Solar Thermal Cooling

Using Solar Thermal Technology to Reduce Cooling Costs

The Facts:

- Solar thermal can power air-conditioning systems and industrial cooling processes
- Solar thermal cooling generates ROI by reducing electricity consumption
- A solar thermal cooling system can also heat a facility's water

Solar energy is typically used to heat water or generate electricity. But the sun can also power environmentally friendly solar thermal cooling systems that cut air-conditioning and industrial cooling costs by reducing the electricity used for cooling.

Solar thermal cooling systems use concentrating solar collectors and absorption chillers to drive the cooling process. The same collectors used for cooling can also heat water for the facility.

2007 Solar Decathlon House at Santa Clara University

Concentrating solar collectors use mirrors to reflect the sun's energy onto a tube containing fluid. The mirrors follow the sun, heating the fluid to very high temperatures. Absorption chillers use this solar-heated fluid, rather than fossil fuels or electricity, to drive the refrigeration process.

Electricity rates are often tiered, meaning that the more electricity a building uses during peak hours, the higher the rate charged for that electricity. Peak hours often occur on hot sunny days when the cooling load is highest. Solar thermal cooling systems lower electricity bills by reducing the power used during peak pricing periods.

About SunWater Solar

SunWater Solar is a solar thermal integrator that manages the design and installation of commercial solar thermal systems, which lower utility bills, reduce greenhouse gas emissions and help clients meet sustainability requirements. With extensive project management experience in domestic hot water heating, process heating and solar cooling, SunWater Solar staff are among the solar thermal industry's top professionals. Founded in 2007 and based in Richmond, California, SunWater Solar serves commercial clients in a variety of industries and focuses exclusively on solar thermal technology.

Concentrating solar collectors come in a small package, but deliver big savings for solar cooling applications.

Solar thermal cooling systems reduce the electricity and natural gas used by conventional cooling systems.

An absorption chiller uses solar-heated fluids to help drive the refrigeration process.

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