

# solar energy Pioneers



WRITTEN BY JAMIE MILES  
PHOTOGRAPHED BY DENNIS MCDANIEL



## Local families invest in the future by harnessing the sun's power

In Ashley and Weyman Hunt's bustling kitchen, a bulletin board displays a patchwork of their young sons' tempera paintings and a Georgia Power bill heralding a \$7 credit. This is Weyman's prize, appropriately featured among his children's masterpieces. The reason for this unheard-of power bill lies in a clearing just outside the family room window: a series of photovoltaic panels converting sunlight to electricity.

The Hunts are local pioneers on the frontier of renewable energy. Utilizing two proven ways to harness the sun's power, they produce thermal solar-heated water and photovoltaic energy. While the terms may sound high tech, they translate into hot baths for three busy boys, unlimited loads of muddy socks made clean, and enough electricity to power a home full of twenty-first century gadgets and toys. Judging by this traditional family's lifestyle, green energy may soon become mainstream.



Ashley Hunt and her sons bathe their puppy in a clawfoot tub with water heated by a solar system on their roof. Inset: The front of the Hunts' house reveals no sign of the solar technology on their roof or in their backyard.



When Ashley and Weyman built their spacious family home on

the edge of Madison's historic district three years ago, they used the most energy efficient materials available, installing foam insulation and high-efficiency windows and doors. Even with the constant activity behind their many picture windows, their highest power bill in the summer was \$285. "We had such success with the high-efficiency building products; the next logical step was looking into solar energy options," says Weyman.

After discussing the benefits with Josef Kullmann, president of Madison-based Solar Sun World, the Hunts installed a thermal solar system on their roof. These three solar panels efficiently heat a 120-gallon tank, providing for the family's daily hot water needs. (According to the EPA, hot water accounts for up to a third of a household's energy needs.) As sunshine warms the roof, it also heats an antifreeze-like fluid that flows through coils in the panels. This heated liquid runs down to the Hunts' basement to heat their water tank. On sunny days, the tank temperature can rise well above the preset level of 120 degrees. If a few days of cloud cover cause the water temperature to drop, a tankless water heater beside it bumps the temperature up to where it needs to be. But Weyman is quick to note that on most days, sun power alone keeps plenty of hot water flowing out of their showerheads and kitchen faucets.

Add federal and state tax credits to some power companies' favorable buyback rates, and it's easy to see why green energy makes perfect cents!

↓ Federal and State Residential Installation Incentives: **65% tax credit** (30% federal and 35% state)

↓ The rate of return for **Solar Thermal Systems** is approximately 4 to 6 years.

↓ The rate of return for **Solar Photovoltaic Systems** is 8 to 12 years, depending on utility company rates, incentive differences, and the rate of increased energy costs over the next 10 years.

↓ For more information on policies and incentives for renewable and efficient energy, see [dsireusa.org](http://dsireusa.org)

The wide, wooden countertops on the kitchen's island serve multiple purposes in this open, airy family room. The sun generates energy in even the most traditional rooms of the house.



After discovering federal and state tax incentives, Weyman decided to add an electricity-generating photovoltaic system to their property. Solar Sun World installed the series of panels in the Hunts' backyard. These high-tech power producers bask in the sun as comfortably as any reptiles lining the banks of the Amazon. When exposed to sunlight, the panels' semiconductor cells generate an electric current.

As approved producers in Georgia Power's Green Energy Program, electricity generated at the Hunts' house travels back

to the main grid. Georgia Power then sells the Hunts' electricity to customers who have chosen the renewable energy option. On the underside of the panels, myriad meters and gauges constantly flash productivity data. By checking the outgoing meter, Weyman can keep track of all the electricity his sun-loving panels have produced and sent to the grid. The incoming meter registers the number of kilowatt-hours their household has used.

It pays to have your own backyard power plant. Just ask Weyman. Georgia Power pays him 17 cents per kilowatt-hour for the green energy while charging him about 11

cents per kilowatt-hour for the electricity his family uses. It's no wonder they end up with \$20 power bills.

Looking out at the wooden platform of shiny panels, Weyman surmises, "Some people might not like the way they look, but to me they're kind of cool." Then he adds with a laugh, "And heck, they make me money."

The panels come with a 30-year warranty, which Weyman doesn't foresee using; though during last January's winter storm, his heart stopped after looking outside to see his boys jumping on the snow-covered panels.



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Mark and Jane Crawshaw are another local family plugged into the sun. Their restored farmhouse, set in the rolling Morgan County countryside, is home to a celebrity of sorts: a photovoltaic poster child, jokingly named "Mr. September." The apparatus got its nickname when it was featured that month in a high-tech calendar. While it may look like something out of *2001: A Space Odyssey*, the rotating tower's ability to effectively capture sunlight and produce electricity all year long is no tall tale.

This photovoltaic system contains the same panels as the Hunts' backyard, but there's a difference. The swiveling tower allows the Crawshaws' panels to track the sun's movement like a giant metallic heliotrope. Two truckloads of cement anchor the tower. Lightning rods decorate its corners as does a wind gauge. If wind gusts reach dangerous levels, the panels rotate down, lying prone so as not to catch the wind.

Straining to seize the sun's first rays each morning, the panels start out almost vertically, pointed due east. As the sun rises and moves westward, the panels follow their source of energy. In the middle of the summer, when the sun is directly overhead, the panels lie almost horizontal. The Crawshaws' rural homestead with its space and light provide the perfect spot for this tracking system that more than doubles the electricity output of the panels.

Like the Hunts, the Crawshaws first tried solar hot water before making the photovoltaic investment. Mark reasoned, "If my father living in England had hot water with this type of system, I was pretty sure it would work with the sunshine in Georgia." They installed six solar panels on top of a shed in the side yard. On bright sunny days, water in their tank can rise to 140 degrees and above. This system will store extra heat in other water tanks.

This stored heat travels through a heat exchanger to warm their house. When demand for indoor heating isn't as high, this extra energy shifts to heating the pool in late fall and early spring.

With government help on the installation costs and the green energy buyback benefits, Weyman figures his upfront investments will pay for themselves in eight years. Though he acknowledges that going solar was a leap of faith, it made sense on paper. "I look at it as an investment over the life of the system: one having a ten percent return on your money."

Mark Crawshaw agrees. Since most houses can easily be outfitted with a solar water heating system, Crawshaw advises



Weyman and the newest member of the family show off their \$0 power bill.

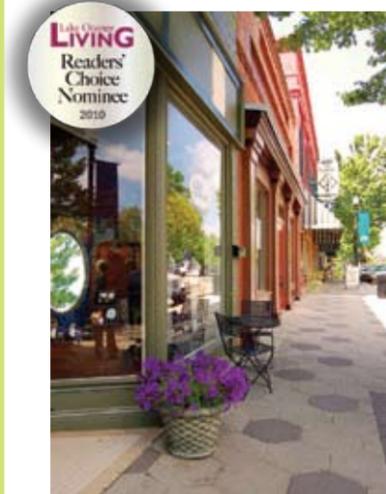
anyone building a house to try it. Even without a subsidy, the system provides plenty of hot water, and the rooftop panels themselves block sunlight, keeping the house cooler in summer.

Karl Steigle, a partner with Solar Sun World, waxes a bit more philosophical on reasons for investing in green energy. "Eventually some type of renewable energy is going to have to replace our finite sources such as oil, gas, and coal," he says. "It's a way to produce all the power you need without having to rely on foreign markets. How better to represent the American dream?"

*Jamie Miles is a freelance writer in Madison, Ga.*

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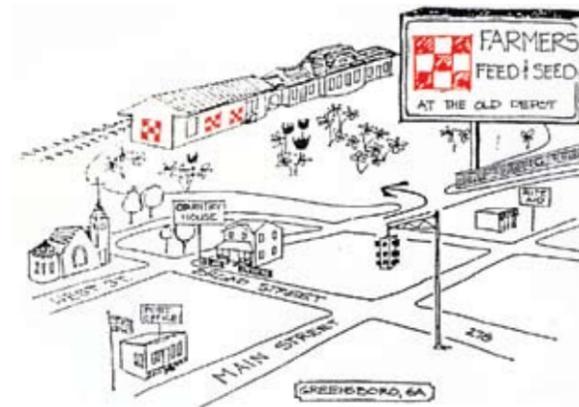


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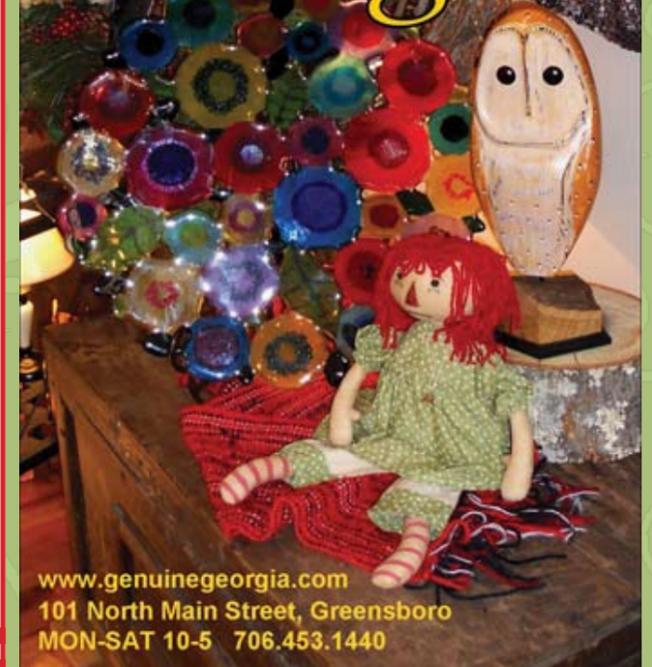
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