



Features:

- Solar water-heating appliance provides **immediate savings** on electric costs
- **25-year lifetime** of the appliance
- Solar energy delivered –
First year: 87,000 kWh
Design capacity: 121,000 kWh
- **Expandable design** allows facility to accommodate larger water loads in the future and further reduce energy costs. Expansion to fitness center in 2009
- **Retrofit design** plumbs into existing electric hot-water tanks. Existing tanks act as back-up to ensure hot water is always available
- **Freeze protection** allows appliance to run year-round (40% glycol mixture)
- **Differential controller** turns pump on and off according to temperature differential across the collector array
- **5-year payback expected after first year of operation results** with an annual solar fraction of 65%



Site Specifications:

Name of Property:	Frito Lay Headquarters
Location:	Plano, Texas
Age of Building:	25 years
Type of Property:	Office
Operation:	Year-round
Displaced Fuel:	Electricity
Roof Type:	Flat roof
Solar Water Uses:	<ul style="list-style-type: none"> • Potable water • Fitness center • Onsite laundry facilities • Kitchen • Dishwashing

Application Configuration:

Solar Array:	4 modules of 11 collectors each
Racking:	C-channel racks at 32° angle mounted on I beams
System Flow Rate:	Approximately 11 US gallon (39 L)/min.
Energy Terminal:	<ul style="list-style-type: none"> • 88 kW peak capacity • 2" (50 mm) piping • Commercial brazed-plate copper primary heat exchanger • Differential controller
Remote Monitoring:	• Fat Spaniel web-based monitoring for real time performance data

Assumptions for Simulation:

121,000 kWh/yr of solar energy
Lifetime of appliance: 25 years
1000 gals. solar hot water storage
120°F supply temperature