

CSI-Thermal Program Contractor Resources



Solar Thermal for Coin-op and Commercial Laundromats

Market Potential

According to the Coin-Op Laundry Association, more than 225 coin-op laundromats are in operation in San Diego County, averaging 33 washers each. Adding to that total are a variety of specialized industrial facilities for uniform cleaning, prisons, the military and other commercial uses.

Laundromats are ideal for solar water heating because they use hot water 16-18 hours a day, as long as the facility has adequate roof space for the thermal collectors. Laundromat facilities have a fairly flat load shape and are well-suited for flat plate collectors or evacuated tubes. Solar water heating provides immediate utility savings on natural gas costs, free hot water for decades and a payback in just a few years.

Example Solar Thermal Laundromat Modeling Assumptions

Smaller solar systems outperformed larger ones in F-Chart simulations in terms of per square foot savings, but better economies of scale may favor a larger system. The best size of a system may depend on financing available and space, but solar fractions of 30–50% provide best life-cycle cost benefits. This example is from an actual application using 5,850 gallons per day and 1,440 square feet of collectors. ¹

Average hot water use per application.² Washer average load = .67 x the rated load (#)

- Single Top Load (12#) = .82 Gal/#
- Single Front Load (14#) = .27 Gal/#
- Front Multiload (35#) = .32 Gal/#
- Front Multiload (55#) = .31 Gal/#

System components

- Less than one square foot of collector/gallon/day
- 1–1.5 gallons of storage per square foot of collector

F-Chart output (MACRS depreciation not considered)

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|-------------------------------------|------------------|
| • System cost (\$100/s.f.) | \$144,000 |
| • Incentives: CSI-Thermal rebate | \$113,629 |
| • Incentives: federal ITC (30%) | \$9,111 |
| • Total project cost | \$21,260 |
| • Annual energy savings (\$1/therm) | \$5,628 |
| • Simple payback | 3.8 years |

¹<http://www.worldslargestlaundry.com/easy-being-green/solar-power/>

²2006 San Diego County Water Authority (SDCWA) paper "Assessment of Water Savings for Commercial Washers: Report on the Monitoring and Assessment of Water Savings from the Coin-operated Multi-load Clothes Washers Voucher Initiative Program."

