heliodyne™
SOLAR HOT WATER

CASE STUDY: THE SAMPATH RESIDENCE

Overview

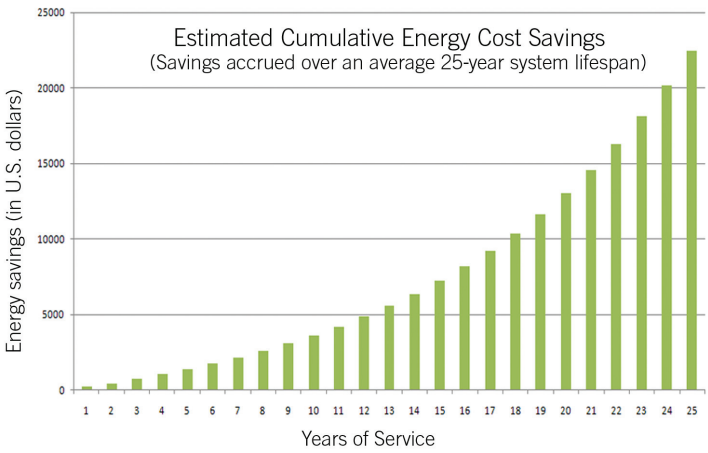
In 2003, Laks Sampath, a San Francisco Bay Area home owner, decided it was time he did something to combat global warming. After doing some research on alternative energy solutions for homes, he decided to have a solar hot water system installed.

Laks chose to install a "closed loop" solar hot water system for his 4-person home. Because he lives in Northern California, where freezing can occasionally be an issue, a closed loop system offered the highest degree of freeze protection. Since Heliodyne sells complete systems with all necessary components included, his installation was simple & straightforward, requiring only 3 days from beginning to end.

Since 2003, the Sampath family has been enjoying a significantly reduced gas bill, currently saving nearly $300 each year. And as utility rates continue to rise, their savings will only grow. Laks and his family can look forward to many more years of free energy provided by the sun, knowing that they're doing their part to preserve the environment.

"My family and I have been enjoying our solar heated water for 5 years now. During that time, the Heliodyne system has performed flawlessly. My low monthly gas bill is a constant reminder of how effective the system has been."

Laks Sampath, Homeowner

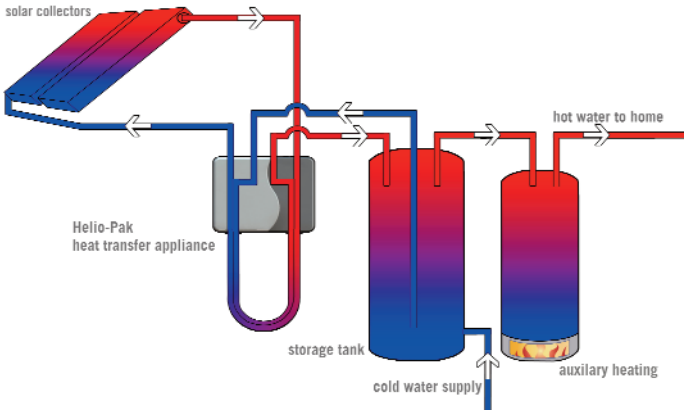


Over the course of the Heliodyne system's lifespan, it will have paid for itself nearly 5 times over, saving the Sampath family an estimated $22,427 on their energy bills.

EXCELLENCE BY DESIGN®

System Description

The Sampath house is located in Marin County, just a few miles north of the Golden Gate Bridge. Two GOBI 406 collectors are flush-mounted on the roof facing due south for maximum solar exposure. The collectors are plumbed straight down into the basement where a Helio-Pak transfers the solar energy into an 80 gallon solar storage tank. The storage tank is connected to the home's existing traditional gas water heater, which is used only during times when there is insufficient solar energy to heat the family's hot water supply. The Sampath family uses their Heliodyne system for domestic hot water use.



System Components

- 2 GOBI 406 Solar Flat Plate Collectors
- Collector Flush-Mount Hardware
- Helio-Pak 16 Closed Loop Heat-Transfer Appliance
- 4 Gallons of Solar Fluid
- 80 Gallon Solar Storage Tank

KEY NUMBERS AT A GLANCE

Household's Total Annual Hot Water Load	16,796,000 BTUs 168 Therms
Gross Annual Solar System Energy Output*	19,245,000 BTUs 192.5 Therms
Solar Fraction (The amount of energy the solar system displaces)	68.7%
CO_2 Reduction	2,977 lbs annually
2003 (The first year system was installed - actual energy savings)	$227
2004 (Actual energy savings)	$250
2005 (Actual energy savings)	$275
2006 (Actual energy savings)	$302
2007 (Actual energy savings)	$333
Average Annual Energy Cost Savings (Over a 25-year system lifespan)	$897
Cumulative Energy Cost Savings (25-year period with est. 10% annual utility rate increase)	**$22,427**

*Gross annual solar system energy output calculated by combining solar energy to storage with the offsetting of the gas water heater inefficiency (approx. 40%).

SYSTEM COST

The cost for a domestic solar hot water system similar to the Sampath's system has become much more affordable due to various local and federal incentives. Below is what homeowners can expect to pay for a 4 person solar hot water system for their home:

Heliodyne System Cost (Excluding hot water tank)	$4,103
Labor (Rates vary depending on installer)	$2,500
Less Federal Tax Credit	- $2,000
Less County of Marin Solar Rebate	- $300
Solar Energy Cost*	$0.89 / Therm
Total System Cost After Rebates and Incentives	**$4,303**

*Cost per therm over the estimated 25-year system lifespan in order to recoup system purchase & installation costs.

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