

Discovering Downtowns: The 2011 Heart And Soul of Georgia Tour

July 2011 GeorgiaTrend

The Magazine Of Georgia Business, Politics
& Economic Development Since 1985

Partly Sunny

Georgia's
solar industry
is growing
steadily,
but slowly

Joe Thomas
President and CEO »
MAGE SOLAR USA



PLUS

Surviving A Stroke
Stories From The Comeback Trail
page 26

Georgia Southern
From Modest College
To Thriving University
page 70

\$2.95
www.georgiatrend.com

1.7676
0 132126 5 07

subscription: 800.428.7363



Economics, Environment:
MAGE SOLAR USA's Sylvia
Minton, public affairs chair
for the Georgia Solar Energy
Association

Partly Sunny In Georgia

The state's solar industry is increasing steadily, but slowly, as the national industry explodes

By Jerry Grillo

The sun preceded humans by four billion years, give or take an eon, and in another billion years it will consume us, if we don't kill ourselves first or we somehow avoid being dispatched by plague, meteors, aliens or some other misfortune.

Another billion years. By then, if not a little sooner, Georgia surely will have figured out how to better leverage the golden opportunity that rises in the East every day. Or so it is hoped by this state's growing legion of solar energy advocates.

"It could take many, many years, but we will get there," says Lee Peterson, senior manager for Reznick Group's national tax practice in its Atlanta office, where he has served as an advisor in renewable energy projects across the U.S. valued at more than \$2.4 billion – but only a tiny portion in Georgia.

"Georgia is shackled to the 20th century," Peterson says. "If all I did was look at Georgia, I'd think we were doing well. But I work all over the country, and I'm not kidding when I say we're dealing with \$500-million solar

projects that have no chance of coming here because of systemic problems that keep Georgia from participating in the 21st-century economy, which has renewable energy as a major component.

"It's disgusting, considering our potential, how much opportunity is lost, how much capital investment is passed up."

According to the Georgia Solar Energy Association (GSEA), more than \$5 billion in the U.S. has been invested in solar manufacturing since 2008, but Georgia received less than one percent of that action. Industry revenue in the U.S. was \$6 billion last year, up from \$3.7 billion in 2009, says the Solar Energy Industries Association (SEIA); the industry attracted more venture capital than any other industry in the U.S.



Bright Future: MAGE SOLAR USA President and COO Joe Thomas says Georgia is still an immature solar market, but has taken some steps in the right direction.

"It's the fastest-growing industry in the U.S. I take that as a positive sign for Georgia, going forward," says William Silva, president and CEO of Alpharetta-based United Renewable Energy. "We currently have 25 employees, and we're looking at doubling our staff by the end of the year. The industry is booming."

Mostly in other places. It's making some noise in Georgia, like the soft scratching on a door, but the boom is largely happening elsewhere, in places that are making a serious commitment to renewable energy for economic and environmental reasons.

It might be time for Georgia to take note. A recent study by Arizona State University's business school ranked us No. 3 in the country for solar development potential. It's because we have plenty of sunshine and a growing stable of solar manufacturers (though there isn't yet a significant amount of solar energy actually being deployed here).

North Carolina is pacing the Southeast, but there has been an upward trend in solar manufacturing, services and projects in Georgia, and for some solar players it's a sign that we may be closer to seeing the light.

"Georgia is still an immature market," says Joe Thomas, president and chief operating officer of MAGE SOLAR USA, a German firm that opened its North American headquarters last summer in Dublin, where it is investing \$30 million and creating 350 jobs at its 200,000-square-foot facility that will become a manufacturing plant for photovoltaic modules (PV, or solar, panels).

"Germany is the solar energy capital of the world. But we think the future looks really bright in the U.S.," he says. "A number of states are recognizing the potential of solar and investing in their energy future. And Georgia has made some good steps in the right direction."

For example, during the last session of the legislature extended the Georgia Renewable Energy Tax Credit program through 2014 and doubled the total statewide credit amount from \$2.5 million a year to \$5 million a year. But this is paltry when compared to neighboring North Carolina, which offers up to \$2.5 million in renewable energy tax credits per project.

Sun Spots

The National Renewable Energy Laboratory (NREL) ranks Georgia 10th in the nation for states with the greatest energy potential from solar power, but 38th in the actual number of solar systems connected to the utility grid. In other words, we get enough sunlight to generate more than 3,000 megawatts (MW) of electricity from PV rooftop systems alone, enough juice for about 400,000 homes.

On a brilliant, bright day in April, Paul Diaz is manning the soundboard near the "solar stage" at the annual SweetWater 420 Fest at Candler Park in Atlanta. The stage is entirely powered by the sunlight bathing the trailer-mounted PV array that sits a few yards from the stage.

"We're putting out between 1,000 and 2,500 [kilowatts] when we're really thumping the stage," says Diaz, owner and president of Tree Sound Studios in Norcross. "We stayed on batter-

ies all day, with the sun supplementing the batteries, keeping them full.”

Diaz and his mobile Tree Sound solar plant are familiar sights at music festivals across the Southeast (the massive Bonnaroo Music and Arts Festival, for example). He also works the popular Jam Cruise series, employing wind energy and solar for that.

Diaz is working diligently to erase his environmental footprint, at work and at home, having installed more than 3 kilowatts of solar capacity at his farm in Forsyth County and about 5.5 kilowatts at the recording studio, where his eclectic client list includes artists such as the Beastie Boys, Death Cab for Cutie, the Indigo Girls and Ludacris.

Then there are the mobile units. Diaz stores the energy he extracts from the sun in batteries. At his recently installed home system, he’s tied into the grid, and he sells that juice to local power provider Sawnee EMC through a net metering agreement.

“On a sunny day like today,” he says, “by noon I’ll be spinning the meter backwards.” Which means he’s sending more power to the grid than he’s using. He’s saving money and preventing greenhouse emissions.

So is Piet Dossche, president of USFloors in Dalton, where the company is reducing costs to manufacture sustainable wood flooring with the largest rooftop array in Georgia. Installed by United Renewable Energy, the 365-kilowatt system consists of 1,701 PV panels, which cover a large portion of the 100,000-square-foot rooftop. Including the panels at its other facilities in Dalton, USFloors is generating about 500 kilowatts of clean energy.

“Our focus is on environmentally friendly products,” says Dossche. “When the opportunity presented itself, we decided to invest in solar energy. It takes our commitment to sustainability another step further, so now we are seen in the industry as a company that walks the talk.”

USFloors is capturing enough solar energy to power 54 homes, and its solar arrays will offset more than 11,000 tons of CO₂ over the 25-year lifespan of those panels.

Northwest Georgia has been fertile ground for United Renewable Energy, which installed a 100-kW PV system on the roof of the new headquarters of IVC US, part of a Belgian company that makes vinyl floor covering at its plant in Dalton. In Rome, United installed a unique 95-kW cylindrical thin-film solar energy system on the rooftop of Marglen Industries’ plastic bottle recycling plant.

United also installed one of the state’s more ambitious utility solar projects in Murray County, where Georgia Power has ownership of its first solar energy production facility and is selling the output to Dalton Utilities. The first phase of about 350 kilowatts went online in the spring, and Georgia Power has the option to construct two additional 350-kW phases by January 2014.



HARVEST THE SUN TO POWER THE PLANET!

MAGE SOLAR® is a global company with more than 35 years in German design and engineering, and close to two decades in the renewable energy business. Now, with our state of the art solar photovoltaic production facility in Dublin, Georgia, we also count America



as our home. Combine German engineered products with a Georgia based manufacturing facility and what you get is a match made in solar photovoltaic heaven. You too can harvest the sun with MAGE SOLAR®’s high efficiency, optimally coordinated system solutions. Our mission, as your solar energy partner, is to provide you with sustainable energy solutions for homes, businesses, agriculture and utilities.

Visit www.magesolar.com or call **1-877-311-6243** for more information, or to speak with a MAGE SOLAR® representative.

MAGE – NEW ENERGY FOR A NEW WORLD®

MAGE GROUP



Solar Stage: Paul Diaz, owner of Tree Sound Studios in Norcross, uses the sun to power music festivals and outdoor concerts.

“We feel like the future of solar is promising, and we want to add more capacity as it becomes more cost effective,” says Wilson Mallard, manager of Georgia Power’s Green Energy Program, which charges customers a higher rate for using clean energy (without putting rate pressure on other customers).

“As it stands now, solar is still more expensive, but the cost of PV panels is coming down, so we see it becoming more cost competitive,” Mallard says.

The cost has dropped dramatically as solar approaches grid parity, the break-even point, or the point at which solar power basically costs the same as traditional grid power (coal, nuclear, etc.).

Grid parity means different things in different places – the cost of a kilowatt varies from place to place, so if the cost already is high, or if the state offers strong incentives or has great solar resources, the cost of solar power will be at or near grid parity. Some places are already there – California, for example, with its high prices, and great sunshine (and a

mature solar industry) and generally strong, apolitical attitude toward renewables.

“There is a tremendous drive to make the cost of PV more competitive with fossil fuels,” says Dr. Ajeet Rohatgi, founder and CTO of Suniva, the Norcross-based developer of low-cost, high-efficiency solar cells, which end up in PV panels.

“In 1975 the cost was something like \$40 to \$50 dollars a watt, and it has come down to as low as \$1.60 a watt. By 2015, PV could be competitive with the average grid price in the U.S.”

PV panels are generally sold on a per-watt basis. Rohatgi says in order for PV to compete with fossil fuels, the cost needs to be around \$1 to \$1.25 per watt, and efficiency should be, ideally, near 20 percent (meaning that 20 percent of the captured sunlight is converted to electricity).

Suniva’s technology has achieved 19 percent with a long-term goal of 22 percent. The technology exists to achieve much higher efficiency, “as much as 60, 70 percent in theory,” Rohatgi says, “but then the cost becomes very high.”

Solar Flair

Connie Krisak used to work for Dallas Area Rapid Transit, where dormant buses would sit in the parking lot under the gleaming Texas sun.

“The buses would get so hot, and when the drivers got in to start the day, they had to let them run for 30 minutes just to cool them off before operations,” says Krisak, now the director of architecture and design for MARTA in Atlanta and the transit organization’s sustainability director. “We wasted a lot of fuel and time.”

So they built canopies to shield the buses, and that did the trick. In Atlanta, where the same sun gets just about as hot as it does in Texas, Krisak saw a similar challenge at MARTA’s Laredo bus maintenance facility in Decatur. So the transit authority is building a huge canopy, but it’s topped with 4,888 PV panels. They’re shading the buses while generating about 1.2 megawatts a year that will provide energy for the facility. Scheduled for completion by September, it is the second largest solar transit project of its kind in the country (after Los Angeles).

The \$10.8-million solar canopies, funded entirely by federal stimulus dollars (in the form of a clean-transport grant), will cut the facility’s energy costs in half, saving about \$159,000 a year.

“We’ve been working on this for a while, trying to think outside of the box before the stimulus money was available,” Krisak says. “This was a rare opportunity.”

In another corner of DeKalb County, a stimulus-aided solar project of a different kind is taking shape at the state’s first landfill solar farm. Republic Services is transforming the 48-acre Hickory Ridge landfill into an energy generator by covering 10 acres of the landfill’s closed portions with a solar

cover – flexible solar panels that come in rolls, like gigantic carpet.

The \$10-million project, supported by \$2 million in stimulus funds, will generate about a megawatt of electricity that Republic will sell to Georgia Power.

“We have to maintain that site in a state of post-closure for 30 years,” explains David Stuart, area environmental manager for Republic, which developed a similar project in Texas. “Generally, you generate nothing from a landfill in post-closure. Now what would have been a dormant piece of property for decades becomes useful.”

They’re testing the sunlight all over the state in a variety of ways with stimulus money. ECG (formerly Electric Cities of Georgia) received \$460,000 (federal money administered by the Georgia Environmental Finance Authority) and spread it among 13 different cities where PV panels are being used for small projects at city halls, water treatment plants and fire stations.

“I’ve made the transition from pecan farmer to solar developer,” says Trey Pippin, president of Renewable Properties. “And like most solar developers in the Southeast, I’ve gone to North Carolina.”

Pippin built a solar farm in 2010 to help lower the cost of irrigating his pecan orchard in Arlington. His development partner in Arlington and for a



GEORGIA POWER

More Capacity: Wilson Mallard, manager of Georgia Power’s Green Energy Program

five-acre location in Blairsville is ESA Renewables, a Spanish solar development company that opened its U.S. headquarters in Lake Mary, Fla., last year. Owned by a Spanish bank, the company has plenty of financing and expects significant growth in the Southeast and the U.S.

“We’ve seen some positive movement in Georgia, and we’re carefully watching the state to see if they keep

moving in that direction,” says Lindsay Herold, contract administrator for ESA. “Unfortunately, Georgia is not as proactive as other places.

“The difference is in the legislation and the utilities. I don’t think Georgia Power is totally on board just yet with solar, and until that happens, I don’t expect to see a lot of significant movement there.”

On the other hand, there has been



Coles College of Business

DBA
EMBA
MBA
WebMBA
MAcc
MSIS
BBA

**T
A
K
E

C
H
A
R
G
E**

Earn your degree at the most relevant business school in the South. The internationally ranked and accredited Coles College of Business offers undergraduate, graduate and doctorate programs taught by world-class faculty.

Named as a “Go-To Business School” by CEO Magazine, Coles is the leader in cutting-edge programs, innovative curriculum and global business engagement. There’s never been a better time to take charge of your future. Visit us online to apply, or RSVP for our next info session.



770.423.6472 | ColesCollege.com/GATrend



Crop Rotation: Trey Pippin has made the transition from pecan grower to solar developer at his farm in Arlington in Southwest Georgia.

interest in Georgia from manufacturers, most notably MAGE (pronounced “Ma-Gah”).

But solar advocates in Georgia remain unconvinced, even as they try to get a handle on how big or small Georgia’s solar industry actually is. GSEA’s conservative workforce estimate is about 450 (based on a survey that received very little feedback, according to GSEA). The Solar Foundation, a national nonprofit whose annual job census estimates 93,000 solar jobs in the U.S., says there could be closer to 4,500 solar jobs (direct and indirect) in Georgia.

“Georgia is so far behind other states that we don’t have robust data collection in place,” says Reznick Group’s Peterson, who argues (like many solar advocates) that caps on the size of solar projects in Georgia are sending large-scale commercial investments to other states, and that outdated Georgia laws severely limit both the ability of private business to sell renewable electricity and customers’ ability to choose affordable, renewable energy while protecting large utility interests.

“What I don’t understand is why the dividends of a limited group of company shareholders should be preserved at the expense of the long-term energy future of the entire state of Georgia,” Peterson says.

At least 29 states have renewable portfolio standards (RPS) – regulations requiring increased production of renewable energy, like solar. For example, North Carolina is seeking to provide 12.5 percent of its total electricity from renewables by 2021; California, 33 percent by 2030; Pennsylvania – a coal state – wants 18 percent by 2020.

Georgia Power plans to increase the amount of solar it buys from qualified private providers to about 5.4 megawatts, a fraction of what utilities in other states are taking on and fairly negligible for a utility with generation

capacity of almost 16,000 MW. Last year, 16 states installed more than 10 MW; California had 258 MW.

So, with no statewide mandatory RPS in place and regulatory barriers that significantly limit the size of commercial solar energy systems, Peterson and his fellow solar advocates say Georgia is missing out on a tremendous economic opportunity in a solar industry that is expected to grow another 26 percent this year, adding 25,000 jobs across the country, mostly in small businesses.

Meanwhile, Georgia’s solar energy output slowly creeps upward while ratepayers support the ongoing nuclear expansion at Plant Vogtle and Georgia Power stays consistently on message.

“Anytime you legislate or regulate additional renewable capacity, it’s gonna be more expensive for the rate payer,” Georgia Power’s Mallard says. “Renewable energy will possibly play a growing role going forwards, but we remain fully committed to nuclear power and the other traditional generating sources, like coal and natural gas.”

Basically, it’s the same message the rest of the U.S. used to adhere to (and some of it, not just Georgia, still does). Nonetheless, at the current rate of expansion, the U.S. is expected to become the largest solar market in the world in a few years, surpassing Germany, Sylvia Minton’s native ground.

A MAGE executive and GSEA public affairs chair, Minton says her home country and her adopted country arrived at its solar awakening through different routes.

“In Germany, the environmental reason came first, then economics,” she says. “In the U.S., it is reversed. Economics comes first and then, if you can get the environmental benefit, all the better.

“Both ways are fine, as long as you get there eventually.” 