



Empowering you to make smart energy choices

# HOME ENERGY SOLUTIONS<sup>SM</sup>

## ENERGY EFFICIENCY CASE STUDY: ROSENGRANT FAMILY

The Home Energy Solutions (HES) program is available to all Connecticut residents. Specialists will perform an energy assessment, make on-the-spot improvements to make your home weather-tight, replace incandescent light bulbs with energy-saving bulbs, and provide money-saving rebates for additional upgrades. This program is one of several innovative solutions offered by Energize Connecticut and administered by Connecticut's utility companies.

To find energy solutions for your home, call 877-WISE-USE (877-947-3873) or visit [EnergizeCT.com](http://EnergizeCT.com)

### Energize Connecticut and CL&P helped the Rosengrant family:

- Save approximately \$384, 548 kilowatt-hours of electricity and 110 gallons of oil annually.
- Defray its investment in an energy-efficient ductless heat pump.
- Achieve a lifetime electricity savings of approximately 7,349 kilowatt-hours.

### The electricity saved over this project's lifetime is equivalent to:

- 7,713 pounds of carbon dioxide (CO<sub>2</sub>) emissions avoided, or
- 3,604 pounds of coal not burned, or
- 1 acre/year of trees planted.



## Background

Ken and Ellen Rosengrant live with their two children in Middletown, Connecticut. The original 1,200 square feet of the family's Cape Cod-style house was built by Ellen's grandfather and great uncle in 1949. The home is primarily heated by a wood stove with oil heat available for extremely cold weather days. However, it did not have adequate insulation according to today's standards. When the family built a 600 square-foot addition in 2003, insulation was added to some of the original home's exterior walls and attic to improve its efficiency.

## The Challenge

The Rosengrant's home was generally energy efficient, with investments made in more efficient windows, appliances and some lighting. However, although the 600 square-foot addition was properly insulated with fiberglass, the home's wood stove did not adequately heat the new space, which sometimes left it feeling drafty. The Rosengrant's soon realized they needed to heat the addition more efficiently and other areas across the entire house could be improved. The steep costs associated with making those changes presented a challenge.

## The Solution

Ken and Ellen Rosengrant heard about the Home Energy Solutions (HES) program through family members who had participated. According to Ellen, "We are a very energy-efficient family always looking for ways to improve and save money." Knowing they had heating issues, the Rosengrant's decided to sign up for the program to learn what else they should do to make their home more energy efficient and to get financial and technical assistance with any necessary improvements.

The HES program contractor helped pinpoint areas where the Rosengrant's could save energy and money on their utility bills. CL&P worked closely with the contractor and its technicians to make sure the project went smoothly and verified that every step was done properly.

## Heating and Cooling

As expected, the energy assessment conducted on the Rosengrant's home uncovered opportunities to increase efficiency. First, a ductless heat pump was recommended to make the new addition more comfortable. This highly efficient heating and cooling system is easily installed as a new primary heat source and can heat and cool homes at a fraction of the cost of baseboards and wall heaters. In fact, ductless heat pumps have proven to save 25-50 percent on energy bills. In this case, it helped the Rosengrant's reduce their reliance on oil heat, particularly in the new addition, which reduced their heating costs. Also, the system's superior air distribution helps make living spaces more comfortable, which was a bonus for the family.

Financial incentives made it possible for the Rosengrant's to pay for the heating unit. "The financial incentive for the heat pump was definitely what made up our minds to install. With the help of rebates and tax credits, including an Energize

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" I recommend the Home Energy Solutions program to anyone I know that is thinking of changing or supplementing their heating/cooling units. It was well worth the price."  
- Ken Rosengrant

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Connecticut rebate, we paid about one-third of the price of the unit. I recommend the Home Energy Solutions program to anyone I know that is thinking of changing or supplementing their heating/cooling units. It was well worth the price," said Ken.

Additionally, duct and blower-door tests were conducted to assess air leaks within the home's ductwork system and the building envelope itself. From this, leaks discovered were sealed, reducing duct loss by 20 percent and reducing air infiltration into the home by 12 percent.

**Total lifetime savings from energy-efficient improvements to heating and cooling, including weatherization measures: 1062 kilowatt-hours and 1080 gallons of oil.**



THE OUTDOOR UNIT OF THE ROSENGRANT'S NEW DUCTLESS HEAT PUMP HAS A SMALL FOOTPRINT REQUIRING MINIMAL SPACE OUTSIDE THE HOME.

## Lighting

The Rosengrant's had previously purchased some energy-efficient lighting to reduce their energy use and electric bills. To expand on this effort, they took advantage of the ENERGY STAR® Retail Products program, which promotes the purchase of energy-efficient lighting products through retail incentives and markdowns supported by Energize Connecticut.

"I think our house now is as energy efficient as we can make it, without going solar or installing a geothermic unit."

– Ellen Rosengrant

Through this program, the Rosengrant's received significant discounts on purchasing additional compact fluorescent lightbulbs (CFLs), which use up to 75 percent less energy

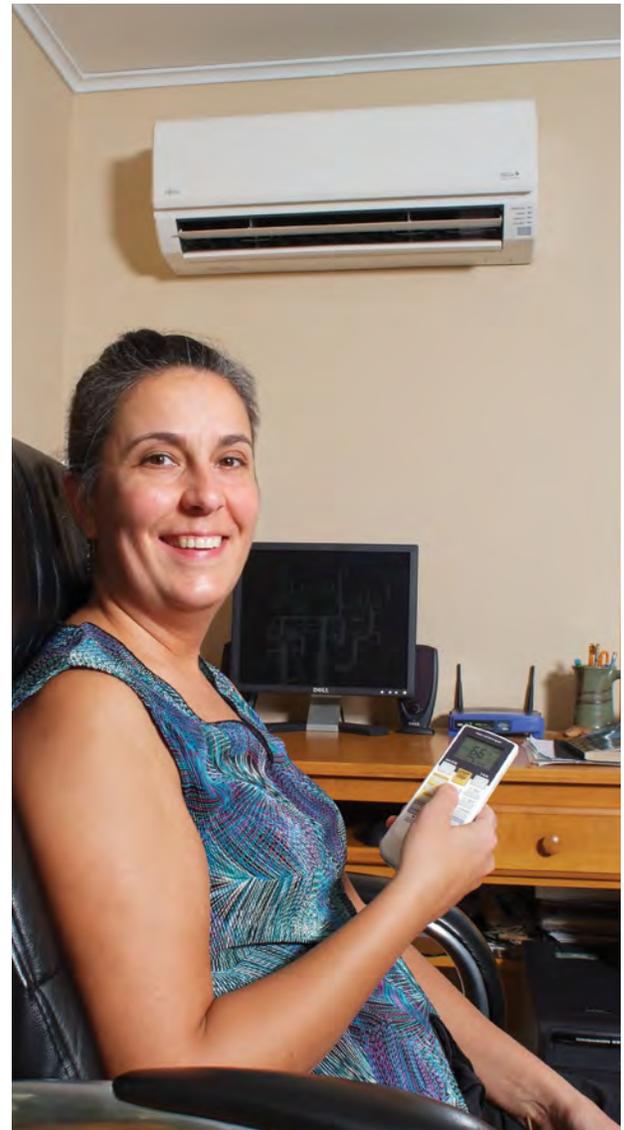
and last up to 10 times longer. This enabled them to replace almost all of the inefficient, incandescent light bulbs around their home.

According to Ken, "We couldn't believe what a good deal these bulbs are. It was a no brainer for us to upgrade our entire house with energy-efficient lighting that would lower our energy usage and bills."

**Total lifetime savings from energy-efficient lighting throughout the home: 1605 kilowatt-hours.**

Overall, the Rosengrant family had a very positive experience with the HES program. "The technicians that did our efficiency study and those who made the improvements to our home were very professional and helpful, answering my many questions and explaining how things worked."

"I think our house now is as energy efficient as we can make it, without going solar or installing a geothermic unit," said Ellen. "Our new heating/cooling system made our home much more comfortable, too."



THE WALL-MOUNTED DUCTLESS HEAT PUMP UNIT IS CONTROLLED WITH A HAND-HELD REMOTE.



INEFFICIENT INCANDESCENT LIGHT BULBS WERE REPLACED WITH COMPACT FLUORESCENT BULBS, WHICH USE UP TO 75 PERCENT LESS ENERGY AND LAST UP TO 10 TIMES LONGER.

## Benefits

- Core program services valued at an average of \$1000 – available to eligible customers for a small fee, depending on how you heat your home.\*
- Energy experts use instrument-guided technology to identify critical air leaks and drafts.
- On-the-spot professional caulking, sealing and hot water pipe insulation.
- Energy-saving light bulbs included in the core services.
- Exclusive ENERGY STAR® appliance rebates.
- Financing is available for residents interested in additional energy-efficient improvements including insulation and HVAC upgrades.
- Services result in monthly, year-round energy savings.

\*Subject to change and funding availability

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