



Maple Street homeowner Ken Wells (right) explains to Energy Day visitors how his backyard solar panels produce electricity from sunlight.



East Andover resident Bart Green with his sun-tracking solar-electric panels (left) and his solar hot-water installation (right). Photos: Larry Chase

Local Alternative-Energy Users Show Visitors How They Do It

By Larry Chase
Andover Energy Group

About 50 local residents and students from Colby-Sawyer College showed up for Andover's first Energy Awareness Day on Saturday, November 3. Hosted by the Andover Energy Group, attendees were able to visit with four homeowners who had installed solar photovoltaic and solar hot-water systems, and a local resident who has built a straw-bale home. Proctor Academy also offered tours of its biomass central heating system and a dormitory heated and cooled by geothermal energy. A local bed and breakfast showed off its high-

efficiency propane heating system. Also available for tire-kicking was a collection of fuel-efficient vehicles: three brand-new hybrids supplied by the Grappone Automotive Group, a do-it-yourself all-electric 1972 Volkswagen Beetle, and several gas-sipping daily drivers.

RP Johnson & Son also contributed to the day by setting up a special display of weatherization products and tools. And the Town Hall meeting room was filled with literature supplied by the New Hampshire Electric Cooperative, books on energy-related issues supplied by the Andover Public Library, a computerized

slide show depicting the installation of a local geothermal heating and cooling system, and cider and doughnuts supplied by the Andover Energy Group.

Below are summaries of information handed out to visitors to the four Andover solar-powered homes participating in the event. For copies of the full information handouts, send an e-mail to LBChase@aol.com specifying which installations you're interested in.

Mary Ann Broshek's solar hot water heating system

76 Shaw Hill Road
Installed fall 2012

System overview prepared by system designer/installer ReVision Energy (RevisionEnergy.com), Portland Maine: ReVision Energy proposed a closed-loop antifreeze solar hot water system, utilizing two solar hot water collectors, a 105-gallon storage tank, and a pre-engineered solar pump station. The system is designed for primary solar domestic water heating with backup coming from the existing oil boiler.

On a good sunny day, the solar system will produce a 60- to 70-degree temperature rise in the solar tank and will be sufficient to provide most domestic hot water needs in the spring, summer, and fall. In the winter, when less solar energy is available, the oil boiler will supplement as necessary to ensure a consistent

supply of comfortable hot water. The solar hot-water system will produce more than 19 million BTUs of clean, renewable heat energy annually and, by reducing the amount of fossil fuel burned, it will eliminate over 4,500 pounds of carbon emissions annually.

System operation: Whenever the rooftop collectors are warmer than the water in the bottom of the storage tank, a differential temperature sensor automatically activates the solar circulating pump affixed to the solar tank. Sun-heated antifreeze is pumped down from the collectors and through a heat exchange coil located in the bottom of the storage tank. The heat from the sun is transferred to the water in the tank and, in the spring, summer, and fall, will meet most of the household's domestic hot-water needs.

Cost: \$11,416 for complete system and installation, minus \$1,500 rebate from the Public Utilities Commission and \$1,500 from New Hampshire Electric Coop comes to \$8,416. Subtract a 30% tax credit of \$2,524 and the net cost is \$5,892. Estimated payback time frame: six years.

Steve and Gisela Darling's solar hot-water heating system

206 Bridge Road
Installed November-December 2010

What: Solar hot-water heating system integrated with domestic hot water and radiant floor heating

Why: Accomplish a 30-year ambition to become more energy independent. Help assure that there will be some fossil fuel available for our daughter and her children.

Reduce the amount of carbon sent into the atmosphere to slow climate change. Save more than \$800 per year.

How much: \$6,034 after 30% federal rebate. Steve installed the system himself.

The system has two separate active loops, with one transferring hot water warmed by sun in the solar collectors to two hot-water storage tanks in the cellar of the house. The other loop takes hot water from the two tanks and moves it to the domestic hot-water system in the

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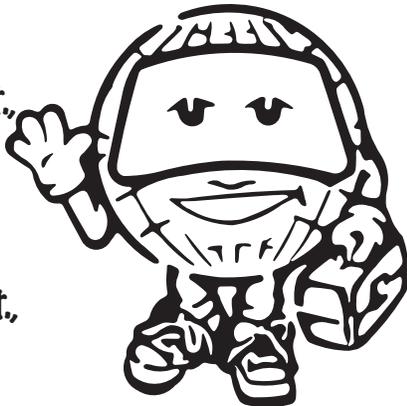
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Pantry from page 27

- Deodorant

Local Eggs

Finally, a special request to all who raise chickens. If you could donate fresh local eggs, they would be greatly appreciated. We have a small cooler, and empty egg cartons are available – take as many as you need!

The Andover Food Pantry is sponsored by the Andover Lions Club and *The Andover Beacon* to provide basic necessities to those in need. It's located downstairs at the Andover Town Hall and is open whenever the Town Hall is open. It's self-service, no sign-up required, no questions asked. Take what you need, drop off what you can. Thank you!

