



**HEAT TRANSFER EQUIPMENT & SYSTEMS**  
**Innovators since 1939**

**FRITO-LAY SOLAR SYSTEM PUTS THE SUN IN SUNCHIPS,  
 TAKES ADVANTAGE OF RENEWABLE ENERGY**



The Frito-Lay plant in Modesto CA has installed **Alstrom Model ASTEG/HC-HTW-2-24-42-144 Steam Generator** to manufacture their "Sun Chips" brand utilizing solar collectors.

"This is the first time we're using the technology in this scenario," said Aurora Gonzalez, spokeswoman for Frito-Lay, a division of PepsiCo. "You normally use natural gas to heat the cookers. This is an alternative. It will generate enough steam to produce the plant's Sun Chips within a year."

The solar field is made up of large curved mirrors (parabolic trough collectors) that move with the position of the sun, focusing the heat into tubes of glass filled with high temperature pressurized water. That water is directed into the Alstrom Unfired Steam Generator, which converts the energy into steam thereby heating the oil used to cook Sun Chips. This is the largest operating solar process heat system in the U.S., producing over 8 million Btu/h (2.4 MW) of thermal energy under peak conditions.

Modesto's sun-drenched climate made it a natural choice for a solar farm, Gonzalez said. The Modesto region recorded 306 days in the past year that weren't cloudy or partly cloudy, according to statistics from the National Weather Service.



**SOLAR ENERGY SYSTEM**

The massive solar panels are made up of curved mirrors that move with the position of sun, focusing the heat into glass tubes filled with water. That water is directed into the plant's boiler system, where it will be converted into steam to heat the oil used to cook SunChips.

**How system works**

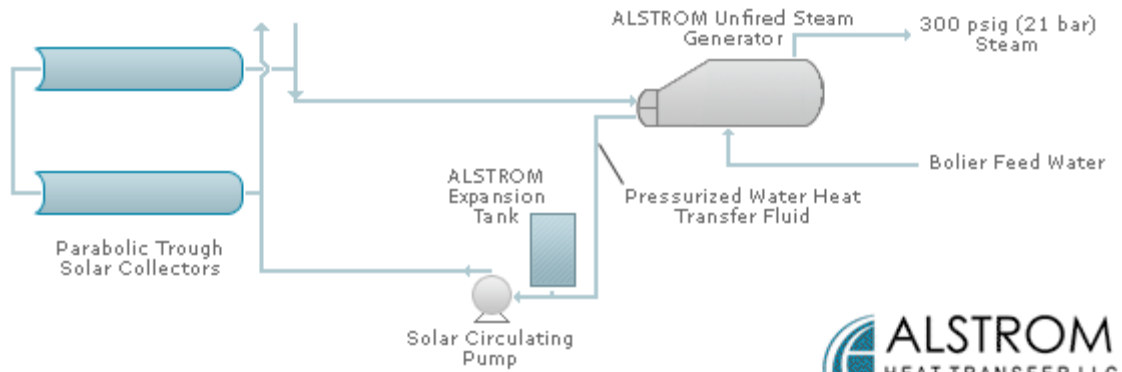


Source: Frito-Lay

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**At full capacity, the solar panels in Modesto will produce 14,700 MMBTU (one million British Thermal Units) a year. This is the largest operating solar process heat system in the U.S.**

Alstrom has provided leadership and innovation in Heat Transfer Equipment Design and Manufacturing since 1939. Our comprehensive product line includes Patented Technologies designed for maximum performance efficiency. Alstrom equipment meets and exceeds ASME Section VIII (Division 1) requirements, is "U", "S", "H", National Board "R", "NB" certified and meets TEMA and other industrial standards.



## HEAT TRANSFER PACKAGED SYSTEMS

**Unfired Steam Generators, Heat Recovery Boilers  
Fuel Oil Pump & Heater Sets, Hot Water Generators  
Instantaneous Hot Water Heaters, Deaerators**



**ALSTROM ... THE LEADERS IN HEAT TRANSFER EQUIPMENT AND SYSTEMS**