

Second Prize

Edible Oil/Vanaspati

RUCHI SOYA INDUSTRIES LIMITED
Baikampady, Mangalore (Karnataka)

Unit Profile

Ruchi Group of Industries is a well-known industrial group based in Indore, MP with its various manufacturing units located in all over India.

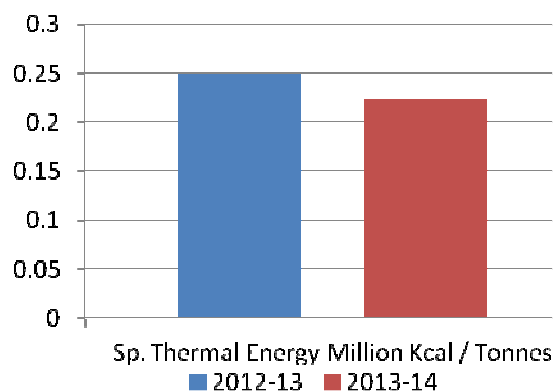
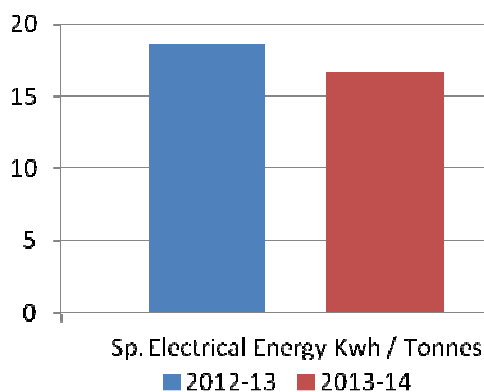
RSIL Mangalore Plant is located at Baikampady Industrial area, Mangalore with total capacity of 1300 TPD of refining edible oils like Soya bean, Palm Sunflower etc. Total turnover of unit for the year 2013-14 was Rs. 1245 Crore.



Energy Consumption

Oil and Fat processing industry is a major consumer of energy, as substantial quantities of steam and electrical power are consumed in the whole process of production. As a result, Mangalore unit had given major thrust and emphasis on the conservation of energy which would give reduced costs and edge on the market as the edible oil market is very volatile. Unit has adapted best manufacturing practices and comparing the data with other units of the group yields best results for improvement.

Description	Unit	2012-13	2013-14
Total Production	MT	714685	713230
Electrical energy consumption	Lakh kWh/Year	13281720	11842930
Thermal energy consumption	M kCal/Year	177626	159252
Specific electrical energy consumption	kWh/Tonne	18.58	16.6
Specific Thermal Energy consumption	M kCal/Tonne	0.249	0.223



Standards have been set based on the past data and continued conservation practices give the momentum to reach the goals. Bench marking is done internally based on internal as well as external figures. The following figures will depict the outcome of these efforts.

Energy Conservation achievements in 2013-14

- Installation of vacuum pump in 1000 TPD, 300 TPD and 100 TPD bleacher and deodorizer vacuum system. The steam consumption of wet ejectors has been reduced and dry ejectors have been stopped resulting in a huge amount of saving of steam.
- Installation of PRS in open steam of 1000 TPD and 300 TPD deodorizer. The steam consumption reduced and the quality of the product improved.
- Flash steam from the condensates are used for heating in storage tanks in 1000 TPD tank farm.
- Using of separator body cooling water in boiler feed water instead of simply draining it to earth.
- Installation of condensate tank to collect the condensates from the plant including all tracing lines and mixing it with boiler feed water.
- Installation of new energy efficient plate heat exchanger in 300 TPD inlet line to get maximum heat exchange with the deodorized oil. The concept of no steam heating in bleaching has been introduced.
- Insulation of Vanaspati storage tank and hydrogenation feed tank. No more heating is required now before packing vanaspati or taking charge in autoclave.
- Synchronization of 1000 TPD outlet with the fractionation plant input by fabricating separate pipeline and automation system in feed tanks.
- Process modification by bypassing the Alfa Laval plant core blow tank and taking the core blow material in drop tank. The reprocessing cost as well as heating and pumping cost of the core blow material has been saved.

- Installation of condensate tank to collect the condensate from VAM chiller and Mectech stearin trough and using the thermal energy in boiler feed water.
- Synchronization and automation of Fractionation stearin output with the Kurita plant feeding. The heating of the intermediate stearin has been stopped resulting in a saving in thermal energy.
- Installation of temperature controller in stearin trough to stop excess heating.
- Installation of plate heat exchanger in oil section to arrest excess heating in tank. The radiant heat loss from the tank is also eliminated.
- Installation of energy efficient pumps in refinery and fractionation plant resulted in a drastic drop in power consumption.
- Installation of FRP blades in two fans of 1000 TPD barometric cooling tower.
- Modification of process of sunflower de-waxing from wet de-waxing to dry de-waxing resulting in a substantial reduction in the thermal and electrical energy consumption in sunflower oil processing.
- Planetary gearbox installed in blenders and coolers.
- Fabrication of new pipeline to utilize the chilled water from VAM chiller to run the hydrogen generation plant. Earlier separate chiller was being used for this purpose.
- Automation of Mectech plant olein transfer pump with a proper interlocking with the tank level resulting in a reduction in electrical energy consumption.

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 Energy Management team led by Unit head. The enthusiastic team is involved in energy conservation activities throughout the year.

Certificate of Merit

Edible Oil/ Vanaspati

**RUCHI SOYA INDUSTRIES LTD.
Indore (Madhya Pradesh)**

Unit Profile

Ruchi Soya Industries Ltd, Mangliya (Indore) is a one of the largest edible oil plant of India. The plant was incorporated in 1990 with a small capacity of 300 TPD. At present they are having four extraction plants having overall capacity of 3400 TPD, two edible oil refineries with 650 TPD capacity, one vanaspati plants with 200 TPD capacity and 142 TPD of soya chunks with granules plant.

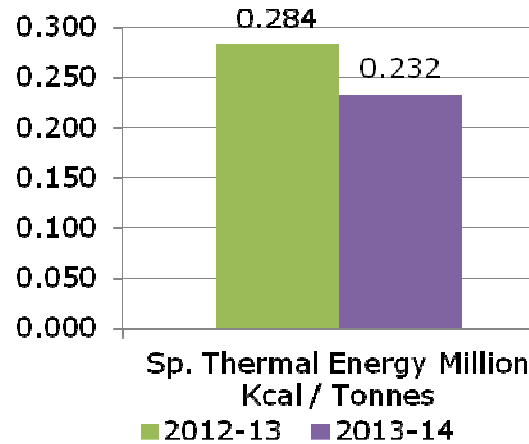
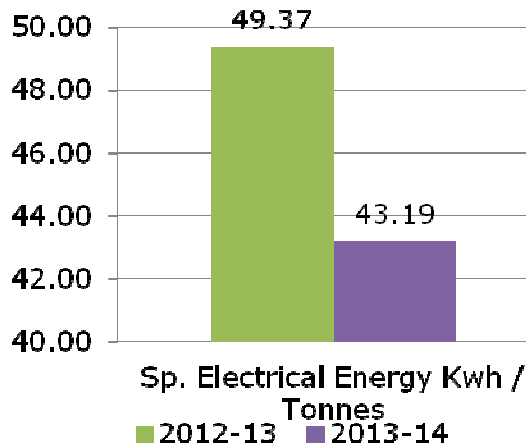
It is a fully integrated Soya processing plant and major exporter of Soya meals, edible grade Soya flour and textured Soya proteins.

Ruchi Soya's integrated soya complex purchases soya seeds and processes it to manufacture several products like

- Soya DOC
- Refined Vegetable oil
- Vanaspati
- Textured Vegetable Protein (TVP) (Soya Chunk/ granule),
- Dall analog
- Soya flour,
- Soya Grit
- Lecithin

Energy Consumption

Description	Unit	2012-13	2013-14
Electrical energy	Lakh kWh/ Year	409.66	298.94
Thermal energy	Million kCal/ Year	235833	160275
Overall Production	MT	829778	692203
Specific Electrical Energy Consumption	kWh/tonne	49.37	43.18
Specific Thermal Energy consumption	Million kCal/ tonne	0.284	0.232



Benchmarks have been set based on the past data and continued conservation practices give the momentum to reach the goals. Bench marking is done internally based on internal as well as external specific consumptions. Apart from monitoring HO team also gives timely input as well as supports in achieving the same.

Energy Conservation Measures Taken


Energy is viewed as any other valuable raw material resource required running a business – not as mere overhead and part of business maintenance. Energy has costs and environmental impacts they are managed well in order to increase business profitability and competitiveness and to mitigate the seriousness of these impacts.

In order to save energy following measures have been implemented –

- Installed VFDs at FD Fans & coal feeder to 3 boilers out of 10 boilers to save power as well as better efficiency of boiler.
- Installed heat recovery system to recover heat of VTF Boilers fuel gases.
- Installed MIST Type cooling tower and saved power to eliminate the fans of cooling tower.
- Installed transparent sheet in many section to use of natural day light.
- Provided bus coupler between LT supply of two transformers as pair of T1+T2, T3+T4, T5+T6 & T7+T8. Whenever plant is shut one transformer of each pair is disconnected to eliminate fix losses of transformers.
- Proper insulation is done at all heating surface of hot lines, dryers & other equipments.
- Old mono-block pump & motors are replaced with energy efficient motor-pumps.
- Re-layout and re-structured of many process equipments to make simplify process and remove many items.
- Replaced old slip ring motor by EFF-1 Induction motor at Extruder for TVP product at low power consumption.
- Replaced existing vapour lamp lightings & CFLs with LED Light and T-5 Tube lighting. Also stabilizers are installed in lighting circuit to control voltage.

- Installed VFD at many items to control rpm & save power.
- Leakages of steam & air are arrested and prevent the same.
- Installed AFPC panels with MCCs to maintain PF at load site to reduce distribution losses.
- Reduced 2300 kVA Contract Demand from 11400 kVA to 9100 kVA.

ENERGY POLICY



RUCHI SOYA INDUSTRIES LIMITED


ENERGY MANAGEMENT POLICY

We at Ruchi Soya Industries Limited, continuously strive to conserve energy in all our operations at plant level as well as other locations. We have adopted the energy conservation initiative as our strategic business policy. This is achieved by:

1. Bench mark specific energy consumption with National & International standards and setting up systems to achieve them.
2. Incorporate energy efficient designs and equipments in all projects and infrastructure.
3. Conduct regular energy audits to optimize resources.
4. Work with business associates in adopting energy conservation practices at their end.
5. Strengthen energy management programs through enhancement of skills and competence of our employees and encourage them to come forward with innovative ideas for Energy Conservation.
6. Maximizing capacity utilizations, co generation and recovery of waste energy.
7. Elimination and prevention of all type of losses in the use of water, power, steam, coal, compressed air, chilling systems.
8. Motivating employees to achieve a minimum 1% reduction per annum in specific energy consumption.

“Energy Saved is Energy Produced”

Date: 22nd February, 2009


(Dinesh Shakra)
Managing Director