

Kanoria Chemicals & Industries Limited (KCI)

Kanoria Chemicals & Industries Limited (KCI) is an ISO 9001 and ISO 14001 certified, leading manufacturer of chemical intermediates in India.

KCI has two manufacturing facilities, one at Renukoot in Uttar Pradesh, which manufactures Chlor-Alkalis, Chlorine derivatives and water treatment chemicals; and the second at Ankleshwar in Gujarat, which manufactures Alcohol based intermediates. The company's portfolio comprises of over 15 products, with a market leadership in three and substantial shares in all others. KCI also operates a 25MW thermal power plant in Renukoot, and enjoys cost advantage as a result of backward and forward integration.

KCI has been rated 'CRISIL GVC Level 3' for its strong capability with respect to wealth creation for all its stakeholders while adopting sound corporate governance practices.

KCI steadfastly believes in the core values of sustainability, transparency, ethical business practices, and maintaining high standards of corporate governance. The company's vision statement "To be India's leading manufacturer of chemical intermediates with a focus on sustainability and transparency" summarises its ethos.

The Indian Chemicals Manufacturers Association (ICMA) has awarded Kanoria Chemicals & Industries Limited (KCI) the prestigious ICMA Award for Water Resource Management in Chemical Industry for the year 2003-04. In addition, KCI has also been awarded the ICMA D.M. Trivedi Award for Introducing Advancement in Technology having a Widespread Impact on Chemical Industry for the year 2003-04, through a certificate of merit.

KCI was awarded the TERI Award for Corporate Excellence in Environment Management for the year 2003-04 in recognition of its leadership efforts towards environmental management and sustainable initiatives.

Chloro
(Located at Renukoot in the state of Uttar Pradesh) Division



This division manufactures Caustic Soda as the main product; and Liquid Chlorine, Hydrochloric Acid, and Hydrogen as by-products; and Stable Bleaching Powder, Lindane and its formulations, Aluminium Chloride, Trichlorobenzene and Chlorinated Paraffin wax as forward integrated products.

The division also has the company's 25 MW captive thermal power plant at Renukoot and its Salt Works at Gandhidham (Gujarat), which supplies part of the industrial salt required for the manufacture of Caustic Soda.

KCI's Renukoot facility is situated in a township spread over 335 acres, which also accommodates a school, hospital, temple, guesthouse, staff quarters and clubhouse.

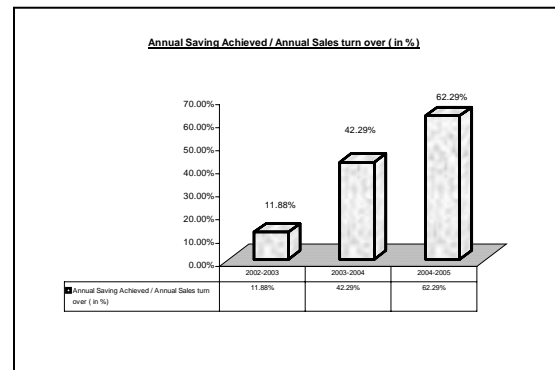
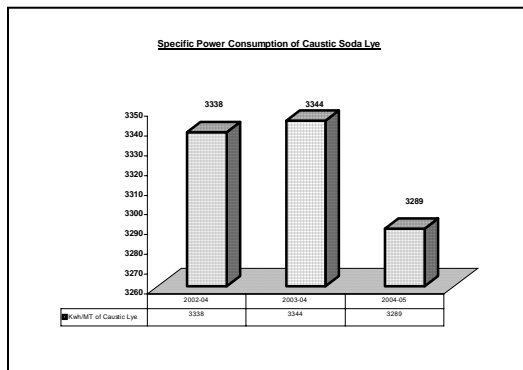
ENERGY MANAGEMENT POLICY

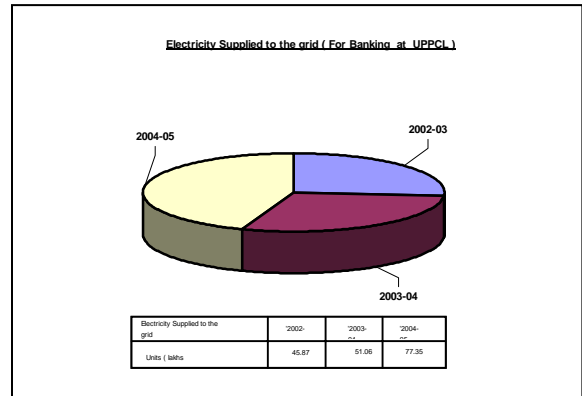
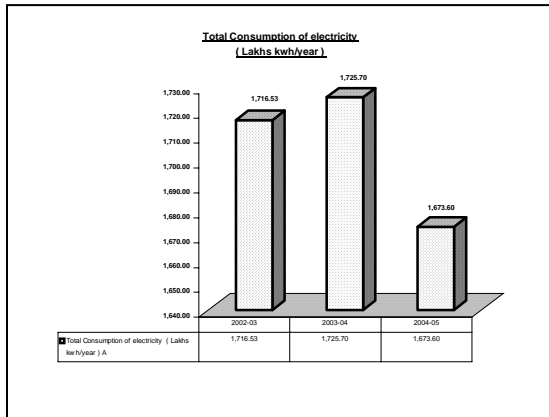
At KCIL, We are committed to minimize the specific energy consumption by dedicated efforts at all levels of the organization.

Energy Consumption

SPECIFIC POWER CONSUMPTION DETAILS	UNIT	2002-03	2003-04	2004-05
Annual Production (Caustic Lye)	Mt	47570	47957	47166
Total Energy Consumption per Annum	Kwh (Lakhs)	1587.89	1603.69	1546.15
Total Manufacturing Cost	Rs. Lakhs	3334.50	3977.45	4111.85
Total Energy Cost	Rs. Lakhs	2124.79	2316.89	2324.53
Energy Cost as % of Raw Material Cost	%	63.7	58.25	56.53
DC Electrolysis Consumption	Power Kwh/MT	2929	2928	2910
AC Rectification Consumption	Power Kwh/MT	3051	3050	3031
Steam Consumption	MT/Year	7766	10196	6680

GRAPHICAL PRESENTATION OF SPECIFIC ENERGY CONSUMPTION





Energy

Conservation Plans & Targets

Energy Saving Measures	Expected Savings (Rs Lakhs/Yr)	Investments (Rs. Lakhs)	Project Completion by (Year)
Membrane Cell First Phase Expansion	524	1000	2005-06
Membrane Cell Expansion Second Phase	524	1000	2007-08

Environment & Safety

KCIL is a 9001-2000, 14001 & 18001 certified company with separate safety & Environment department maintains which ensure that all safety & environment norms are followed as per the statutory guidelines.

We have on-site emergency plan to counter any disaster management.

KCIL, Renukoot has its own hospital managed by Doctor round the clock. An ambulance is also readily available to shift the patients in case of emergency.

We are proud to tell that we have won the GOLDEN PEACOCK AWARD for the year 2005.

We are the only unit in near by area who has contributed exemplary to save ton environmental causes. By management initiatives & dedicated efforts made by the employees we have bring down the mercury consumption level from 250 gms / ton of caustic to 50 gms / ton of caustic.



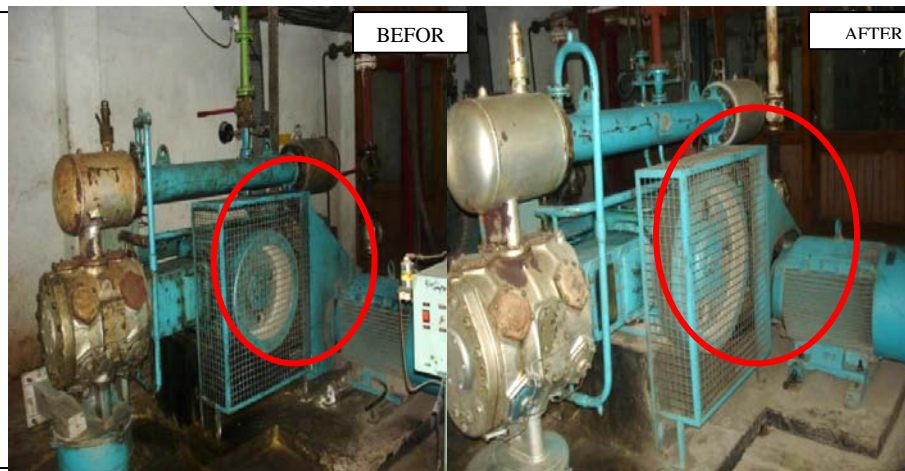
Major Energy conservation projects implemented during the Year 2002-03

1) Replaced multiple joints of 25 KA rectifiers with single welded joints. Before welded Joints the bus bar drop was high after welding the Joints bus bar drop decrease up to 0.32.

Total amount investment on this project	1.2 lakhs
Saving in power consumption	3 Kwh /tonne of caustic.
Saving /day	446 Kwh/day
Saving /year	162945 Kwh/year
	& Rs. 3.42 Lakhs/year
Pay back period	3.5 months

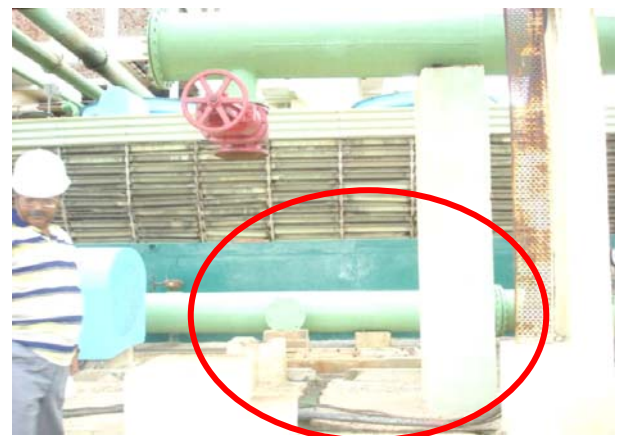
2) After some desired modification done in lindane manufacturing process. The pully size of nitrogen compressor increased.

Total amount investment on this activity	Rs 0.60 Lakhs
Saving in power consumption	397 Kwh/day
Total saving -	3.05 Lakhs/years
Pay back period -	2.0 month



3) One 75 HP cooling tower pump and one 25 HP cooling tower fan was stopped after merging the S.B.P plant and Lindane Plant cooling tower.

Total amount investment on this activity	Rs 1.5 Lakhs
Saving in power consumption	1416 Kwh/day
Total saving -	10.86 Lakhs/years
Pay back period -	1.4 month



Major Energy conservation projects implemented during the Year 2003-04

1) Before UPS System Hypo fan and lime pump were running on D.G set to avoid any gas nuisance from hypo plant during emergency stoppage of plant. After installation of UPS system DG set eliminated

Total amount investment on this project	Rs 40.0 Lakhs
Saving in diesel consumption	70 KL/year
Total saving	10.0 Lakhs/years
Pay back period	4.0 years



2) In Chlor-derivative section (S.B.P Plant, Lindane, Cr-Lindane plant), cooling tower pump and motor were replaced with higher efficiency pump and motor.

Total amount investment on this project	Rs 26.0 Lakhs
Saving in power consumption	1032 Kwh/day
Total saving	7.91 Lakhs/years
Pay back period -	3.28 years



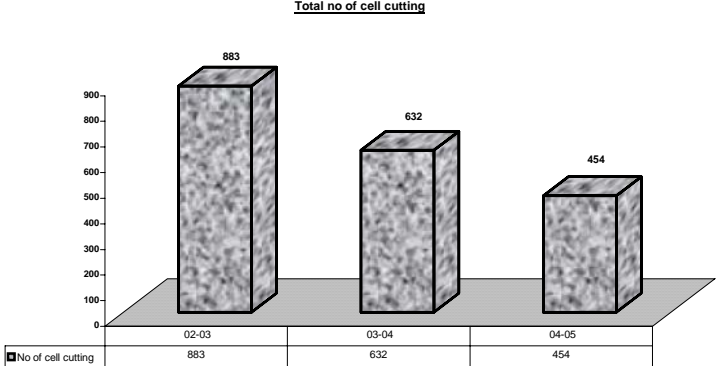
3) In water treatment plant over size pump and motor were replaced with higher efficiency pump and motor. After complete modification of pipeline

Total amount investment on this project	Rs 18.0 Lakhs
Saving in power consumption	460 Kwh/day
Total saving -	3.53Lakhs/years
Pay back period -	5.0 years



4) Cell cutting has been substantially reduced after some innovative modification in the process (Like-End box cooling arrangement, Decomposer tightening arrangement, caustic box cover etc.)

Total amount investment on this project
Rs 12.0 Lakhs
Saving in power consumption
1315 Kwh/day
Total saving - 10.08 Lakhs/years
Pay back period - 1.19 years



MONTH WISE TOTAL CELL CUTTING													
MONTH	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
02-03	79	91	84	53	82	66	90	71	68	41	65	93	883
03-04	98	48	82	79	61	66	42	56	50	20	16	14	632
04-05	20	51	39	33	40	22	38	53	27	45	49	37	454

Major Energy conservation projects implemented during the Year 2004-05

1) Relocated the cooling tower of cell house and rectifier

It was identified that the cooling water requirement and quality could not able to meet the process requirement. This has resultant into poor performance of heat exchanger thus consuming high powers for the connecting loads. Additionally there were several towers in operation for different small sections. The cooling water flow for Caustic Chlorine Plant is 900 M3/Hr., whereas the actual requirement is almost 1,350 M3/Hr. This was checked and advised by M/s UHDE India Ltd. also. The fouling in all the coolers was also very high due to poor quality of cooling water. This is because

- The location of the Cooling Tower is adjacent to the main road of the plant
- Also the plant buildings are there in the surrounding of the cooling tower, which restricts the airflow to the cooling tower and reduction in the delta T of the cooling tower in the range of 4 – 6 °C.

As a result of higher cooling water temperature and less flow in comparison to the required quantities

Total amount investment on this project
Rs 55.0 Lakhs
Saving in power consumption
1342 Kwh/day
Total saving - 10.29 Lakhs/years
Pay back period - 5.34 years



2) Replaced the old low efficiency boiler with new higher efficiency boiler

It was found that the steam requirement increase day by day due to expansion in our plant in phases, where the boiler remained same with out any addition in the capacity as per the expansion of the plant and boiler also old and low efficiency.

So replaced the old low efficiency boiler with new higher efficiency boiler and additional load of new plant could be met.

Total amount investment on this project	Rs 272 Lakhs
Saving in power consumption	2520 Kwh/day
Saving in coal consumption	8250 Mt/year
Total saving -	103.22 Lakhs/years
Pay back period -	2.64 years



3) Replaced the T-8 lamps with energy efficient lamps

200 Nos. energy efficient lamps is installed.	
Total amount investment on this project	Rs 1.26 Lakhs
Saving in power consumption	164 Kwh/day
Total saving -	1.26 Lakhs/years
Pay back period -	1.0 year



4) Replaced the raw water pump and motor in pump house

Replace the raw water pump & motor of 160 KW with higher energy efficient motor of 132 KW.

Total amount investment on this projects	Rs 12.0 Lakhs
Saving in power consumption	2457 Kwh/day
Total saving -	18.84 Lakhs/years
Pay back period -	