Solar-powered cooking system at NCL canteen saves 55% LPG

TIMES NEWS NETWORK

Pune: Scientists at the National Chemical Laboratory (NCL) have designed a solar-powered kitchen system for their own canteen, which caters to about 700 employees serving them breakfast, lunch and tea.

A team from NCL's Solar Thermal Lab had first conducted a study to understand the washing and cooking needs of the canteen before planning the project.

The solar-powered kitchen — which cost about Rs 6 lakh — has reduced electricity consumption of the canteen by 60-70% and LPG consumption by 55%. The scientists said this cooking system can also be used in other canteens, in schools to cook midday meals, at orphanages, old-age homes etc.

The system costs about Rs 6 lakh

Ashwini Kumar Nangia, director, NCL, who recently inaugurated the eco-friendly cooking system, said, "Solar-powered thermal systems for cooking use renewable resources. The will ultimately reduce LPG consumption."

The system delivers hot water in the range of 45°C-50°C to the washing section of the canteen and in the range of 85°C-95°C to the cooking section separately. The system uses evacuated tube collectors (ETC) and compound parabolic concentrator (CPC) solar technologies along with storage tanks, steam cooking vessels, electric boiler and piping. The system includes two ETC solar panels to provide hot water for washing and three CPC solar panels that cater to the requirement of cooking water. The capacity of the rooftop tank is around 300 litre.

Nangia said, "Storage of water overnight brings down the water temperature by 10°C-15°C. An extra tank is installed in the kitchen where an electrical heating utility is provided that can be used to bridge the temperature deficit. It supplies consistent hot water for cooking in all weather conditions."

The NCL is a lab run by the Council of Scientific & Industrial Research (CSIR).