

Case Study

**HMX helps Tamil Nadu Agricultural University harness the power of the sun!**

**Background**

Rated as the Best Agricultural University in India by the Indian Council of Agricultural Research, Tamil Nadu Agricultural University (TNAU) is located at Coimbatore. TNAU has a few thousand students, many housed in its 4 on-campus hostels. The kitchens at the hostels use LPG-fired, direct-flame community-sized cooking stoves. Each hostel requires two 19.2 kg cylinders of LPG per day for both steam cooking and direct fire cooking.

**Challenge**

On average meals for 2500 students are cooked per day at the hostel. Approximately 150-160 kg of LPG is needed per day in all 4 hostels. The LPG fuel cost was more than Rs 3.6 million every year!

The university management was looking for a cost effective option to reduce their overall expenditure. They approached HMX to develop a customised solar thermal solution.

**Solution**

HMX recommended its solar thermal concentrator to resolve TNAU's fuel cost challenge. HMX's solar thermal concentrator automatically follows the sun's motion in the sky. The parabolic dish reflects and concentrates sunlight onto a receiver filled with water and mounted at the focal point of the concentrator, thereby generating steam. The two-axes tracking solar concentrator has a number of other features such as a battery-based backup to operate the system, an easy-to-use user interface, and well-insulated hot water storage.

After extensive discussions with the university on the process requirements, it was concluded that a 250 m2 HMX solar concentrator system would be required to meet the thermal energy requirement for steam cooking at TNAU hostels on clear sunny days. A thermal storage facility would be built for cooking during non-solar hours. The system was sized to generate an average of 100-110 kg steam/day with a hot water potential of 1000 kg/day at 90°C for more than 8 months of the year (or about 180 MWhth annually).

**Result**

The integrated solar thermal concentrator system helped TNAU save more than Rs 2 million annually. The institution saves 130 kg of LPG saving per day, which means a payback of less than 4 years! The cooking time was also reduced drastically. Additionally, the university also reduced its carbon emissions by about 6 tonnes per dish per year. TNAU management are quite happy with the HMX solar thermal solution.



Installations

**A.T.E. ENTERPRISES PRIVATE LIMITED**

(Business Unit: HMX)  
T: 1800-123-2830  
E: solar@hmx.co.in  
W: www.ategroup.com/hmx  
CIN: U51503MH2001PTC132921

Follow us on: [LinkedIn](#) [YouTube](#)

