

TECHNOLOGY DEVELOPMENT PROJECT FACT SHEET

SP017: Saguaro Solar Trough Power Plant

The Solar Trough Power Plant is the first solar electric trough plant to be built in Arizona. The energy of the sun is concentrated 60 times using parabolic trough shaped mirrors to heat a thermal transfer fluid. The thermal transfer fluid is then passed through a heat exchanger to vaporize a secondary working fluid. The vapor is used to spin a turbine/generator making electricity and is condensed back to liquid before being re-vaporized in the heat exchanger once again. The unique part of this plant is using a proven solar collector with an Organic Rankin Cycle power turbine.



This type of turbine is used in many geothermal applications and uses a liquid such as pentane as the working fluid to drive the turbine/ generator.

Location: 25044 E. Camino Adelante Rd. (MP 228 & I-10), Red Rock, Arizona

Plant Output: 1,000,000 Watts AC

Solar Mirror Manufacturer: Flabeg GmbH, Germany

Total Mirror Area: 110,000 square feet

Solar Collector Thermal Capacity: 6843 kW

Power Block Manufacturer: Ormat

Type of Tracking: Single Axis

Projected Annual Energy Generation: 2,000 MWh AC

Estimated emissions avoided as a result of operating this solar power plant based on APS' 2003 fuel mix:

CO2	2,540,000 Lb/yr
SOx	2,800 Lb/yr
NOx	5,200 Lb/yr
Particulates	360 Lb/yr

**Tours are available on the last Wednesday of the month, for reservations call
520-682-2110 ext. 114**



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