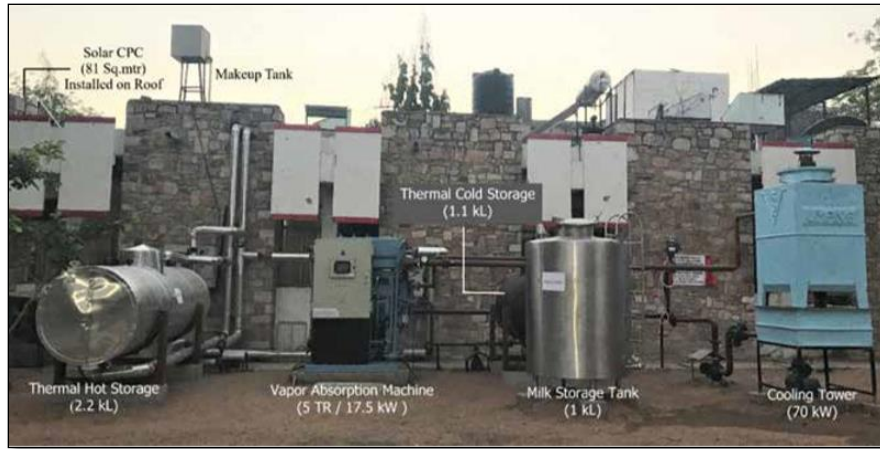


Solar Thermal Assisted Rapid Bulk Milk Cooler



A schematic diagram of the Solar Thermal Assisted Rapid Bulk Milk Cooler at MNIT

Milk farming has always been considered as a grass root income source that helps in poverty alleviation by providing employment opportunities to rural population. Although India is the world's largest milk producer, however, the demand of milk exceeds the milk supply due to inadequate cooling and preservation techniques. Among other factors, cooling facilities, cold storage plants and transportation facilities leads to the increase in milk prices. Therefore, the milk cooling step becomes the most vital part of milk processing industry.

At team of researchers at Mechanical Engineering Department, Malaviya National Institute of Technology (MNIT), Jaipur has developed an innovative milk cooling system which uses solar thermal energy for cooling of fresh milk by vapour absorption refrigeration system (VARS). The milk cooler uses CPC solar collector(s) which provide sufficient temperature for creation of VARS.

The effective real size solar thermal power assisted Rapid Bulk Milk Cooler developed at MNIT, Jaipur meets the milk cooling requirements for an average small village in Rajasthan. It takes only two and an half hours to cool milk from 35°C to 4°C, which is well within international time frame standards.

Earlier the inconsistency between the sunshine and period of milk cooling projected the major challenge in the process. However, the innovation has met the novelty of providing innovative

design to meet the requirement of people at grassroot level. The set up has also helped people to increase their income, and lowering the carbon footprint of milk industry.

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