

**Methods for Reducing Parasitic Energy Consumption  
Associated with the use of Molten Salt  
at the Solar Two Power Tower**

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**Abstract**

Molten-nitrate salt was used as the heat transfer fluid within the Solar Two receiver, steam generator, and thermal storage systems. Because of the relatively high freezing point (205 °C) of this fluid, electric heat tracing must be applied to most of the piping within the salt pumping circuits to ensure that the salt remains in a liquid state. To maximize net electricity production from the power plant, heat tracing parasitic electricity use must be minimized during the online and offline periods. A detailed test program was implemented at Solar Two in the fall of 1998 to identify preferred design features and operating procedures to reduce heat trace consumption. This paper will describe the results of the test program. The tests resulted in a very large reduction in heat trace parasitic consumption and allowed us to meet the goals established during the design phase of the project. Future molten-salt power towers will benefit from the lessons learned at Solar Two.