Sudarshan Chemical Industries Limited
Pune (Maharashtra)

Unit Profile

Sudarshan Chemical industries limited has been a leading player in the Pigment & Agrochemical sector for over 50 years. This success is a result of adherence to international standards, continuous efforts towards energy conservation and efficient practices in every aspect of our operations.

The company initially was setup in 1952 in PUNE and started additional units at Roha and Mahad. Our vast range of products includes organic and inorganic pigments, intermediates & pesticides.

Sudarshan has a joint venture with Dainippon Ink & Chemicals inc, Japan that has allowed us to strengthen our technical base. Unit has adopted most modern technology and has given utmost importance to Energy conservation.

Sudarshan is the first chemical company in India to be awarded the ISO 9001 Certificate for our Pigment division in 1993. Our units are awarded with ISO 9001 ISO 14001 & OHSAS 18001 certification. Company believes in continuous improvement through advance techniques like TQM, Six sigma, 5S.

Energy management Policy

We, at SCIL are committed to continuously improve our Energy performance in all our activities, products and Services.

We Plan to achieve this by following

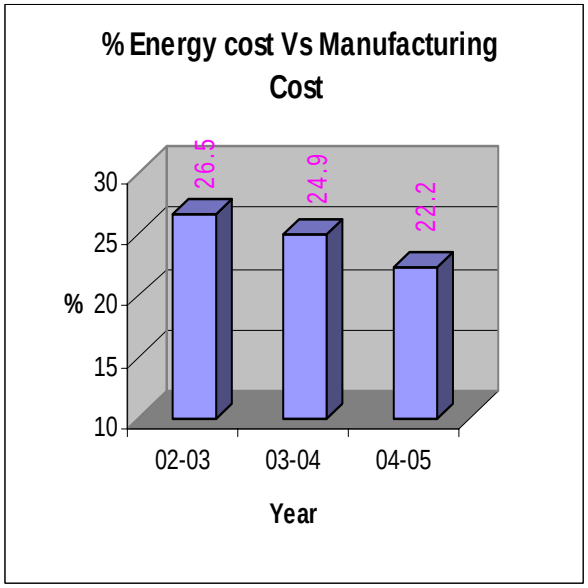
- Manage efficiently the utilization of energy resources, upgrade operational practices and employ more efficient technologies.
- Train & educate our employees in areas of energy conservation.
- Carry out regular internal and external audits to identify areas for improvement and benchmark continuously our performance against the best.
- Share and enrich our experience on energy conservation with other organization and own group companies.
- Promote awareness among all members of the SCIL family.

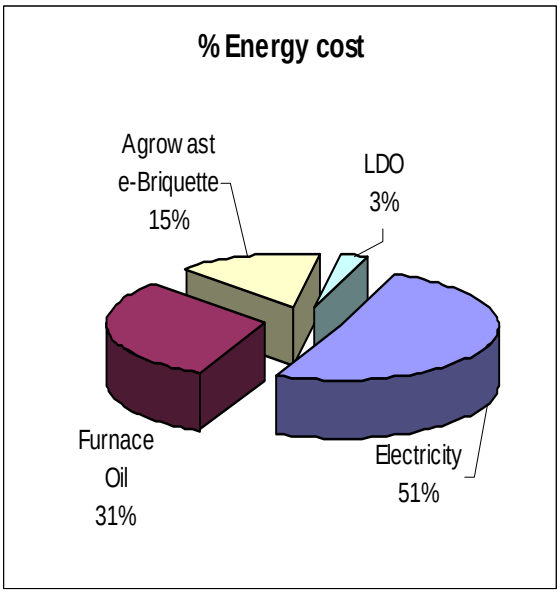
Energy Consumption

Description	Unit	2002-03	2003-04	2004-05
Annual Production	MT	11638	11442	13320
Electrical Energy Consumption per Annum	Lacs Kwh	280	285	317
Thermal Energy Consumption per Annum	M-Kcal	98346	99079	106674
Total manufacturing cost in Lacs	Rs - Lacs	7798	8391	9594

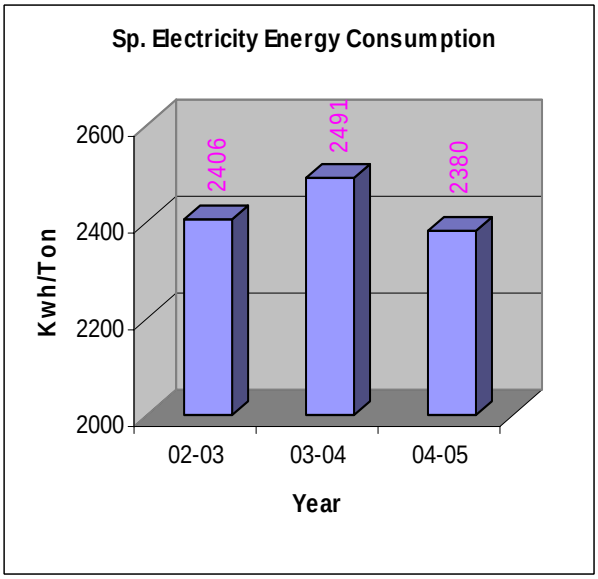
Total Energy Cost in Lacs	Rs - Lacs	2063	2095	2128
Energy cost as % of Manufacturing cost	%	26.5	24.9	22.2
Specific Elect. Energy Consumption	Kwh /MT	2406	2491	2380
Specific Thermal energy consumption	MKcal/MT	8.45	8.66	8.01

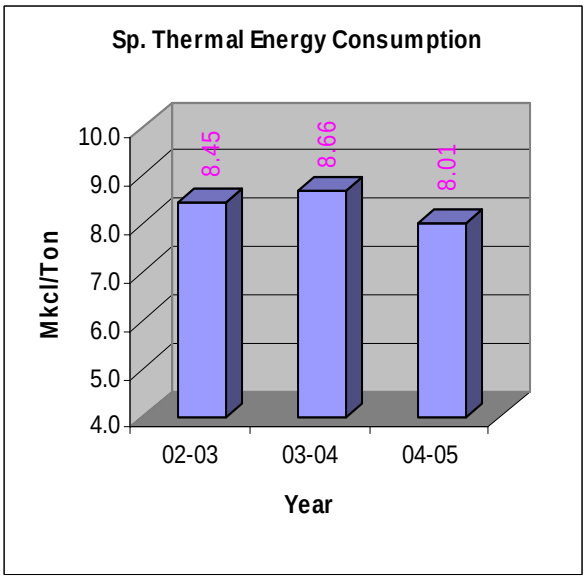
Graphical presentation of Energy consumption



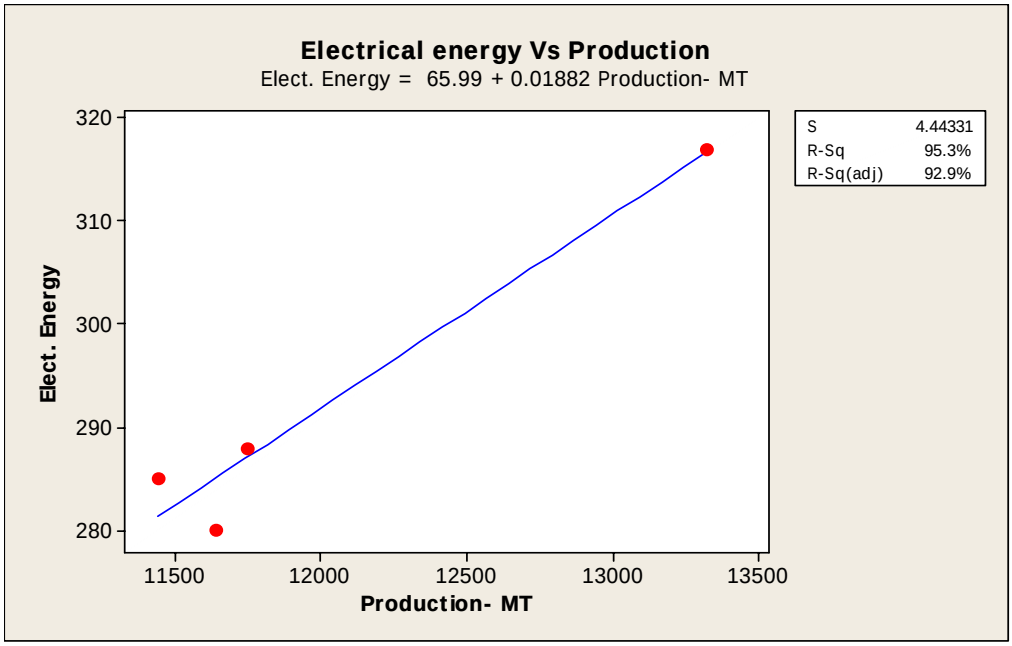


Graphical presentation of specific Energy consumption





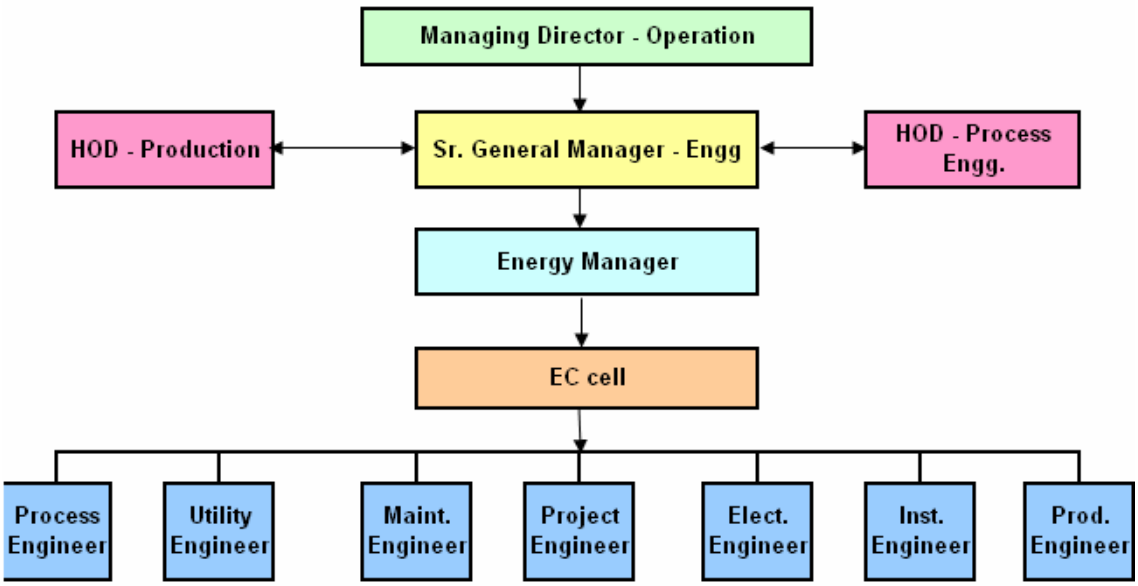
Trend chart of Energy consumption



The products comprise of a wide range of diverse Pigments, pesticides and intermediates. The product mix varies each year and the production process involves several operations in different plants. It is therefore not feasible to apportion the cost and consumption per unit of production.
Statistical Trend graph indicates 22% of energy does not vary with production.

Salient feature of Energy conservation cell

1. EC cell structure



Top management is fully committed towards energy conservation. The unit has Energy conservation cell headed by Sr. General Manager & assisted by Energy Manager.

2. Functions of EC cell

- Periodic monitoring of plant-wise energy consumption.
- Planning of corrective actions for deviations.
- Carry out internal energy audits & field study on need basis.
- Preparation of techno economic feasibility report.
- Prepare annual energy activity plan
- Benchmarking for energy performance.
- Arrange training program for energy efficiency.

3. Enrrgy conservation Target

Company is committed to reduce energy cost by 5% every year.
This is achieved through participation & commitment of employees at all levels.

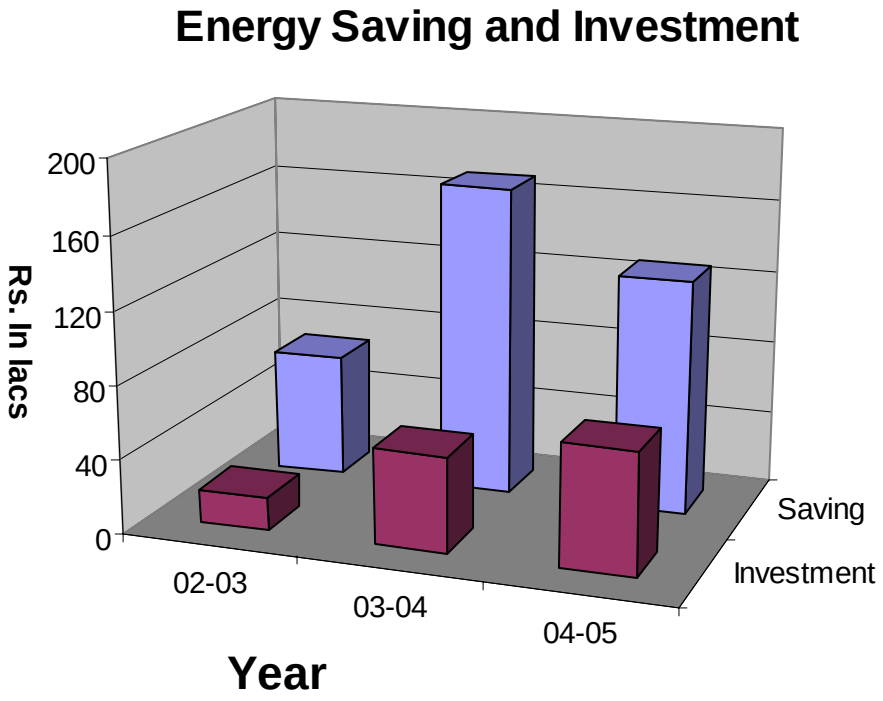
Energy Conservation achievement

Sudarshan is consistently working on energy conservation and has implemented many projects during last couple of years. Unit has implemented following major projects successfully.

- Energy substitution – Furnace oil with Agro-waste fuel
- Cogeneration system using high pressure steam- Back pressure turbine
- Blow-down heat recovery
- Installation of Variable speed drives.
- Condensate heat recovery.
- Use of Flash steam from condensate to heat boiler feed water.
- Replacement of old inefficient pump & motors with efficient one.
- Various process improvements to reduce power & steam consumption.
- Retrofitting of luminaries.

Company has invested Rs 64.65 Lacs in energy projects and saved Rs 129.8 lacs during year 2004-05.

Investment & saving from Energy Project

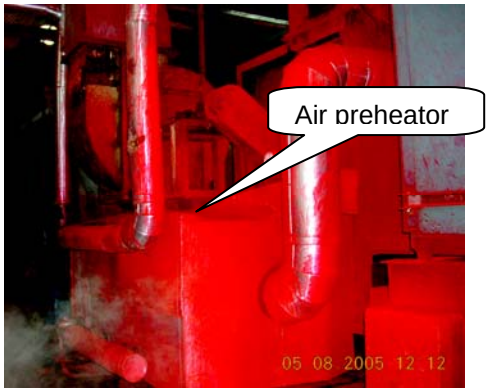


Major Energy conservation Projects implemented during Yr. 2004-05

1.Substitution of furnace oil with Agro-waste fuel in Boiler in Mahad unit

Boiler operating on furnace oil is converted to operate on Agro-waste briquette. External furnace suitable to burn solid fuel is added with ash handling system to existing boiler.

Cost of F.O.	Rs. 14,000 /KL
Cost of Briquette	Rs. 2800 / Ton
Steam generated	30,225 Ton/yr
Saving per Ton of steam	Rs. 165
Investment	Rs 31 lacs
Total saving	**Rs 49 lacs/Yr**



2.Improvement in contineus dryer capacity

Contineus dryer capacity improved from 55kg/hr to 95 Kg/ hr by adding air preheater to raise temp. of feed air. 72% increase in capacity with same power input.

Elect. Load	32 KW
No. of dryer	2
Kwh saved	1.98 Lacs Kwh
Investment	Rs 1.75 Lacs
Saving @ Rs 3.70/Kwh	**Rs 10.7 lacs**

3. Variable speed drive to scrubber blower

Common scrubbing system is used to extract the fumes from series of reactors. Now, variable speed drive is installed to vary blower CFM as per the number of reactors are in operation to **three** scrubbing system of **30 HP** blower each.

Electricity Saved	1.26 lacs Kwh / yr
Investment	Rs 6.5 lacs
Saving	**Rs 4.66 lacs**

4. Constant pressure system to filter press washing in Mahad unit

Three individual washing system were used to wash the cake in group of filter presses. In this system energy was wasted when less number of filter presses were in operation.
Single constant pressure system is used for all filter presses where required quantity of water at constant pressure is delivered by multiple pump controller with variable speed drive.

Electricity Saved	1.56 lacs Kwh / yr
Investment	Rs 8.5 lacs
Saving	**Rs 5.78 lacs**

5. Rotary seat “Ball Float steam Trap” for process heating system

Normally, steam traps are available with linear seat movement which leaks frequently due to deposition on seat area and need to monitor.
Specially designed ball float trap with rotary movement of the seat installed. This is a scraping action and hence do not allow the deposition.
These traps removes the condensate immediately as it generate and do not allow Steam to leak. These traps have higher MTTR.

Steam saved	1080 tons
Investment	Rs 1.8 Lacs
Saving	**Rs 12.04 Lacs**

6. Additional heating area to Tray dryer.

Previously two coils were used in each dryer. Now, additional one coil is installed in center of dryer which reduced drying time by 20%.

Drying time saved	4 Hrs/ Dryer
Electricity saved	0.71 Lacs Kwh / Yr
Steam saved	118 Ton / Yr
Investment	Rs 3.8 Lacs
Saving	**Rs 3.79 lacs**

7. Use of gravity head from water supply tank

Raw water is received from MIDC is treated further in water treatment plant. Pump was used to lift the water to flocculater.
Now, gravity head of water received from MIDC tank is used to lift the water to flocculating tank.
Control valves are installed to control the quantity as per need.

Electricity saved	0.46 lacs Kwh
Investment	Rs. 1.5 lacs
Saving	**Rs. 1.70 lacs**

Other Projects implemented during 2004-05

- Flash steam recovery from condensate
- Steam power pump to collect condensate.
- Silicate thermal insulation to high pressure steam line.
- Rationalization of compressed air pressure.
- Isolation of redundant steam lines.
- Stoppage of preheating of furnace oil at storage tank.