CASE STUDY

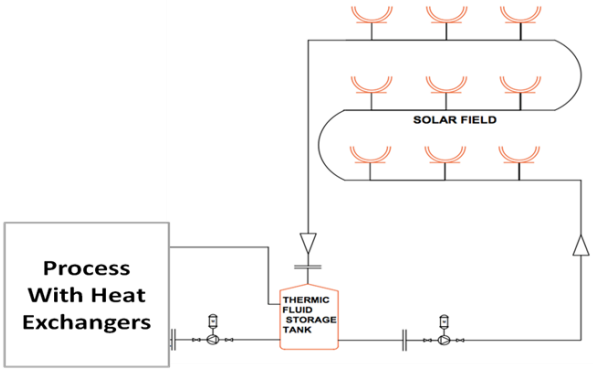
Project Beneficiary: **Siddharth Surgicals, Valsad, Gujarat**
Industry**:** **Surgical Cotton Manufacturing**
Project Execution & Supplier: **LeverageNet Solutions Pvt Ltd (**Brand name: **Energy Guru® SharperSun)**
Empanelled CST Manufacturer and Channel Partner in MNRE
Commissioned Date: **July 26, 2014**

Project Summary:

Siddharth Surgicals is engaged in the business of state of the art manufacturing & exporter of surgical cotton, and absorbent cotton wool and soft cotton roll for use in pharmaceutical industry. The company is promoted by brothers Anil Chordia and Sunil Chordia and growing under the guidance of Mr. Shantilal Chordia.

Solar Thermal Integration in Process: Majority of thermal energy is consumed in the high pressure wide mouth vertical kier (vat) that is used to make surgical cotton by boiling it. The kier is insulated with bricks. In this process 10,000 liters of water is heated from ambient temperature to 110 C in 6 hours at 10 psig pressure in 30mm thick tank by direct firing at the bottom. This water is withdrawn from the tank & again pumped back to the tank to achieve homogenous heating in the tank. Process operates on zero discharge water.

Siddharth Surgicals chose Energy Guru's SharperSun technology for displacing LPG using Solar Heat. Total 9 parabolic troughs sizing 263 aperture area (290sqm surface area) were decided to installed at the constrained space. Concentrating Solar Thermal Solar field operates from 9 am to 5 pm (10 am to 4 pm are peak hours). A closed loop system using HTF Therminol 55 is used to supply a stainless steel heat exchanger that transfers the heat to the vertical tank. The Solar field is designed to produce energy at 4.02 lakh kcal/day. Any shortage in energy is be provided by the existing LPG burner.



Schematic of Solar Heat Intervention in Siddharth Surgical Process.

Siddharth Surgicals Solar Heat Parameters		
Solar Thermal Input		
Solar Radiation	750	Watt/m2
Max Temp	140	deg C
Solar Field Aperture Area	263	Sqm
Solar Field Surface Area	293	Sqm
Thermal Heat Generated	450000	kCal / Day
Kier Process Fluid Heating		
Process Fluid Quantity	10000	Litre
Temp Increase	Ambient to 100	deg C
Energy Savings		
LPG Savings Per Year	40	Kg/Day
Cost Savings Per Day	3600	Rs/Day
CO2 Emissions Reduction	100	Tonne/y
Payback	2	years

Funding Status:

- Working Capital by Central Bank of India
- UNDP-GEF Grant Approved
- MNRE Subsidy for Off-grid CST