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Cleaning Green

Best Practices for Sustainable Cleaning

Clean and Green Coin Laundromat

Eneref Institute examines how Pfister's Family Laundromat in Pennsylvania implements a solar water heating system to enhance sustainability of their operations and reduce energy bills

When you fill a mop bucket with sudsy hot water, not only the suds can provide green cleaning—the hot water can be green, too.

Such was the case for Pfister's Family Laundromat in Westchester, Pennsylvania. When they switched to clean solar thermal to heat their water, the commercial coin Laundromat not only got the system installed at no cost, but got permanently reduced hot water bills.

The Laundromat, owned by Mike Pfister, was already ahead of the game before they decided to become the first Laundromat in Pennsylvania to use solar-heated water. In previous years, they had switched to state-of-the-art digital equipment to reduce water usage. According to Brian Wallace, President and CEO of the Coin Laundry Association, these changes made sense in an industry that "likes to think of itself as a leader in energy efficiency," as "anything that [can] be done to reduce that cost of operation becomes very important."

But with hundreds of daily customers loading their 50 washing machines, some of which hold 75 lbs of laundry, the Laundromat's need for hot water was still great and constant—almost 10,000 gallons a day. Mike Pfister, owner of

Pfister's Family Laundry, wanted to further reduce his energy costs. Solar heating was the clear choice.

When most people think of solar energy, they imagine solar photovoltaic cells, or PV. Solar heating panels are different than PV cells, but all systems work on the basic principal of converting incoming solar radiation – sunlight – into heat. Solar water heating systems simply circulate liquid through

rooftop panels heated by the sun. The liquid, food-grade antifreeze or water, transfers the heat to storage tanks that feed heated water into the conventional hot water system.

While the savings last for decades, the payoff period required for an upfront investment can sometimes be a hindrance for some smaller businesses.

Solar thermal may be a difficult sell to the coin-operated Laundromat industry because the business owner is typically not the building owner, explains Seth Warren Rose, Executive Director of Eneref Institute.

"However, we've found that power purchase agreements can often be a gateway for renewable energy systems into leased spaces because the burden of the up-front cost is not on the facility operator, but rather on a third-party financier" says Rose.



Michael Pfister, Owner of Family Laundromat standing next to solar water heating panels on the roof of his Laundromat in Westchester, PA.

In this case, Skyline Innovations had just the financial tools Pfister needed to get started on solar heating and cooling through a third-party financing arrangement called a Power Purchase Agreement (PPA).

Through the PPA, Skyline guarantees customers' savings by covering the upfront cost of the installation and selling the energy produced by the system back to the building at a fixed discount to their utility rate. Meanwhile, Skyline owns, operates, monitors and maintains the system.

As Skyline Innovations CEO Zachary Axelrod explains, "Every unit of heat we deliver will be a fixed percentage cheaper than utility-supplied fossil fuel for the property owner," usually at 15% to 35% less than the utility. The customer thus gets the energy-efficient system and savings without upfront expenditure or logistical responsibilities.

Pfister emphasizes, "They take care of everything. All the details that no one else is familiar with, unless you've been in the business."

Even with third-party financing, solar heating projects often require incentives to compete with taxpayer-funded oil and natural gas extraction. The solar heating and cooling sector has produced a strong of return on

investment for the public dollar and, according to the Solar Energy Industries Association (SEIA), more than 90 percent of Americans want greater use of these technologies.

The Skyline and the Pfister Family's Laundromat project happened with the help of both federal and Pennsylvania tax incentives.

Skyline Innovations "did all the paperwork," in applying for tax credits and building approvals, according to Pfister.

Alan Rushforth, who designed the system and headed the installation, worked around the building's lack of floor space by creating an indoor structural platform over the gas water heaters to accommodate the 500-gallon solar tank. Overhead, eight 4-by-10 foot solar collectors have an eye-catching perch on the roof.

And thanks in part to his work, this solar system has a bright future: according to Eneref Institute, it's not unusual for solar heating systems to continue to operate for thirty years.

For all that time, as an industry leader in its use of monitoring technology, Skyline Innovations will use its special software to ensure that the solar hot water system is running optimally at all times.

And while Skyline continues to take care of the entire system, all Pfister needs to do is pay his permanently reduced bills. Regardless of the system's production, Pfister pays Skyline the same agreed-upon rate for their hot water, indexed at 35% below the standard rate.

Energy savings aside, Pfister finds that customers appreciate the system, which is visible on the roof, saying, "I think everybody really likes the fact that it's the image that you ... present. ... Which is nice, every business could use that, everybody embraces the concept." ●



This article is part of an ongoing initiative by Eneref Institute to demonstrate the benefits of solar heating and cooling. Seth Warren Rose is founder and director of Eneref Institute (www.enereref.org) a non-profit research and advocacy organization that reports regularly on ecologically sensible innovations.