC ENERGY CONSUMPTION (Kwh/Ton)

FOR THE YEAR 2002 - 2005



CIP 22 / 08.04.2004 / 8

Let out the hot air inside DG room to outside the DG building, minimizing inside room temperature, which in turn reduce operation of fresh air supply fans.



Before Duct

After Duct



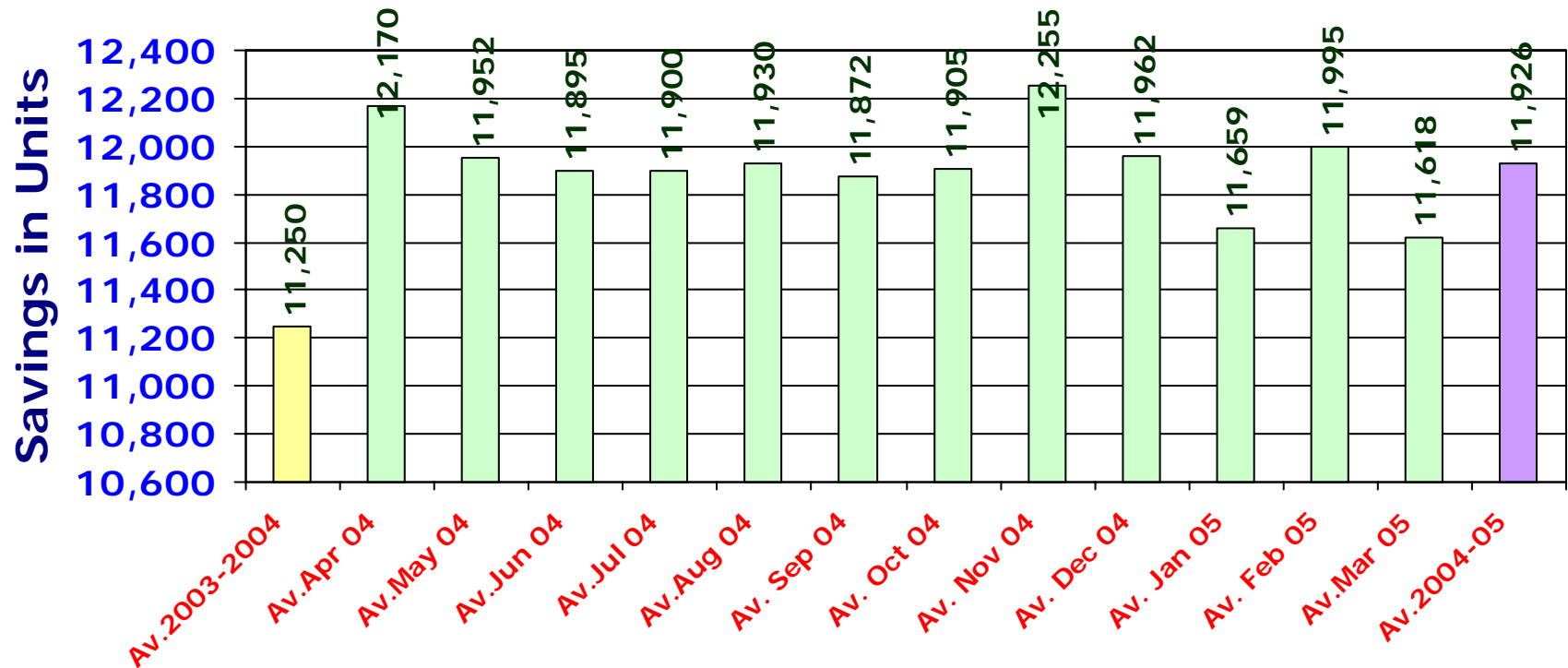
Investment- GI Sheet material for ducting, fabrication and erection worth Rs.2.5 Lacs.

Power Savings: 2,500 units x 365 days x Rs.2.85 = Rs.2,600,000/-

✓EQUIPMENT UTILIZATION

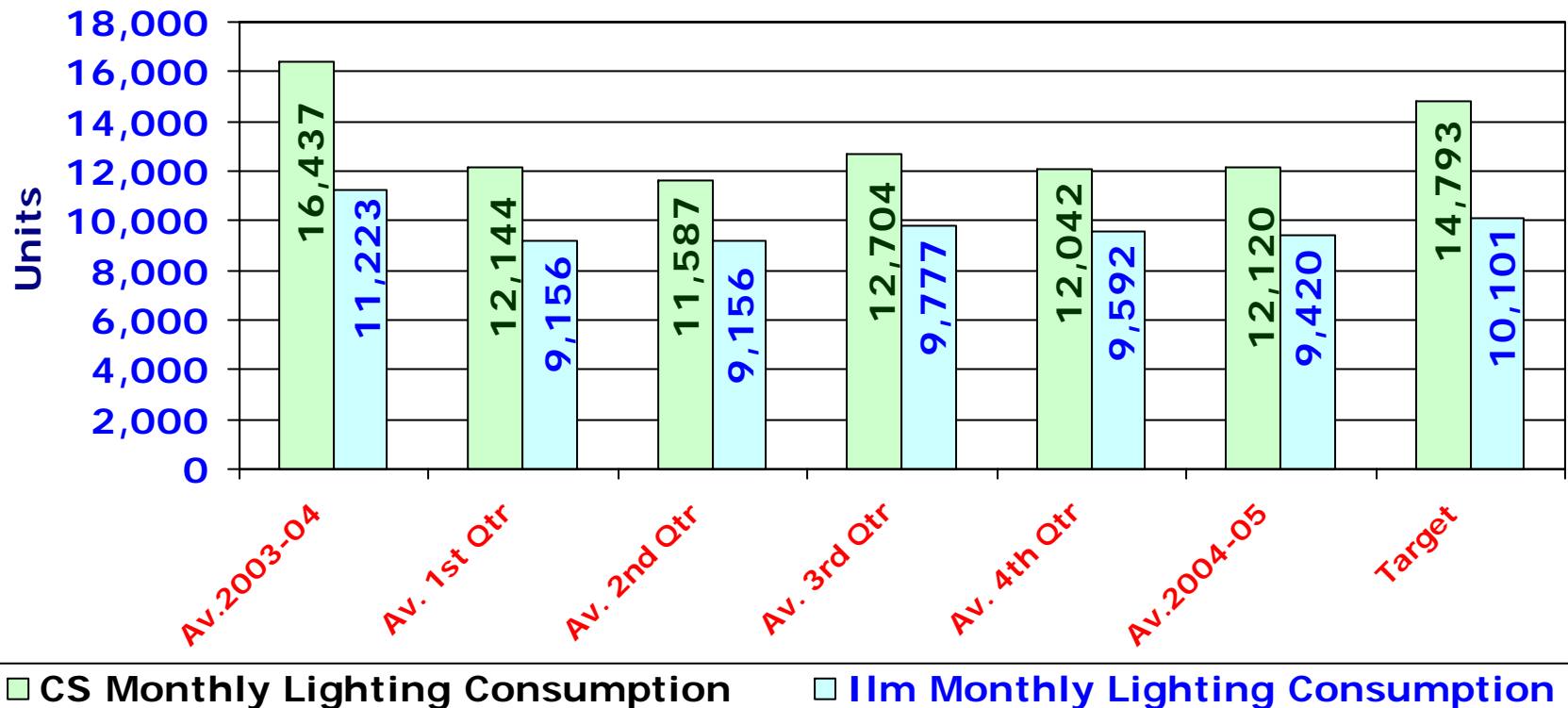
Improving the Daily Savings of **Supermizers** (Variable AC Drive) from 11,540 units to 12,000 units per day in 2004 - 2005

Target – To increase to 12,000 units per day



✓ POWER CONSUMPTIONS

Target to reducing the Caustic Soda (CS) & Ilmenite (IIM) Lighting Consumptions by 10 % from the current level of 16,437 units in 2003-04 (CS) & 11,223 units (Ilmenite) per month



REDUCING THE POWER CONSUMPTION IN NON TECHNICAL AREA

Month	Canteen	Central Lab	CS Stores	Main Office
Av. 2003-04	286	108	29	307
Apr-04	276	111	30	349
May-04	289	97	25	334
Jun-04	212	110	26	307
Jul-04	204	104	26	298
Aug-04	197	89	25	289
Sep-04	207	95	26	290
Oct-04	214	99	22	280
Nov-04	223	101	15	251
Dec-04	229	95	15	266
Jan-05	216	99	17	267
Feb-05	233	105	25	311
Mar-05	225	105	26	313
Target, 2004-05	279	106	28	300
Av. 2004-05	226	101	23	296

Energy conservation Through Replacing conventional ceiling fan by Energy efficient Hawells make ceiling fan (E - 50)

Date of Installation	Location	Quantity
02.05.05	Fusion Electrical work shop staff room	1
02.05.05	Fusion Electrical work shop staff room	1
02.05.05	Rubber lining plant	1
02.05.05	Brine plant engineer room	1
24.06.05	GM (Electrical Room)	1
24.06.05	Rubber lining plant	3
28.06.05	Sr.Engineer Room	1
21.06.05	Canteen	4
27.06.05	Canteen	2
21.06.05	Time office	2
22.06.05	Stores	1
24.06.05	Inside weigh bridge	1
Total		19
Savings in watts per fan (65.268 - 41.89)		23.37 Watts
Total savings = (19* 23.37)		444 Watts

ENERGY SAVINGS THROUGH REPLACEMENT OF CONVENTIONAL TYPE COOLING TOWER BY FANLESS TYPE COOLING TOWER

SL.No.	Name of the application	Plant	Power capacity before Energy conservation per equipment	Power capacity After Energy conservation	Savings per Equipment maximum load condition	Running Hours per year	Savings per year in Kwh	Total savings per year IN Kwh
1	Replacement of conventional cooling Tower by Fanless cooling Tower (3 Nos fan motor)	TCP	10 KW	Equipment Removed	8 KW	8400	134400	268800
2	Replacement of conventional type cooling Tower by Fanless cooling Tower (fan motor 1)	C / H	15 KW	Equipment Removed	12 KW	8640	103680	103680
3	Replacement of conventional type cooling Tower by Fanless cooling Tower (fan motor 2)	C / H	15 KW	Equipment Removed	12 KW	8640	103680	103680
4	Replacement of conventional type cooling Tower by Fanless cooling Tower (fan motor 1)	Hcl	20	Equipment Removed	18 Kw	4320	77760	77760
5	Replacement of conventional type cooling Tower by Fanless cooling Tower (fan motor 2)	Hcl	20	Equipment Removed	18 KW	4320	77760	77760
6	Replacement of conventional type cooling Tower by Fanless cooling Tower (fan motor 3)	Hcl	15	Equipment Removed	12 KW	4320	51840	51840
7	Replacement of conventional type cooling Tower by Fanless cooling Tower (fan motor4)	Hcl	15	Equipment Removed	12 KW	4320	51840	51840
8	Replacement of conventional type cooling Tower by Fanless cooling Tower (fan motor4)	LCP	15	Equipment Removed	12 KW	4320	51840	51840
9	Replacement of conventional type cooling Tower by Fanless cooling Tower (fan motor4)	LCP	15	Equipment Removed	12 KW	4320	51840	51840

NEW ENERGY CONSERVATION PROJECT PROPOSED FOR THE YEAR 2005 –2006

- CONVERSION OF MERCURY CELL PROCESS IN MEMBRANE CELL PROCESS FOR MANUFACTURING OF CAUSTIC SODA.**
- SAVINGS IN SPECIFIC ENERGY CONSUMPTION PER TON OF CAUSTIC SODA IS 896 DC KWh (DIRECT CURRENT KWh)**

SL. NO.	Description	Mercury cell process	Membrane cell process	Savings
1	Power consumption for caustic Lye production	2975 KWh / M.Ton	2347 KWh/ M. Ton	628 KWh /M.Ton



SAHUPURAM WORKS

ENVIRONMENTAL POLICY


At **DCW**, environmental concern is an integral part of its business of manufacturing Chlor-Alkali Chemicals, Synthetic Rutile, PVC Resin and derived value-added products.

In pursuit of the above, Sahupuram Works is committed to :

- ❖ Comply with applicable legal and other requirements relating to the environmental aspects of its activities, products and services;
- ❖ Conserve energy and natural resources by adopting appropriate technology and measures to prevent pollution;
- ❖ Create environmental awareness by teamwork, training and meaningful communication;
- ❖ Continually improve environmental performance by adopting an environmental management system conforming to the requirements prescribed in ISO 14001:2004.

DCW Stores – I

Illuminated by Solar natural light



$9 \times 2 \times 52 \text{ Watts} =$
 $936 \text{ watts} \times 8 \text{ hrs}$
 $= 7488 \text{ w} =$
 $7.488 \text{ units} \times 2.75 \text{ Rs}$
 $= 20.59 \text{ Rs.}$

Annual savings
 $= 20.59 \times 365$
days = 7515.35

DCW Stores – II

Illuminated by natural solar light





SOLAR ENERGY USAGE IN DCW GUEST HOUSE BY INSTALLING SOLAR WATER HEATER SYSTEM

Simple analysis

Number of geysers Installed earlier	12 Nos.
Capacity of each geysers	2 Kw
Hours of utilization per day	1 Hr
Cost of power	2.75 Rs.
Cost savings For 2 years (After installation of Solar water heater) $12*2*1*2.75 \text{ Rs/ Unit}*360*2 \text{ years}$	Rs.47,520