



Energy Efficiency Case Study

The Spence Family Ground Source (Geothermal) Heat Pump

Background

It's typical for empty nesters or couples approaching retirement age to consider downsizing as part of their retirement strategy. Since the pandemic, though, this trend has changed. Instead of downsizing, older adults are investing in their spaces and utilizing them for at-home entertainment, fitness and other hobbies, or renovating them to suit their needs and goals.

One couple taking their at-home retirement strategy a step further by installing home sustainability solutions is Martin and Ruth Spence of Bethel, Connecticut.

The couple purchased their 2,440 sq. ft. forever home in 2012. While the listing boasted energy-efficient construction, the Spences found there were areas for improvement. In 2019, they made their first sustainability upgrade and installed solar panels.

After doing additional research into how the couple could streamline their expenses, Martin found that combining geothermal heating with solar could reduce their energy costs to nearly zero.

Martin sought out contractors that provided this service in his area and found Dandelion Energy, a contractor participating in the Energize ConnecticutSM Heat Pump Installer Network.

Goal

Previously, the Spence's home used electricity and oil for their heating and cooling, and the couple was spending approximately \$400 per month and using around 450 gallons of oil per year. With an eye on retirement, Martin and Ruth Spence's primary goal for installing their ground source heat pump was to further reduce their energy expenses and help stay within their expected retirement budget.

Outcome

Based on the size of the Spence's home, Dandelion Energy looked to install a single loop system at a drill depth of 400 feet along with a four-ton AAON heat pump.

Material and equipment shortages due to the COVID-19 pandemic caused some delays and since their town was not well-versed with ground source heat pump installations, the Spences had to provide detailed drawings and information proving that the system would not interfere with their neighbors' water and sewer supplies.

After overcoming these obstacles, the Spences are now enjoying the benefits of their system:

- A more gentle, less dry heat
- Longer running blower
- Lower energy costs, spending only \$10-20 per month for heating and cooling

Additionally, the couple will enter retirement without having to worry about their heating and cooling costs – and can use their savings for other activities such as fishing and woodworking.

Total Cost:
\$39,000

Rebates and Incentives:
\$16,000

Net Cost:
\$23,000

Total Estimated Savings (kWh):
4,800

Total Lifetime Savings (kWh):
96,000 (20 Years)

“The system works great – just as advertised,” said homeowner Martin Spence. “Installing a geothermal heat pump can be a difficult financial thing to make sense of initially, but we will be cash-flow positive by the time we retire. Thanks to Eversource and Dandelion Energy we now won’t have to worry about spending all of our savings on home expenses.”

For more information and ways to save, visit eversource.com

The information in this case study is an accurate representation of this customer's experience at the time of publication. Results, including cost savings, from heat pump installation and/or other energy efficiency measures can vary based on each individual customer's situation.

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