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Thermax unveils solar air conditioning system

By Pune Bureau

BESIDES USING SOLAR ENERGY, THE ABSORPTION CHILLERS OFFER THE CLEANEST FORM OF AIR CONDITIONING AS IT USES WATER AS A REFRIGERANT, AS AGAINST CONVENTIONAL ELECTRICAL SYSTEMS THAT USE NOT SO ECO-FRIENDLY VARIANTS

Pune, July 7: Thermax has designed and commissioned a first-of-a kind solar air conditioning system at the MNRE's Solar Energy Centre in Gurgaon. The project has been partly funded by MNRE. This is an environment-friendly way of cooling. Besides using solar energy, the absorption chillers offer the cleanest form of air conditioning as it uses water as a refrigerant, as against conventional electrical systems that use not so eco-friendly variants.

M S Unnikrishnan, MD & CEO of Thermax, said, "A growing India will consume 35% of its entire electricity generated only for cooling and air conditioning. So it makes immense sense to use solar energy as a source for cooling, and reduce the use of fossil fuel." This solar cooling solution

can soon find applications across shopping malls, commercial complexes, office buildings, hospitals and industrial cooling requirements for project sizes ranging from 100 KW to 3000 KW. The fact that the availability of sun's energy during day-time matches the cooling requirements of commercial establishments makes this application practical and promising," he said. The system can also be operated on with natural gas to provide continuous cooling

during non-sunny hours.

While conventional solar systems take up a large area for limited cooling output, the Thermax project through in-house R&D has achieved a significant space reduction of nearly 30% and a 20% increase in cooling efficiency. This has brought down cost and moved the project closer to commercialisation.

At this 100 kw technology demonstration project, for the first time in the world, Thermax has integrated a triple ef-

fect chiller and solar parabolic concentrators (collectors), both indigenously developed by the company. The company has developed its indigenous solar parabolic concentrators through collaborative application research with the Advanced Research Centre for Power Metallurgy and New materials (ARCI), IIT Kanpur and Fraunhofer Institute from Germany. Existing solar cooling systems operating in various countries including India use low and medium temperature solar collectors with single or double effect absorption chillers that work on heat instead of electricity. The solar collectors in the Thermax system have been designed to harness sun's energy in an effective manner to provide temperatures from 140 °C to 210 °C. They are effectively integrated with a newly designed triple effect chiller.