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## Save green by going green

### Unconventional heating options can help homeowners cut down on energy consumption

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Homeowners who are concerned about their consumption of energy (particularly fossil fuels), air quality inside and outside the home and finances, can turn to environmentally friendly or "green" companies that offer a choice beyond conventional home-heating options.

"We try to help our clients reduce their impact on the planet," said Jonathan Harkness, co-owner of EBM Consulting Services in Millbrook. He and his wife, Vicki, run the renewable energy company from their organic farm.

When facing the array of ways to make your home greener, start with the basics, the experts advise. Just like conventional home-heating consultants also say, insulation and sealing the home should be the first consideration.

"The first thing I tell everybody is, your money is better spent if you conserve first. Better insulate your home, set back the thermostats, take care of weather stripping - do everything you can to reduce the amount you're consuming," Harkness said.

John Boggs of Superior Insulators in Rhinebeck specializes in green insulation.

"As part of our company mission, we have decided not to use manmade manufactured fibers, such as Fiberglas and rock wool," Boggs said.

He said particularly in cases where Fiberglas insulation is old, settled, or improperly installed, the material is not only lower in efficiency, but can release particles into the home environment that can cause or exacerbate respiratory illnesses.

Superior Insulators primarily use a spray foam form of insulation.

"It's a green product and mega-efficient. It seals cracks and crevices in the home, not allowing air infiltration to take place," Boggs said.

"Greenwise, the foams we use are based on water propellants and made from sugar cane, sugar beets, corn. The product releases no volatile organic compounds, no ozone, and meets fire ratings for federal code. They are formulated with antimicrobial ingredients. And they don't settle or shrink," he said.

The company also uses cellulose - made from recycled newspaper and wood chips - and cotton batts, which replace rolls of Fiberglas. Combinations of foam and cellulose or cotton batting are a common and economical compromise.

Once the home is well sealed, a homeowner might consider making small changes, such as changing the fuel source in their oil-fired boiler.

Even in a completely conventional existing system, there are ways to use alternative energy, Harkness said.

"A small effort is better than none," Harkness said. "You're still contributing to renewable industry. Vote with your pocketbooks and it will strengthen these companies.

"We use biodiesel to heat our home since 2001. We run a business vehicle and a tractor with biodiesel. It's using plant derivatives as a fuel source," he said.

Kevin Taylor of George M. Taylor & Son oil company in Dover Plains said they have been selling the B20 blend of biodiesel in Dutchess, Putnam and Columbia counties since September.

The B20 blend means it's 20 percent soybean oil and 80 percent petroleum-based fuel.

"It's more environmentally friendly and it's lessening our dependency on foreign oil by 20 percent," Taylor said. "Other than that, it burns cleaner. I have it on my personal truck and all our fuel oil trucks, and I think it runs better."

He said the biodiesel adapts instantly in conventional diesel or fuel oil applications.

"Anything that can take diesel can take biodiesel," Taylor said, depending on the blend. "If you go for B20, no adjustments are needed. If we went B50 or B100 blends, there are significant changes you have to make to vehicles and home heating equipment. I don't think you'll see that happen for a while."

For homeowners that want to cut down their fuel consumption even more, solar-heated water may be another step, installers advised.

"If they have access to sunlight, they can keep the boiler off for all but five or six months of the year," Harkness said.

Photovoltaic panels convert sunlight to electricity, which warms water or provides power to the home.

Hudson Valley Clean Energy in Rhinebeck is a full-service renewable energy company. Co-owner John Wright acknowledged the installation costs for adding photovoltaic panels can be an issue of concern for some homeowners. It's a matter of long-range thinking, he said.

"Most of our customers are concerned with the environment, but also with the financial issues of escalating energy prices. It's financially smart. It's more money upfront. But the saying, 'Pay now or pay later' is very relevant to energy," Wright said.

Prices for the systems have a wide range because of variables in the home, property, choice of panels, tax credits and federal rebates.

According to Harkness, a solar water heater for a family of four can run \$9,000 to \$13,000 before incentives are taken into consideration. An entry-level solar electricity system might be in the range of \$8,000 to \$15,000 after incentives, and most solar electric systems for homes have a 15- to 20-year payback rate, Harkness wrote in an e-mail.

Professional certification is also something to consider. Harkness recommends looking for affiliation with the North American Board of Certified Energy Practitioners or the Association of Energy Engineers.

Harkness said adding photovoltaic power to the home's energy mix is a bit more involved, but can speed the return on investment. If more electricity is generated by the panels than the home uses, the system automatically sells the electricity back to the utility at the retail price, effectively spinning the home's power meter backward.

The panels themselves are extremely low-maintenance and have a lifespan of 30 to 40 years. Solar thermal water systems should last about 20 years, and need professional care about every three years, the experts said.

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