



## New company brings new options to solar energy market

By **DREW KERR**, [dkerr@poststar.com](mailto:dkerr@poststar.com) | Posted: Monday, March 8, 2010 10:32 pm

NORTHUMBERLAND -- The owner of a solar-energy company that is setting up shop in Saratoga County wants residents to know that the sun can be used for more than producing electricity.

While typically associated with renewable energy, solar panels can also be used to harness warmth from the sun to provide radiant heat and to warm water as part of so-called solar-thermal systems.

The technology has been around for years and is commonly deployed in other parts of the world, but it remains relatively rare in the United States, where emphasis and incentives are more often put on solar-electric systems.

Generally speaking, solar-thermal systems use solar panels to capture heat and warm coils that run through a storage tank that supplies water for showers, washing machines and other household needs.

The water can also be piped through tubes that run beneath floors to provide radiant heat.

"Right now, this is kind of an after-thought technology," Terry Moag, president of The Radiant Store, said last week during a visit to a home he recently outfitted in Northumberland. "We're driving the demand right now, advocating and creating interest in the product."

Moag is hoping he'll have a lot less convincing to do in the future.

Officials with the New York State Energy Research and Development Authority announced late last month that Moag's five-year-old company would get space this spring in the Saratoga Technology and Energy Park, which NYSERDA owns and operates in Malta.

The move will allow the firm's six employees to transition from a primarily field-based operation built around cell phones to a central location with more than 700 square feet of storage space.

NYSERDA officials are also looking to add solar-thermal systems to the authority's incentive program, which would allow residents to get reimbursements for part of the costs of installing the technology, just like incentives offered for solar-electric systems.

The state already offers a tax credit for up to 25 percent of the solar-thermal systems' costs, but direct payments through NYSERDA could prove more attractive, officials aid.

The incentives would be paid for through fees assessed to residents through utility bills and could be available as early as this year, said Jim Reis, who manages NYSERDA's residential energy affordability program.

"You never know what's going to happen, but I would say people should start looking now because once these incentives become available, we're going to get a lot of calls, and who knows how long it may last," he said.

Such incentives have been shown to produce results.

Moag said his company installed more than 80 solar-thermal systems last year, a 160 percent jump from the year before, largely because of a federal program that created a tax credit that covers up to 30 percent of the systems' costs.

Industry officials say they anticipate further growth this year, as more residents and builders take note of the government help and recognize the technology's potential to reduce the use of fossil fuel.

Exactly how much consumers can save on utility bills depends on the size of the home and the amount of water used, among other factors.

But hot water typically accounts for around 30 percent of a building's utility bill and comprises the third-largest use of energy in a typical home, after air conditioning and heating, according to the U.S. Department of Energy.

And the Solar Energy Industries Association, a national trade group, suggests the average cost of the systems is no more than \$8,000, and that money can be recovered within three to six years.

"It's the most cost-efficient solar technology out there today," said Reis, of NYSERDA.

It's also a relatively simple installation process. Retrofitting a home with a solar-thermal boiler can take as little as two days, officials said.

"It's a simple plumbing job; that's all it really is," said Monique Harris, director of communications for the Solar Energy Industries Association, a national trade group. "The solar collectors are the only added element."

All this is giving hope to Moag, whose company is still moving into its new Malta home.

"I think solar-thermal, finally, is going to have its day," he said. "The need may not seem apparent or imminent, but I think it will become more so, and that forward-thinking people will realize that."

From the The Business Review:

[http://www.bizjournals.com/albany/morning\\_call/2011/02/revenue-doubles-for-the-radiant-store.html](http://www.bizjournals.com/albany/morning_call/2011/02/revenue-doubles-for-the-radiant-store.html)

# Revenue doubles for The Radiant Store

**The Business Review - by Robin K. Cooper**

Date: Thursday, February 10, 2011, 6:25am EST



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- Reporter
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The Radiant Store, an early-stage solar-thermal panel installer, saw revenue double to \$1.3 million last year.

The number of employees also grew from a half dozen to 12 after President **Terry Moag** spent several months organizing the company into divisions—solar, building efficiency and heating and air conditioning.

Moag said he expects revenue will grow to \$5 million in the next two years.

This week, The Radiant Store was awarded a \$180,000 grant from the New York State Energy Research and Development Authority to train solar-thermal installers and monitor the performance of the technology and help develop a market for it.

The company, which started in 2005, moved its operations last year from Kinderhook in Columbia County into the state-owned Saratoga Technology + Energy Park in Malta in Saratoga County.

"I've been able to take advantage of a lot of opportunities that are available to anybody in this market," Moag said.

A separate NYSERDA grant helped him reorganize and focus his company last year.

Moag said that grant gave him access to NYSERDA entrepreneur-in-residence, **Paul Burton**, former vice president of operations at Ducommun AeroStructures New York Inc. (formerly DynaBil Industries Inc.), in Coxsackie.

Burton was instrumental in preparing The Radiant Store to compete in the solar-thermal industry that has not developed as fast in the United States as it has in Europe, Moag said.

The \$180,000 NYSERDA grant will help Moag train staff and spend more time trying to create a market for solar-thermal combination heating systems throughout the northeast.

The company also has seen an uptick in business this year due to a new \$25 million state program that provides grants to homeowners who replace electric water heaters with solar systems.

Moag said that program took effect in January and he already has seven applications. For jobs that cost \$10,000, Moag said, the grant program, plus state and federal tax credits can reduce the total price to about \$1,500.

## **Saratoga Technology + Energy Park® Adds The Radiant Store, Inc. to Its Growing Tenant List**

The Radiant Store Inc., an installer of solar thermal hot water systems that provide energy efficient, carbon-neutral solutions to home owners and businesses seeking to reduce fossil fuel consumption, has located at the New York State Energy Research and Development Authority's (NYSERDA) Saratoga Technology + Energy Park® (STEP®) in Malta, NYSEDA today announced.

"The Radiant Store is a perfect fit for STEP, which provides an environment to help clean energy and environmental technology companies to build and grow," said Francis J. Murray, Jr., President and CEO of NYSEDA. "NYSEDA welcomes The Radiant Store to STEP and looks to its continued success. Its work to deploy more environmentally sustainable technologies will help New York meet the ambitious energy reduction goals set by Governor David Paterson."

"STEP is fertile ground for renewable technology companies like The Radiant Store to grow," said Terry Moag, President of The Radiant Store, Inc. "Between the TEC-SMART facility and the resources NYSEDA brings to the table, STEP is uniquely qualified to meet the needs of clean tech companies."

Solar thermal heating systems can significantly reduce the energy costs and environmental impact of hot water heating for residences and businesses. A solar hot water system consists of a series of solar panel-like collectors installed on a roof that utilize the sun's energy to heat a liquid that is pumped into an insulated hot water tank to heat up hot water. The heated water is immediately available for use or stored until hot water is needed. Federal and state tax incentives are available to help offset the purchase and installation costs for these systems.

The Radiant Store, Inc. is located at STEP's 10 Hermes Road building, which also is home to Auterra, Inc., an advanced materials manufacturing and development company. Other companies located at STEP include GLOBALFOUNDRIES, Lockheed Martin, and the Building Performance Institute, among others.

STEP is also home to TEC-SMART, the Training and Education Center for Semiconductor Manufacturing and Alternative and Renewable Technologies, which opened its doors this past January. A \$13.5 million partnership between NYSEDA and Hudson Valley Community College, TEC-SMART features more than a dozen smart classrooms and advanced laboratories that will be used to train the workforce in green technologies, including semiconductor manufacturing, photovoltaics, home energy efficiency, geothermal, alternative fuels, and wind energy.

For more information, visit [www.nyserda.org](http://www.nyserda.org)



# The Radiant Store, Inc

Terry Moag - President

well to solar electric systems and offer a return on investment that is superior to any other solar technology.

**SM: What separates your company from other retail solar stores?**

TM: For one thing, we are not a retail store. The name "The Radiant Store" really is a play on words as we are storing radiant energy with our products. We are a full-service supplier and installer of solar thermal systems. Because every solar system design is different depending on the site, the mechanical systems and other important considerations, our approach has been consultative and comprehensive when it comes to recommending a solar solution that is right for a customer. Tailored solutions are the norm in this business. I think our value proposition to a customer is that we have the knowledge and the experience to design, install, and service the optimum solar system for each person's situation.

**SM: When starting your company you had to overcome many obstacles. What was your greatest obstacle and what inspired you to carry forward your mission statement?**

TM: There were several. For one, we did not have a market back in 2005 for integrated solar thermal systems. It was just not something the United States was doing to any meaningful degree. So bootstrapping in an underdeveloped market was not easy. Aside from that there are the challenges of being a start up: capital, eighty-hour work weeks ... the usual stuff.

**SM: How did you wind up at the Saratoga Technology + Energy Park®(STEP®) in Malta?**

TM: I was looking to grow the business. STEP offered an opportunity to join a diversified group of clean-technology businesses, and I thought my presence here would help. And it did—in the past year since I arrived at STEP, business has doubled from \$600,000 to \$1.3 million.

**SM: What energy efficiency return on investment can your company provide for your customers?**

TM: We typically find that investment in a solar thermal system will pay for itself in three to five years and produce positive cash flow for up to thirty years. Contrasted with solar electric, which has paybacks in the ten to twelve-year range, it is really favorable. Systems generally price in after incentives between three and five thousand dollars, which makes them affordable for the average homeowner.

**SM: With oil and gas prices rising, what is the best recommendation you can make for your customers?**

TM: We are a company that approaches energy efficiency in a comprehensive way. Normally we recommend conducting an energy audit to get a baseline on how you can improve your home's energy efficiency. The New York State Energy Research and Development Authority (NYSERDA) offers a variety of incentives to homeowners looking to go green as well as reduce their carbon footprint overall. Sometimes insulating is all that is required, sometimes renewable energy makes sense, or maybe a high efficiency boiler or furnace is the right choice. The main thing is to get a professional to evaluate the situation and give you the facts so you can make an informed decision.

**Success Magazine: When did you open The Radiant Store, Inc? What inspired you to open your own solar energy company?**

Terry Moag: In 2005 I felt like the market was ready for an applied technology solar thermal company. I was in a unique position because I had the knowledge and an opportunity to partner with a European company looking to expand in the US. What really inspired me was being on the cutting edge of a new technology. I was at a point where I needed to feel challenged and had become disillusioned with the lack of leadership in the states when it comes to an energy policy. I felt like I could make a positive difference on a local level.

**SM: Terry, what is the focus of the products and services of The Radiant Store, Inc?**

TM: The Radiant Store is a solar thermal installer. Photovoltaic solar, which creates electricity, collects a fraction of the electromagnetic light spectrum and converts that energy to electricity. But our solar-thermal systems collect solar energy in a broader light spectrum, and the panels produce heat that is used for everyday things like hot water preparation, radiant heating, or pool heating. It is roughly seven times more efficient than making electricity with solar. On a global level, solar thermal has been far more widely embraced.

Our products compare favorably in price as

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[www.TheRadiantStoreInc.com](http://www.TheRadiantStoreInc.com)

# Green Living

## Local woman harnesses the sun, says most homeowners can, too

Thursday, July 16, 2009

By Siobhan Connally  
The Record

TROY — Sandra Vardine is a passionate woman, and she is especially passionate about property.

Four years ago Vardine bought three dilapidated brownstones in the city's Washington Park neighborhood and lovingly restored them. Back then the buildings called to her.

"It had to be done," said Vardine of the downtown restoration project that included the 3, 4 and 5 Washington Place houses. "The beauty of the buildings and the historic value had to be preserved. When they were built Troy was the fourth richest city in the country. I couldn't let those buildings go."

And though she's been happy living in one of the restored historic homes, more current events have aroused her passions once again and she's ready to move on. This time, however, her interest was peaked when she bought a contemporary 1960s dwelling in Brunswick that had been in foreclosure.

"I always new I wanted to explore the world of renewable energy. I've been really interested in wind and hydro turbines. This home just gave me the best opportunity."

"People really have to start looking at the world differently," says Vardine, who recently purchased the home and renovating it keeping the environment in mind. "I know the recent spike in oil prices woke people up but they really have to stay awake."

"You can spend \$50,000 on a car and in three years that car won't be worth anywhere near what you paid. But you take that same \$50,000 and put it into solar thermal amenities for your house and it will pay for itself."

The 8,000 square-foot, multi-level home has been retrofitted with a Viessmann solar thermal system that will keep the home toasty in winter using radiant floor heat. The solar panels, which are located in the back yard, will also heat an in-ground pool in the summer.

**Terry Moag**, owner of *The Radiant Store Inc.*, an RIT graduate who has been ahead of the curve in offering alternate and sustainable heating resources to area customers, says most people think of photovoltaic or PV when they think of solar energy.

"The difference between PV and solar thermal is that the PV contains silica which collects and stores energy and then converts it to power; the thermal uses glycol, which is essentially antifreeze, to heat and store hot water. In terms of physics the energy stored in BTUs is the same if it is electric or hot water."

But in terms of actual usage and upfront costs, solar thermal is the most cost effective and easily accessible to most if not all northeast homeowners.

"Everyone pretty much has a hot water heater, and this would eliminate that heating bill immediately. After that you can do other things with the stored energy ... in essence, energy stored can be put to use elsewhere. The computer tells the BTUs where to go."

For example, excess BTUs in Vardine's system may heat her floors in winter as well as heat her pool in the summer.

"It's really a great way to heat a pool, especially considering the cost to do that with fossil fuel is just out of sight."

In addition to the solar thermal heating, Vardine is also installing cedar siding, using sustainable flooring materials, bulking up on insulation, installing high-efficiency appliances and composting everything she can.

While the home is still "on the grid" because the Northeast has so many cloudy days, Vardine is confident the sun will do the lion's share of the heating.

"The sun is free. And even in cloudy days like we've been having since we installed the system the water is still heating between 120 and 140 degrees."

Moag says that while it's important not to overstate the capabilities of harnessing the sun to produce home energy savings, the fact remains that domestic sales will be on the rise.

Spain and Germany already have laws mandating the use of these systems, says Moag, and as many as 85 percent of households in Spain and 95 percent in Germany already use thermal solar technology.

"The percentage who use this technology in the U.S. is small, but we are positioned to be the largest growth area in the market, especially now that the government is giving people incentives to use sustainable alternatives."

According to Moag, the average solar thermal system costs about \$7,000 to \$9,000, however, federal and state tax credits reduces the number to about \$3,000 to \$5,000 for the average homeowner.

Vardine's system, which is more involved than average, cost about \$16,000 but will likely pay for itself in as little as three to seven years, he said.

Vardine also urges people to join her in making such changes when they embark on renovation projects of their own.

"Any house that uses baseboard heat can harness the power of the sun. And now is the perfect time to do it since NYSERDA and the federal government are offering 50 percent rebates to go green. ... You can reduce your energy consumption by half and maybe more."

Vardine expects her home to ultimately save her as much as 80 percent on her utilities costs.

"It's time to look at reality. Cheap oil is a thing of the past and utilities never go down. We've really got no choice but to change."

URL: <http://www.troyrecord.com/articles/2009/07/16/entertainment/doc4a5e1cbb6a141826890995.prt>

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## SPACES

Published 12:00 a.m., Sunday, March 27, 2011

Terry Moag

Title: Owner, The Radiant Store, in Malta

Age: 47

What makes his work space special: Working on roofs. Terry Moag feels lucky because he gets to spend a lot of his days working outside, installing solar thermal hot water systems.

Moag started his company, The Radiant Store, in 2005. The Radiant Store isn't a store in the conventional sense; Moag is actually an installer of solar thermal hot water and radiant heating systems, but he liked the name because it was a word play on energy storage.

Solar thermal systems are different than solar electric, or photovoltaic systems, that generate electricity. Instead, solar thermal systems are used to heat homes and hot water, as well as to provide heat for flooring and swimming pools.

"I spend half of my time at the job site, and half of my time meeting with customers," Moag said.

Moag grew up in Wyoming County, a highly agriculture area of western New York, and he spent much of his youth milking cows. He is licensed as a fly-fishing guide, and he now lives in Kinderhook in Columbia County.

"I like being outdoors," Moag said. "Being fenced in is not my cup of tea."

After running the business mostly from his home in Kinderhook, Moag took space at Saratoga Technology + Energy Park in Malta. STEP, as it's known, is owned by the New York State Energy Research and Development Authority, and Moag says he loves the atmosphere. STEP, which was designed to help grow companies focused on the renewable energy and technology sectors, is next to Hudson Valley Community College's TEC-SMART campus, which provides training in several renewable energy fields, including wind and solar.

"It's a knowledge community," Moag said. "It helps focus our organization."

But even though Moag loves the outdoors, including fly-fishing, he rarely has time to spend on hobbies as his business has grown. He does, however, set aside time to work out at the YMCA.

"I literally have been consumed by the development of the company," Moag said. "I've hung up my fly-fishing spikes, if you will. I've been doing this for two years solid. I live a pretty Spartan life."

Quote: "It's not an easy business to succeed in."

-- Larry Rulison

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## STEP steps up

Alyssa Jung 03/15/11 

Saratoga Technology and Energy Park (STEP) in Malta boasts 300 workers, 12 tenant businesses and a new eatery, an accomplishment it's been climbing toward for the 10 years it's been in existence.

But the NYSERDA-owned campus that attracts clean-tech and environmental-based businesses is only using about a quarter of the 1.25 million-square feet of space it has available.

"We have all this space and are looking to attract more businesses that are related to clean energy, clean energy technology and clean energy manufacturing; and GlobalFoundries is next door, so anything related to that," said Alan N. Wechsler, of NYSERDA. "We're hoping that businesses that work with GlobalFoundries will come to STEP and locate here and the fact that they're next to us adds value to the property, makes it more appealing and gives it a national and international prominence."

The park's 12 current businesses may only fill a fraction of the STEP landscape, but they hail from around the country. There is at least one, though, that got a humble beginning not too far away, in Kinderhook.

"The amount of capital and time that I had to spend to get the company viable, it was proverbial and still is; no weekends off and lots of savings of my own have gone into my enterprise," said Terry Moag, president of The Radiant Store. "I underestimated the amount of effort it required."

It took six years for the renewable power company to get where it is today. Since relocating to STEP one year ago, Moag said the company grew its sales from \$600,000 to \$1.3 million. That leap of nearly doubling the yearly revenue is a true testament to STEP's value, said Moag.

"I'm one of the few local start-ups and it's great there's a diversified mix of people up there [at STEP], not just GlobalFoundries; and there's still an opportunity within STEP for a guy with a good idea to make some progress," said Moag.

The Radiant Store specializes in thermal solar hot water systems, integrated solar hydronic and radiant heating systems, meaning it abides by sustainable building practices and uses alternative energy to preserve natural resources. Moag partnered with two European manufacturers to install thermal solar systems. They can be used to heat anything from a swimming pool to making hot water and heating entire houses. While he mostly serves residential clients, he said he does have the capacity to service the commercial or industrial business market.

Part of the reason for Moag's rapid success since making STEP The Radiant Store's

home has been his conscious effort to take advantage of all the options and opportunities the clean tech community offers.

“It’s a great place to tap into a knowledge community that exists there and is geared toward clean technology and the cultures. They have infrastructure and speakers come in that help develop our knowledge,” said Moag. “If you’re resourceful and take advantage of the of amenities and resources there, it’ll benefit you.”

Moag is proud of his company’s growth, but he’s also happy to have helped local families in the process.

“I created seven new jobs since moving to STEP, so there are seven families I support and it’s all high wage skilled labor,” said Moag. “\$70,000 is the average wage a year so seven families have been able to benefit from what we’ve done here and in large part, I have STEP to thank for that because they really do get behind their companies.”

The Radiant Store recently applied for and received R&D funding. He said he believes the service his company provides is so valuable and forward-thinking that it will continue to grow as alternative energy practices gain momentum.

“This market has a lot of opportunities to create employment and jobs and bodes well for the skilled trade sector and definitely green technology type job,” said Moag. “It’s been slow adopting this technology in the U.S. but incentives right now through NYSERDA have never been better. With state, federal and NYSERDA incentives, the demand for the type of technology we’re installing is increasing.”

Besides housing international and local businesses, STEP also has acquired its first permanent food service option on site. A food kiosk opened at 107 Hermes Rd. for breakfast and lunch. It’s operated by PRIME Business Dining, a division of Mazzone Management Group which also operates The Foundry, a dining location exclusively for construction workers at GlobalFoundries.

“The exciting work taking place at STEP presented an opportunity I couldn’t say ‘no’ to,” said Angelo Mazzone, president of Mazzone Management Group. “We’re glad to be able to bring our high-quality food to this high-tech campus.”

A little known fact about STEP: before it was acquired by NYSERDA, it served as a rocket engine testing facility for NASA in the ‘40s. Wechsler said it was fallow for decades until STEP stepped in. For more information about STEP, visit [www.step.nyserda.org](http://www.step.nyserda.org).