

## Groton residents harness geothermal energy

*Local residents Savas and Patty Danos took advantage of an existing well on their property to successfully install a very cost effective geothermal home heating and cooling system.*

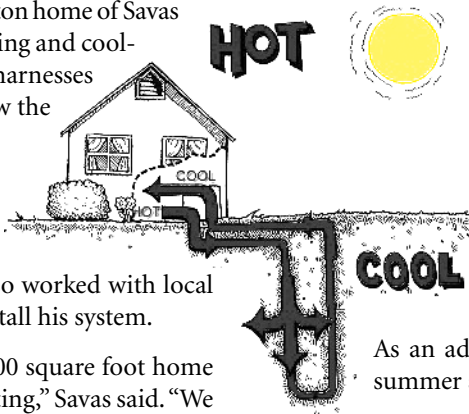
Heating costs were down this winter at the Groton home of Savas and Patty Danos, thanks to a geothermal heating and cooling system installed last spring. The system harnesses the constant temperature of water from below the earth for both heating and cooling.

As Manager of the Littleton Electric Light and Water Departments, Savas understands the technology of water and electricity, two main geothermal system components. He also worked with local well and HVAC contractors to design and install his system.

“The geothermal system heats our entire 3,000 square foot home for approximately 30 to 50% less than oil heating,” Savas said. “We have a coal/wood burning stove, but only use it on very cold nights and sometimes weekends for the ambiance.”

### How does it work?

Savas chose a three-phase system that uses fresh water from their well along with a heat exchanger and water pumps that run on electricity and supply heat to a forced air duct system in their home. The first phase of the system can heat the air to 92 degrees using well water. This phase will usually keep the home at a comfortable temperature.



The second phase comes on when it is too cold to maintain the temperature in the house, usually kept between 68 and 70 in the middle of the winter. Savas said the third phase, electric resistance heat, is strictly used as a back-up heat source and is only used when the temperature is raised too quickly during the cold winter.

The system also works to cool the house in the summer, cutting air conditioning costs.

As an added benefit, the heat exchanger transfers hot summer air to the water heating system.

The costs and payback periods for a geothermal system vary, but Savas and Patty are happy with their energy savings. A major cost advantage to their installation was the existing bedrock well on their property. Their deep rock well produces 40 gallons per minute of flow, which is well above the 12 gallons per minute required for their four-ton HVAC unit. A new well can cost up to \$20,000.

For more details regarding his geothermal system, please contact Savas at [sdanos@lelwd.com](mailto:sdanos@lelwd.com).

## Have a pool pump? Save money with our time-of-use rates!

While only one percent of Groton customers now use our voluntary time-of-use rates, they have shifted a significant portion of their electric use to off-peak hours to cut their electric bills.

Participating customers shifted 2.7% of their electric use from the peak hours of 11 a.m. to 7 p.m. to our off-peak hours of 11 p.m. to 7 a.m. during the first year of our time-of-use rates. In addition to using lower cost off-peak power, cost savings were also realized because they decreased their contribution to Groton Electric's monthly peak by 17%.

We can offer savings to time-of-use customers because Groton's power costs are based on the high cost of electricity for peak hours during the day as well as the monthly and annual peak hours in the region. Cutting electric use during these peak-use hours can result in substantial savings for Groton Electric—savings we can pass on to those willing and able to shift their use to off-peak times.

The best candidates for time-of-use rates are those with pool pumps on timers who can program timers to off-peak hours and who also have low air conditioning use. If you fall into that category, give us a call at 978-448-1150 to start saving with time-of-use rates.

## WAYS TO SAVE

# Don't miss these great energy-saving programs

Groton Electric offers many energy-saving programs to help our customers, and there's a new state appliance rebate program starting in April. Choose what works for you:

### Energy-efficient bulbs

Twice a year Groton Electric offers CFL (compact fluorescent light) bulbs for \$1 each. These bulbs cost GELD more than \$2 each so we subsidize the difference. By using CFLs, you can reduce the lighting portion of your bill by up to 75%.

**BULB SALE—APRIL 1 to 10—\$1.00 EACH, LIMIT 10.**

### Infrared camera scan

A Groton Electric employee will use an infrared camera to scan and take pictures of the walls, windows and doors of your home to identify areas of heat loss. Customers receive a report with infrared and digital pictures of the problem areas. This service is at no cost to our customers.

### Online energy calculator

Identify the energy users in your home by completing an online audit of the items in your home that use electricity. You can print a report and see specifically where the dollars on your electric bill are spent. Find the energy calculator at [grotonelectric.org](http://grotonelectric.org), choose energy conservation, then click on the energy calculator and follow the instructions.

### Old refrigerator/freezer pick-up

We have partnered with JACO Environmental Inc. to offer appliance removal and recycling to Groton residents. To schedule a pick-up of your old refrigerator or freezer at NO COST to you, call 1-877-545-4113.

### Time-of-use rates

If you can shift some of your high electricity use during the day to late night—such as programming a timer on a pool pump—you can save money on your electric bill by switching to our time-of-use rates. See the article on time of use (Have a pool pump?) on the reverse page.

### Energy audit

Groton Electric offers full energy audits through HELPS—Home Energy Loss Prevention Service. Although these audits do not cost our customers any money, GELD pays approximately \$275 for each audit. To schedule an audit, call 1-888-333-7525.

### Switch and outlet insulation gaskets

Heat can escape through the light switches and outlets on outside walls of your home. Groton Electric offers insulator gaskets that are easily placed behind the switch or outlet to help with heat loss. These are available at our main office on Station Avenue.

### State appliance rebates \*limited offer\*

On Earth Day, April 22, the Commonwealth of Massachusetts will begin “The Mass Save Great Appliance Exchange” using federal stimulus money. The American Recovery and Reinvestment Act allocated \$6.2 million to Massachusetts to administer an Energy Efficient Appliance Rebate Program designed to spur significant household energy savings by taking high energy consuming home appliances out of commission and replacing them with qualified ENERGY STAR® models.

Initial information, including an overview of the rebate process, is now online at [masssave.com/GAX](http://masssave.com/GAX). In coming weeks, the site will list refrigerator, dishwasher, clothes washer and freezer models that will be eligible for the rebate in April. The program will continue as long as rebate supplies last, on a **first-come, first-served** basis.



### Congratulations Grads—Linemen First Class!

Ryan Andrews and Dan Johnson graduated from Lineman Apprentice School in December 2009. After four years of classroom and “real world” experience, Ryan and Dan have been promoted to First Class Linemen!