

SOLAR THERMAL HEAT PUMP/CHILLER DEBUT

Annapolis, Maryland

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A 25 ton Helisorber (HS25) solar thermal heat pump/chiller has been commissioned at a hotel in Palm Desert, California.

Thermal heat pumps are powered by heat in lieu of electricity. They deliver good energy and cost savings even when powered by natural gas. With renewable heat input, and when chilling is co-produced, the savings increase dramatically.

This HS25 is supplied 500,000 BTU/hour of 250°F heat from a solar thermal collector. A backup natural gas heater enables 24/7 operation. The domestic hot water heat output is 800,000 BTU/hour at 130°F. The chilling co-product is 25 tons at 44°F.

All of the output heat from the HS25 goes to heating domestic hot water, so no cooling tower is required. The only electric demand is for four small pumps. The chilling provides substantial electric savings. The even greater gas savings is a result of both the heat pumping and the solar thermal input.

The HS25 consists of a highly efficient and low charge ammonia absorption cycle. With the ability to be powered by a variety of heat sources, the HS25 is a very resilient heating and chilling solution that does not rely on grid electricity.



This is the sixth thermal heat pump/chiller fielded by Energy Concepts. Those installations include units in poultry processing (100 tons), meat packing (250 tons), and a paper mill (150 tons).

Cost share support was provided by the California Energy Commission and by Southern California Gas Company. The installation was done by Adroit Energy and Retrofit Technology. The solar thermal panels were supplied by Chromasun.

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