



Case Study: California Laundromat Washes Away High Hot Water Bills with Solar Water Heating



Woody's Laundromat is a neighborhood institution for residents seeking a clean and convenient laundry facility in the Lake Merritt area of Oakland, California. As the 2009/2010 winner of the OneCalifornia Foundation's OaklandIndie Award, Woody's was named a Neighborhood Dynamo, and praised as "a shining example of how independent local businesses can make their neighborhoods happier, safer, and full of song."

Woody's received similar praise on Yelp! for its cleanliness, customer service, free parking, and free internet access.

In 2012, Woody's became a neighborhood leader again, when it invested in a solar hot water system. Installing solar not only added to its neighborhood reputation, but it also saved Woody's owners thousands of dollars a year on water heating bills.

Installing a solar hot water system makes financial sense for almost any laundry facility with enough rooftop sunlight. The size and cost of the system will depend on the number of washers, the type and brand of washers, daily customer loads, and other factors.

With Woody's 33 washers, customers used an average of 1,000 gallons per day of warm and hot water. With plenty of rooftop sun available, Woody's realized that relying just on a natural gas heated hot water system was both a waste of natural solar energy—and operating expenses.

Woody's solar hot water system was designed and engineered by San Jose-based Free Hot Water and installed by Avante Plumbing of Martinez, California. Based on Woody's annual needs, Free Hot Water designed a solar water heating system that would reduce Woody's natural gas usage by 2,275 therms annually, saving thousands per year based on current gas prices.



Woody's net costs for installing the 18-panel solar hot water system is estimated to be \$8,888 after rebates and various tax incentives. The incentives included a \$15,300 rebate from California's CSI Thermal Program and another \$17,988 Federal Investment Tax Credit, plus additional accelerated depreciation tax incentives. As a result of all of the incentives, Woody's is expected to see a return on its solar thermal investment in just under four years.

Since commercial solar hot water systems are designed to last 25 or more years, Woody's energy costs for heating hot water for its 33 laundry machines will be significantly reduced for 20 years after the initial four-year payback period. And as natural gas prices rise, Woody's energy bills will always be offset by the free solar hot water generated by the building's solar thermal system. And should Woody's owners ever decide to sell its business, studies have shown that solar thermal systems increase the building's value compared to a similar building.

Aside from the financial benefits, Woody's decision to go solar is also benefiting its Oakland community. Every year, Woody's will offset the equivalent of 26,623 lbs (1331 tons) of CO₂, helping to reduce air pollution and the effects of global warming for Oakland, and the world.

STATS AT A GLANCE:

Woody's Laundromat, Oakland, CA

- Laundromat Equipment: 40 Dryers and 33 Washers
- Hot Water Demand DHW: 1,000 GPD
- Daily Use Pattern: All Day/Morning/Evening
- Daily Collector Output BTU Delivered: 10 Therms
- Collectors Needed: 18 DHW
- Storage Tank Size DHW: 2 x 264 gals

System Costs, Rebates, and Tax Incentives

- Estimated Project Cost: \$59,959
- California CSI Thermal State Rebate: - \$15,300
- 30% Federal Incentive Tax Credit: - \$17,988
- Possible 179 Depreciation Deduction: -\$17,838
- Federal Tax on State Rebate: +\$5,355
- Possible MACRS State Depreciation: -\$5,300
- Estimated Net System Cost: \$ 8,888
- Annual Fuel Units Saved: 2,275 therms
- Estimated Return on Investment: 3.891 Years

Environmental Savings:

- Annual Lbs. of CO2 offset: 26,623 lbs
- Annual tons of CO2 offset: 13.31 tons

Installed by: Avante Plumbing, Martinez, CA: Karl D,Angelo, owner

Solar equipment and engineering provided by: Free Hot Water, San Jose CA