



Natural Selection

For some coastal Sussex property owners, installing green energy technology puts some green back in their wallets

BY JAMES DIEHL, PHOTOGRAPHS BY KEVIN FLEMING

Rehoboth-area resident Ron Bass loves getting up early to look at his electric meter, especially on windy days.

More often than not, he can't suppress a grin. Early mornings give him a chance to witness a phenomenon most coastal Delawareans have never experienced — at least not yet. That's when Bass's meter whirs backward.

In November 2007, Bass became the first customer of Millsboro-based NextGen Energy Inc., which installs residential wind turbine systems, also known as "green electricity." The three-bladed, 4-foot-tall turbine on a 30-foot tower at his home in Rehoboth Shores, outside Rehoboth, went into service Dec. 20 and began generating electricity at an average rate of 2 kilowatts per hour.

During the day, Bass's power consumption is generally higher than 2 kilowatts, but at night, it's lower. Often much lower. Additional electricity generated

during those overnight hours automatically gets sent back to Delmarva Power's electric grid, giving Bass a credit on his monthly bill.

"The idea that I can put electricity out on the market and get paid for it is just a great feeling,"

The electricity generated by the wind turbine on top of his Rehoboth-area home makes Ron Bass smile. He gets a credit on his monthly electric bill for the power the three-blade turbine generates.



says Bass, who moved to the Rehoboth area from Baltimore in 2001. "It's a real interesting experience to see the meter turning in the opposite direction."

A GREEN TREND

Bass's installation is part of a national trend, with more people exploring advances in environmentally friendly "green" energy technology, such as wind, solar and geothermal. Many homeowners, but far more businesses, are taking advantage of new financial incentives in Delaware to become more energy-efficient.

Those incentives have risen dramatically in recent years. Today, as much as 50 percent of the cost of a qualified renewable-energy system can be offset by money collected by Delaware's electric utilities and managed by the Delaware Energy Office.

The money comes from charges assessed

"People will do this for a lot of reasons, but the goodness of your heart will only go so far. The incentives from the state were the icing on the cake for me."

to all electricity customers in the state. For customers of Delmarva Power, the monthly charge for the average homeowner is around 35 cents; for customers of Delaware Electric Cooperative and the state's municipal utilities, the charge adds about 18 cents to the average household's monthly electricity bill.

Homeowners and businesses can get

grants from the fund to recoup some of the costs of renewable energy systems, including solar, wind, solar water-heating and geothermal. Money is sent to homeowners in the form of a state check once all required paperwork has been completed and submitted.

But, even with such financial assistance,

Long interested in renewable forms of energy, but hindered by the cost, Gary Cannon installed 20 solar panels on his roof last year after state subsidies became available to promote green technology.

upfront costs keep renewable energy installations out of reach for many homeowners. To date, most systems in coastal Delaware, and throughout the state, have been installed by businesses.

Local businesses that have had renewable energy systems installed within the last couple of years include the former C.P. Diver car dealership (now the Lewes Auto Mall), the Movies at Midway, the Ocean Atlantic real estate firm and Schell Brothers, a home-building company.

Cape Gazette newspaper publisher Dennis Forney decided last year to take advantage of the increased state subsidies, covering the roof of his main office building near Lewes with more than 60 solar panels.

The 23-kilowatt array cost about \$160,000, but Forney saw it as an investment that would pay off. "We figured it was a good thing to do and, if we were going to do it, why not do it now when we could get a \$160,000 system for half of the money?" Forney says. "We think in the long run it's going to be a pretty good investment."

Forney figures his system will pay for itself in electricity savings within seven or eight years. The time it takes to recoup the costs depends on the type and size of system being installed.

Although the financial incentives offered by the state and federal governments have given a push to the renewable-energy movement, the greatest shot in the arm came when Delmarva Power announced a 59-percent hike in electricity rates in 2006, says Scott Lynch, a program planner for the state's Green Energy program.

"At that point, I think people started realizing that they needed to look into other options," Lynch says. "They began to see that we're not going to have stable electricity prices for years and years. Our marketing [of the grant program] has also had a major effect, but [Delmarva Power's rate hike] definitely gave us a boost."

Though the numbers are still relatively small compared to other states, Delaware currently ranks sixth in the nation in the number of renewable energy installations per capita, trailing California, New Jersey, Arizona, New Mexico and Hawaii, according to data from the Interstate Renewable Energy Council.

About 12 percent of Delaware installations between 2003 and 2007 have been in the Lewes and Rehoboth areas, according to Lynch. ▶

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The numbers are encouraging as state and federal officials vow to reduce the amount of carbon emitted into the atmosphere.

"We all have a vital role to play and I believe Delaware is starting to get its act together on this front," says U.S. Sen. Tom Carper, who used the coal-burning Indian River Power Plant as a backdrop two years ago when touting plans to introduce new clean air legislation. "I'm very encouraged that there is entrepreneurial activity in Sussex County, activity that can help us meet our energy needs from renewable sources of energy," adds Carper, now the ranking member of the Senate's Clean Air, Climate Change and Nuclear Safety Subcommittee. "As the price of energy continues to rise and technology for solar and wind power continues to improve, we're going to see more people looking into these sources of energy."

SAVING WITH SUN POWER

Hoping to establish themselves as forerunners of the "go green" movement in coastal

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Delaware, a few new businesses have been established recently to provide businesses and homeowners with the latest in renewable energy technology. (See story on page 39.)

"With energy prices going up significantly over the last few years, it's becoming more economically sensible to begin using renewable energy," says Justin Healy, a partner in Rehoboth Beach-based Delaware Renewable Energy Co., a division of the Ocean Atlantic real estate group. "There are also more people who realize it's just the right thing to do. The panels

Cape Gazette newspaper publisher Dennis Forney is happy with the solar panel energy system on his Lewes-area office building. He sees it as a good investment that will pay for itself in savings on his electric bill in seven or eight years.

have become much more efficient and the subsidies are helping greatly."

Those subsidies got the attention of Gary Cannon, a resident of Bay Harbor near Rehoboth Beach.

For years, Cannon looked into various forms of renewable energy — researching, crunching numbers and, more or less, waiting for his opportunity. Then, with the increase in state incentives, he finally took the leap late last year.

He couldn't be happier with his decision. "I actually think I would have done this

anyway, but the rebates and the tax credits made it a much easier decision," says Cannon, owner of the Dewey Beach Grill. "People will do this for a lot of reasons, but the goodness of your heart will only go so far. The incentives from the state were the icing on the cake for me."

Last October, Cannon had 20 solar panels installed on the roof of his home. After rebates from the state and tax credits from the federal government, his cost for a \$28,000 system was reduced to \$12,000.

He figures he will have recouped every penny of that in energy savings by 2014. "The panels are guaranteed for 25 years, so it just makes great sense as an investment," he says.

Cannon, whose Dewey Beach restaurant keeps him busy during the summer months, is so committed to the alternative energy movement that he joined the sales team at Delaware Renewable Energy.

"I don't see myself as a hard-nosed salesman, but I have some free time in the winter and I want to help get the word out," Cannon says. "I just want to show other people that they can do it."

On the state level, Lynch manages available subsidies through the Delaware Green Energy program, which actually consists of three separate programs: one for the state's investor-owned utilities (Delmarva Power is the only one); one for the state's municipal utilities; and one for the Delaware Electric Cooperative.

Grants are available for 50 percent of installation costs for solar-power systems, solar water-heating, fuel cells and wind turbine systems, with certain caps. (See story on page 41.) All systems must be installed by an approved contractor and must carry a full five-year warranty.

In addition to incentives offered by the state, homeowners are also eligible for

Not Just Tree-Huggers

While the initial financial outlay for an alternative energy system can be burdensome for homeowners, more people are beginning to inquire about new technologies in the hope of including those upfront costs in new home mortgages, according to local contractors.

"I used to just build regular homes, but now it seems like everyone is more accepting of something different," says Sigurd Berzins, owner of ESB Inc., a custom home builder based in Bethany Beach. "If the market was better right now, I don't think I could keep up with the interest. I've got people who are just waiting to do it."

Chris Schell, co-owner of Schell Brothers, a Rehoboth Beach construction company, and a partner in Delaware Renewable Energy, recently co-founded a company named Zero Energy, which specializes in homes that are more energy-efficient from top to bottom.

He hopes to capitalize on the changing mindset toward renewable energy options.

"We thought about taking Schell Brothers completely green, but we were worried that some of our customers wouldn't want to go green," Schell says. "There is still a conception out there that a green building is only for tree-hugger, granola types. But that conception is starting to change."

Interest has continued to grow every year in the First State. In 2002, the first year of Delaware's green energy program, there were only four renewable energy installations statewide. A year later, there were 15; in 2004 that number grew to 18 and in 2005, it rose to 29. Then Delmarva Power announced its rate hike and renewable energy installations in Delaware rose to 80 in 2006. Last year, the number hit the century mark for the first time, with 108 Delaware home and business owners installing renewable energy systems.

And, with technology constantly improving, builders are reporting an interest in homes that could even use a hybrid form of renewable energy options. "We're starting to see an interest in blending [solar and wind technology together]," says Brian Lisiewski, a partner in NextGen, a Millsboro wind turbine installer. "So whether it's cloudy and windy or sunny and clear, you can still generate electricity." ■

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federal tax credits for qualified solar water-heating and photovoltaic systems placed in service between Jan. 1, 2006 and Dec. 31, 2008. Carper says there is talk of extending the program past the 2008 deadline.

EARTH AND WIND POWER

In the last five years, 250 renewable energy systems have been installed statewide — 30 of them in the Rehoboth-Lewes area. The majority of those installations have been geothermal systems, which use the natural heat storage capacity of the earth to provide energy-efficient heating and cooling. In that time span, 18 of the 25 renewable energy installations in Rehoboth and three of five in Lewes were geothermal.

Bill Zak and his wife, Kit, for example, had five wells and tubing installed underground for their geothermal heat pump during construction of their Lewes-area home.

In the last five years, there have been 250 renewable energy installations statewide — 30 of them in the Rehoboth-Lewes area.

“The more we looked into it, we realized there was a significant costs savings and it was environmentally better than burning fossil fuels,” says Zak, who founded the environmental watchdog group Citizens for Clean Power in 2004. “It’s much more efficient and it saves as much as half off our heating and cooling bills.”

While geothermal and solar technologies have been at the forefront of the current “go green” movement, relying on the area’s often strong winds is also an option when considering a renewable energy system. That is, if you live in the right area.

Taking advantage of the wind along the coastline is a major draw for NextGen’s line of residential wind turbines. But, if you live more than a few miles inland, the financial incentives offered by state and local agen-

Alternative Energy Options

Alternative energy includes several types of energy-producing systems. What do they have in common? They don’t depend on fossil fuel, for one. Many experts maintain that they are better for the environment — and for mankind. Here’s a comparison to help you decide if you should make the switch.

Photovoltaic (solar)

Pro: Solar energy will cause no pollution and generate no waste. The supply of available solar energy is unlimited.

Con: The initial cost. Also, no solar energy is produced at night.

Price range: Small home (1,500 square feet), a small system, which will produce 2 kilowatts per hour during periods of peak sunlight, consists of about 10 solar panels and costs around \$18,000 installed. Large home (2,500 square feet), a larger system, which will produce 7.6 kilowatts per hour during periods of peak sunlight, consists of about 38 solar panels and costs around \$63,000 installed.

State grants: 50 percent of the cost of equipment and installation with a maximum grant of \$31,500 for Delmarva Power’s residential customers (\$15,000 for customers of Delaware Electric Cooperative and the state’s municipal utilities) and \$250,000 for Delmarva Power’s nonresidential customers (\$30,000 for nonresidential customers of Delaware Electric Cooperative and the state’s municipal utilities).

Federal tax credits: Tax credits are available at 30 percent of the system’s cost. For individuals, the maximum credit is \$2,000.

Price estimates provided by Delaware Renewable Energy Inc.

Small wind turbines

Pro: Wind is free and wind turbines produce no waste or greenhouse gases. Wind turbines also operate 24 hours a day.

Con: The wind is not always predictable — some days there is no wind.

Price range: Small unit: A small wind turbine, which will produce an average of 325 kilowatt-hours per month, costs about \$15,000 installed. Large unit: A larger residential turbine, which will produce an average of 1,100 kilowatt-hours per month,

costs \$30,000 to \$32,000 installed.

State grants: 50 percent of the cost of equipment and installation with a maximum grant amount of \$22,500 for Delmarva Power’s residential customers (\$15,000 for customers of Delaware Electric Cooperative and the state’s municipal utilities) and \$100,000 for Delmarva Power’s nonresidential customers (\$30,000 for nonresidential customers of Delaware Electric Cooperative and the state’s municipal utilities).

Federal tax credits: There is currently no federal tax credit for small wind turbines. The federal Production Tax Credit applies only to large utility-scale wind projects, not small wind turbines. Two Small Wind Investment Tax Credit bills are currently in Congress — one in the House (H.R. 1772), and one in the Senate (S. 673) — that would provide consumers a tax credit when purchasing small wind turbines for their homes, farms or small businesses.

Price estimates provided by NextGen Energy Inc.

Solar water-heating

Pro: Much less expensive than other forms; reduced demand for fossil fuels.

Con: No solar energy is produced at night.

Price range: Small home (one or two people): A 40- to 60-gallon system costs \$4,000 to \$6,000 installed. Large home (three to five people): An 80- to 120-gallon system costs \$7,000 to \$10,000 installed.

State grants: 50 percent of the cost of equipment and installation with a maximum grant amount of \$3,000 for all residential customers and \$250,000 for nonresidential customers of Delmarva Power (\$10,000 for nonresidential customers of Delaware Electric Cooperative and the state’s municipal utilities).

Federal tax credits: Tax credits are available at 30 percent of the cost of the system. For individuals, the maximum credit is \$2,000. To qualify for the credits, at least half the energy used to heat the dwelling’s water must be from solar.

Price estimates provided by Zero Energy Homes.

Solar water integrated into radiant floor

Pro: More consistent comfort levels than a

forced-air system. You don’t need a separate hot-water heater.

Con: If you require central air conditioning, your overall heating and cooling system equipment cost will be higher, since you have to install two delivery systems (piping for the heat and ducts for cooling).

Price range: Small home (2,000 square feet): Entire system for an existing home would cost about \$13,000 to \$18,000. Large home (4,000 square feet): Entire system for an existing home would cost about \$26,000 to \$32,000.

State grants: 50 percent of the cost of equipment and installation with a maximum grant amount of \$5,000 for all residential customers and \$250,000 for nonresidential customers of Delmarva Power (\$10,000 for nonresidential customers of Delaware Electric Cooperative and the state’s municipal utilities).

Federal tax credits: Tax credits are available at 30 percent of the cost of the system. For individuals, the maximum credit is \$2,000. To qualify for the credits, at least half the energy used to heat the dwelling’s water must be from solar.

Price estimates provided by Zero Energy Homes.

Geothermal

Pro: More energy-efficient than heat pumps.

Con: Startup costs can be very expensive.

Price range: Small home (1,500 square feet): \$24,900 installed. Larger home (2,500 square feet): \$31,100 installed.

State grants: State grants are available for geothermal heat pumps at a maximum of \$600 per ton capped at \$3,000 for residential systems and \$25,000 for nonresidential systems.

Federal tax credits: 10 percent of the cost of building envelope improvements; 100 percent for qualified energy property (heating, cooling, water heaters). Maximum of \$500 for a two-year tax period.

Price estimates provided by Service Today Inc.

All renewable energy systems must be installed by a participating contractor and must carry a full five-year warranty to be eligible for state grants.

For more information on federal tax credits and state grants: www.dsireusa.org

For more information on Delaware state grants: www.delaware-energy.com/green-energy-program-home.htm

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cies can decrease significantly, or even disappear altogether.

That's because the incentives vary according to average strength of the wind, based on maps published by the U.S. Department of Energy's wind program and the National Renewable Energy Laboratory. As a renewable resource, wind strength is classified according to power classes, which range from 1 (the lowest) to 7 (the highest).

"Along the coastline, we are located in a Class 2 wind resource zone. That's [the minimum] required to receive the grant money," Lisiewski says. "Up and down our coastline, we have a pretty decent wind resource. But, about 10 miles from the coast, it's classified as Class 1, so [residents there] wouldn't be eligible."

So, taking advantage of the winds along the coast would seem a practical choice for residents of the immediate coastline. But, a few miles inland, residents would have to look at other options, such as solar.

DOLLARS-AND-CENTS DECISION

Solar is becoming more economically sensible as a long-term investment, says Healy, but it has another benefit that has broader implications: installing a system decreases the reliance on fossil fuels. "That will immediately help with global warming and the emission of greenhouse gases. I think people are starting to get the fact that we need to depend more on renewable energy sources in the future."

In the end, however, it comes down to a dollars-and-cents issue for many homeowners. While state subsidies and federal tax credits are helping, installing a renewable energy system still requires a substantial upfront investment.

And there's also the unknown of what an installation could do to future property values. Relevant data is not yet available.

"It's new technology that's unproven and untried as to what it will add to the value of a property," says Bill Lucks, president of the Sussex County Association of Realtors. "To build a green property is very expensive and, while it's a high interest point right now, it's hard to determine the long-term value of it. But we are keeping an eye on it."

So is windmill owner Ron Bass — literally. "I'm just hoping for a lot of windy days," he says with a laugh. ■

JAMES DIEHL is a freelance writer who lives in Seaford. He is a regular contributor to *Delaware Beach Life*.

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