Picture 2: System installed at M/s Zytex Biotech Pvt. Ltd, Vadodara

The RMS is a combination of instrumentation, communication hardware and software, culminating in graphically represented data, on-line.

This is critical information (hourly kcal output, DNI, temperatures at various points in system, tracking, system on/off, pump on/off, flow-rate, etc.) for the customer, from the system health and the system heat output perspective.

Below is a snapshot of the on-line RMS. Graphical representation for analysis is also available.

Safety Features

The system has in-built safety features, such as manual over-ride, auto focus/de-focus controls, safety valves, tracking limit switches, high temperature controls, oil level indicators, stand-by pumps to ensure safe and efficient working of the system.

Materials Used

The OptiTrough 300 is built using the best solar technology components sourced from leaders in their respective fields. These key components, such as curved glass mirrors, metal absorber tubes, and tracking drives have a long and proven history of sustained performance in the field. This is what differentiates the OptiTrough 300 and ensures optimal performance over the entire 20-year life cycle of the solar thermal system.

Installation at Zytex Biotech Pvt. Ltd, Vadodara for Process Heat

UCPL has commissioned a system comprising four OptiTrough 300 modules with RMS, for their client M/s Zytex Biotech Pvt. Ltd, Vadodara for process heat application.

The client requires air at 180°C for their spray drying process. Prior to UCPL's installation, this heat was generated by heating ambient air with steam produced by an LDO fired boiler.

The system has been designed to cater to 75 per cent of the heat requirement for this process. The

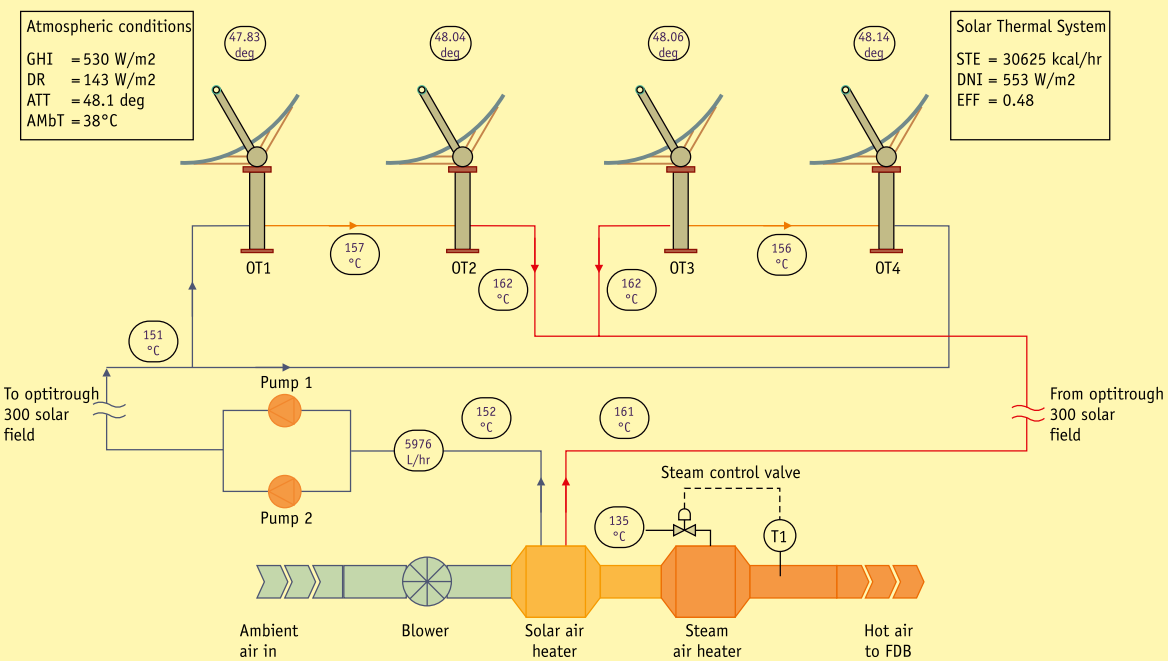

Figure 1: Snapshot of Remote Monitoring System

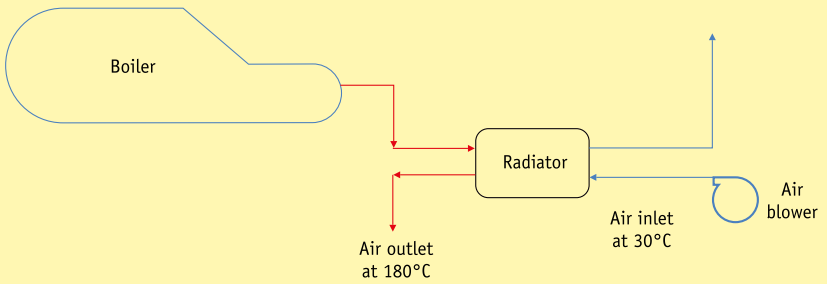

Figure 2: Before CST augmentation

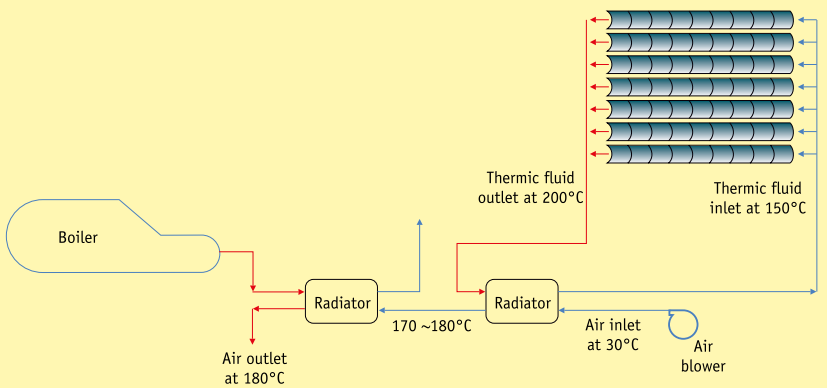

Figure 3: After CST augmentation

solar thermal heating system is fully integrated with the existing air heating process. This is done by installing a solar air heater before the existing steam based air heater. The two air heaters are placed in series, thus ensuring maximum utilization of solar thermal energy for the process. Thermic fluid circulated through the OptiTrough 300 collectors is heated up to 180°C using solar energy and flows through the solar air heater, thereby heating the air required for the process. The air is effectively pre-heated before entering the team based air heater, thus reducing steam consumption for the process. By integrating the solar thermal system in this way, closely with the air heating process, its operating efficiency is maximized.

The cost of the system to the client was ~₹27 lakh, supported with MNRE subsidy of ₹6.48 lakh and a support of ₹2.0 lakh under UNDP–GEF project. The payback of the system is expected to be less than four years.