



Sanden Heat Pump Water Project

Moving away from natural gas-powered central water heating plays a big part in achieving our carbon-neutral goals. As part of our commitment to clean and efficient energy for our customers, we wanted to test the viability, performance and potential benefits of replacing gas water heaters with electric heat pump water heaters (HPWHs).

This transition is particularly challenging for multifamily applications, where it can be costly. For fourplexes specifically, there were no known, proven heat pump water heater solutions. The Sanden CO₂ HPWHs used in this project successfully replaced the gas water heaters at two local fourplexes with centralized water heating. These are two of the first installations of the kind and open up the possibility of clean, cost-effective HPWH energy solutions for this type of multifamily residence.

Although this study is still underway, preliminary results show that the HPWHs have been able to meet the customers' demand for hot water while saving about \$1,000 in energy costs per year for each fourplex.

Natural Refrigerant Incentive Program

Starting local doesn't mean we won't go big. Conventional hydrofluorocarbon refrigerants (HFCs) are the fastest-growing source of greenhouse gas emissions globally, trapping thousands of times more heat per molecule than carbon dioxide. This makes refrigerant management a huge opportunity for global reductions in greenhouse gas emissions. Natural alternatives have zero or near-zero Global Warming Potential (GWP), but they require extensive reconfiguration and are not common locally.

In our effort to stimulate and expand the market for natural refrigerants, we helped install unique refrigeration systems at two popular local grocery stores: Grocery Outlet and Raley's. Our program created a valuable opportunity to study the energy efficiency and performance of these natural refrigerant systems in our climate zone. What we're learning can be implemented at larger grocery stores and large commercial and industrial food processors, and will be shared throughout the refrigeration industry to accelerate adoption of these systems.

Not only do these systems reduce local use of very potent high GWP greenhouse gases, they're also expected to drive down customer operational costs by eliminating regular refrigerant retrofits, regulatory compliance reporting and, potentially, electricity use.

We installed system monitoring tools and will compare the performance of the natural refrigerant installations to conventional systems at other stores for two years to provide a complete picture of seasonal patterns.