



Ruchi Group



RUCHI SOYA INDUSTRIES LIMITED. – ELLAPURAM, TAMIL NADU
(A Unit of Ruchi Group- Mumbai)

Ruchi Group Of Industries is a well-known industrial group based at Indore, MP with Ruchi Soya Industries as it's flagship company. It is widely spread all over the country having Edible Oil Refineries and Vanaspati manufacturing Plants. The group has diversified from edible oil refining business to Palm Plantations to Bio Fuels to Food Products to Steel business. The group has corporate headquarters at Indore, with offices in Mumbai, New Delhi, Calcutta, Chennai and all other major business centers in the country. The Group's business interests vary in different commodities. It deals in manufacturing and trading activities of Soybean products, Agri-business, Oils and Fats, Flat Steel, Galvanized Steel & Cold Rolled Steel etc. The Group also has long exposure in trading of Oil, Pulses and other agriculture crops. The combined business turnover for the year closed on 31st March, 2008 stood at Rs. 11500 Corers. Net worth is around Rs. 1145 corers measure of public confidence in the Group is demonstrated by the presence of over 1,20,000 investors in its various companies.

This plant winner of Prestigious Award for Energy Conservation for the year 2007-08 conferred by Hon'ble President of India Smt.Pratibha Singh Patil, is located at outskirts of Chennai ie in Trivallur district with total capacity of 900TPD of refining edible oils like soya bean, palm, sunflower, Rice Bran Oil etc. and producing Vanaspati. The unit started practicing Best manufacturing standards and practices like TPM, ISO 9001:2000 as well as ISO 22000 (HACCP) standards and having target of getting certification by this financial year.



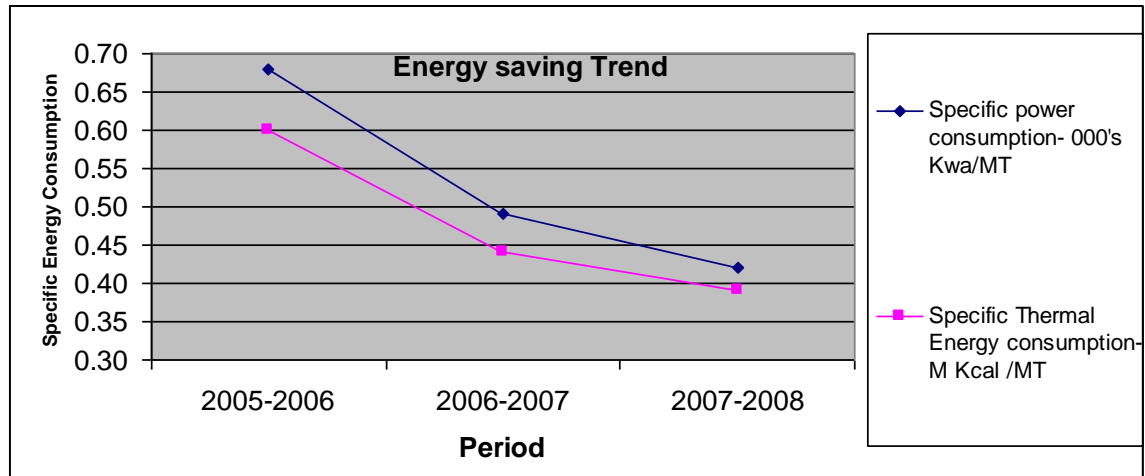
Energy Consumption

Oil is an competitive market and the pricing is very important. As the nature of the industry calls for cost reduction will be the key objective of the plant next to quality. More over the group has multiple plant all over India and therefore monthly performance comparison yields the best manufacturing practice. Last two years HO team also started working closely with individual plant in terms of manufacturing cost reduction thro' various energy conversation measures.

Description	Unit	2005-2006	2006-2007	2007-2008
Annual turn over	Rs: in Lakhs	28,866.32	48,191.48	66,165.47
Total manufacturing cost	Rs: in Lakhs	26,691.19	46,812.21	64,054.73
Electrical energy	Lk KWA / Year	92.40	66.39	75.36
Thermal energy	M K Cal / Year	81,276.00	60,015.00	70,294.00
Total energy Cost	Rs: in Lakhs	1,121.03	805.17	948.01
Energy Cost as % of manufacturing cost	Percentage	4.20	1.72	1.48
Specific power consumption	000'KWA / Tonne	0.68	0.49	0.42
Specific Thermal Energy consumption	M K cal / Tonne	0.60	0.44	0.39

Bench marking is done internally based on internal as well as external figures. Apart from monitoring HO team also gives timely input as well as supports in achieving the same. The following figures will depicts the out come of these efforts.

Note:-Out of all the efforts taken area where datas are captured are alone taken for this whole presentation. Remaining small on going projects are not included in this booklet.



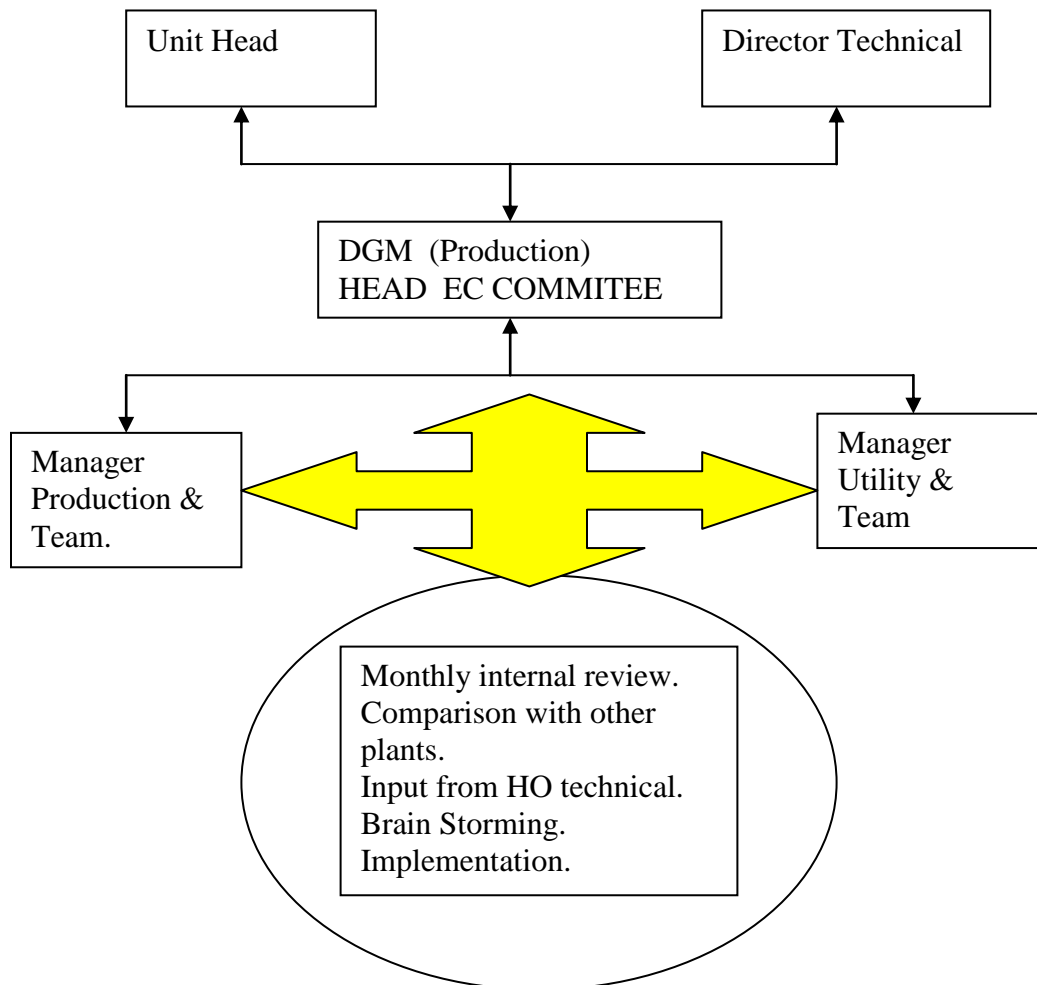
Energy Conservation Commitment , Policy and Set up.

RSIL forecasted the requirement of universe interns of saving energy and committed for the same. This factory has the Core team lead by Unit head and headed by DGM (Production). DGM (Production) has the production managers as well as Utility & maintenace mangers along with their team below him.

Since being a group .HO technical team headed by technical Director will also give the inputs and supports on the proposals and process.

An Energy management Policy is at approval stage..

Energy Conservation Team Structure



Energy Conservation Achievements in 2006-2008

Following table will describe the number of implementation with details of the outcome on energy conservation.

Year of Commissioning of the projects	Project description	Achievement of energy savings per year basis					Investment incurred on the project (Rs. Lakhs)	
		Electricity (Lakhs kWh)	Fuels*			Total savings in (Rs. Lakhs)		
			Coal/Husk (tonnes)	Diesel (KL)	F.Oil (KL)			Total (fuel) in Mkkal
2005-2006	One motor pump (100HP) in the Colling tower circuit was replaced by 60hp motor pump	1.05				4.83	1.75	
	As above another set was replaced from 100hp by 50 hp	1.60				7.36	1.40	
	Sub Total	2.65				12.19	3.15	
2006-2007	One motor pump each (60 hp & 25hp) in the Colling tower circuit was removed by introducing a balance tanks at high altitude their by the pumping back was avoided	2.49				11.45	4.75	
	30 Hp Motors in the crystalizers were replaced by 15 hp & 10 hp respectively- 3 sets	4.20				19.32	2.85	
	25Hp water pumps in the crystalizer repalced by 10HP pumps- 6sets	2.88				13.25	1.80	
	Compressor which was running with 125hp motor was replaced by 100 HP(motor taken out from colling tower)	0.77				3.54	0.20	
	Acid oil pump repalced from 20 hp to 15 hp	0.19				0.87	0.45	
	Speed reduction in Boiler ID fans are converted thro" VFD introduction instead of conventional reduction.	0.15				0.69	9.00	
	VFD introduced in oil feed pump as well as in votataor pumps	0.23				1.06	3.00	
	Old type drum fillter (with 230 hp motors and pumps) replaced by new netszh fillter (with 37.5 hp pupms & motors)which is 20% more productive also.	7.44	1000.00			5250.00	86.72	125.00
	Aluminium Cooling tower fan blades are replaced by light weight FRP blades	1.08				4.97	2.40	
	Temperature controller introduced in the colling tower fan motor.	0.04				0.18	0.18	
	Appropriate pipe line connections were made to use the existing VAM system as a replacement of conventional refrigeration system in vanaspathy plant	7.60	-100.00			-525.00	29.92	1.20
	For thermic fluid boiler Burners as well as eletrifications were changed to use Furnce oil instead of Diesel			681.94	-463.43	2594.26	100.43	12.50
	By doing all the above variation the nett power demand has come down there by 500KVA was surrendered back to Electricity Board	500 on demand					15.00	
	Sub Total	27.07	900.00	681.94	-463.43	7319.26	287.41	163.33

Year of Commissioning of the projects	Project description	Achievement of energy savings per year basis					Investment incurred on the project (Rs. Lakhs)	
		Electricity	Fuels*			Total savings in (Rs. Lakhs)		
		(Lakhs (kWh))	Coal/Husk (tonnes)	Diesel (KL)	F.Oil (KL)	Total (fuel) in Mkcal)		
2007-2008	Automatic energy saving panel for lightning circuit with APFC introduced with a saving of 260units/day	1.00					4.71	6.00
	Based on load calculation and experience, Colling tower belongs to 100tpd plant (55HP) was shut and the same circuit was connected with cooling tower in vanaspathy plant thro a 20HP pump	1.10					5.18	
	Cooling tower fan blade converted from Aluminium to FRP and their by 40hp motor replaced by 20hp	0.90					4.24	1.30
	VFD introduced in Thermic fluid boiler ID Fan.	0.63					2.97	0.07
	40HP baring metric water pump was given parallel connection with 30hp pump to run on either or basis based on plant load.	0.54					2.54	0.05
	10 HPWater circulation pum - 6 nos were replaced by 7.5HP in crytalizers.	1.08					5.09	
	1 no of Auto clave motor changed from 30 HP to 15HP	0.12					0.57	
	Hot water circulation pump changed from 30 HP to 20HP	0.23					1.08	
	Two nos of oil circulation pumps at different part of the plant were changed from 20 HP to 12.5HP & 10 HP respectively	1.01					4.76	
	20HP Circulation pump in Vam is replaced by 15HP	0.26					1.22	
	Separate priming vessel for all cooling tower pumps	0.24					1.13	0.35
	Thermic fluid boiler conversion from furnace oil to Husk firing.						99.00	125.00
	Condensate recovery sytem implemented , gave recovery of 70KL of hot water @75C /day. This increases the feed water temp by 17C		4480.62			238.82	132.43	85.00
	Sub Total	7.11					264.92	217.77
	Grant total of 3 years	36.83	900.00	681.94	-463.43	7319.26	564.52	384.25

Few of the photographs are also shown below



Automatic Energy saving panel for lighting circuit with APFC introduced which takes care of stabilized voltage and power factor.

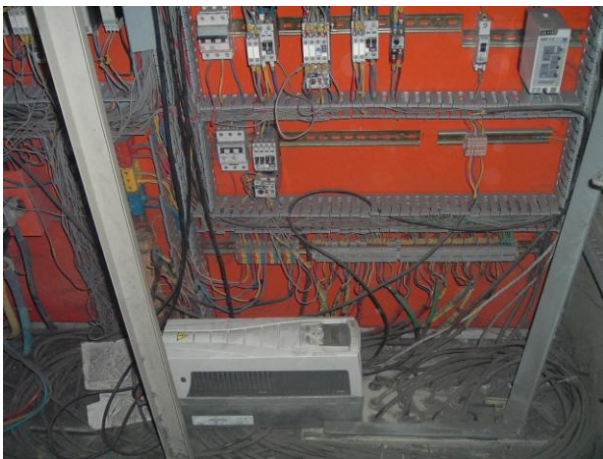
Investment Rs;6,00,000/=

Saving Rs: 4,71,000/Annum

Metallic cooling tower fan blades were replaced by FRP fan blades which leads to less energy consumption.

Investment Rs;1,30,000/=

Savings Rs:4,24,000/ Annum.



VFD introduced in boiler Id fan there by optimum speed running of the fan was possible.

Investment Rs; 7,000/=

Saving Rs;2,97,000/Annum.



Thermic Fluid boiler converted from furnace oil firing to coal / husk firing which leads to saving of resource and cost.

Investment Rs;1,25,00,000/=

Savings Rs; 99,00,000/Annum

Condensate recovery system introduced in Boiler lines leads to recovery of flash steam and waste heat from process –out water.

Investment Rs;55,00,000/=

Savings Rs;15,09,000/Annum



Energy Conservation Plan & Targets for the year 2008-2009

Following table brief the action plan for the current financial year. The list is only comprehensive and will get added on move.

Energy Conservation Measures (Planned)	Anticipated savings in		Approx. investment (Rs.lakhs)	Project Commencement & Completion year
	Energy Value (specify units)	Rs. Lakhs		
APFC panel for power factor improvement.	0.72 lk KWH	3.34	1.50	2008
200KVAMaximum Demand sanctioned from EB to be surrendered	200KVA	6.48	0.00	2008
Replacement of cooling coils in the ammonia cold room along with power reduction in	15KVA	4.32	30.00	2008
Conversion of all 36 W-double tube lights in the shop floor to be converted in to energy efficient 28watts light	4.4KVA	0.81	2.50	2008
3 no of Auto clave motor changed from 30 HP to 15HP	31.5KVA	0.36	0.00	2008
Conversion of 54 nosordinary gear boxes in to planetary type	80KVA	32.55	24.51	2009
Timer for street light	0.04 lk KWH	0.16	0.15	2009
Waste heat recovery from boiler chimney	101 Mkcal		15.00	2008
Boiler Automation for a controlled loading/ running			29.50	2008
Air filtration &leakage / block arresting at all places	to be quantified			2008

Environment and safety

RSIL has committed for plant safety. The unit has the plan of Implementing and get certified on ISO 14001 & OSHAS , immediately after streamlining ISO 9001;2000 standards. Implementation of TPM also adding the input for the same.

OSHAS

On Occupational health and safety the unit has its own team guided by external experts organised by HO. The experts makes periodical audit and also give suggestions for improvement..

Water Effluent:-

The unit has full fledged waste water treatment plant which is well approved by Pollution control board. Copies of certificates are enclosed. The unit also added a natural evaporator in the system.

Air:

All boiler chimneys are of appropriate height and as well approved by Pollution control board. Copies of certificates are enclosed.

Solid Waste;-

All solid waste are all appropriately disposed for reusing by the purchaser. Appropriate places also identified for storing and disposal there by avoiding unwanted hazards.