SOLAR

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in the news.

But suddenly that may be about to change.

In the case of solar energy, in particular, a constellation of factors have aligned like stars (the ultimate solar powers) to make it the darling of alternative energy, and to bring Southwest Florida, and the entire state, to a lifestyle crossroads.

Among those are hugely escalating oil costs, tax credits and significant savings for solar-heated water or solar-powered electricity, and the awareness of well-placed officials such as the governor, the president of Florida Gulf Coast University, a state senator with aspirations to reach the U.S. Congress, and the mayor of Fort Myers.

You can probably mark Thursday, June 26, 2008 (with the solar-powered moon in its last quarter), as the moment radical change begins in Florida — a sunshine state which, as luck and foresight would have it, will begin leading the nation in a far-seeing approach to energy.

"Gov. Crist has scheduled a bill-signing for that day – it's a 200-page energy bill that encourages companies and individuals to be more energy efficient, and Florida will be the model for the nation," says State Sen. Burt Saunders, R-Naples, the primary author of the Senate version of the bill, and chair of the Environmental Preservation and Conservation Committee.

"A model for the nation" is not hyperbole, say many experts.

"I have to hand it to Gov. Crist. For one thing, he pushed back against the electric lobby," to create the new bill after vetoing a too-weak version last year, says Rob Andrys, a green-certified architect in Lee County. The bill will breathe life into policies that offer more than polite words about reducing dependence on oil and coal, the fossil fuels from which we now get electricity, he adds.

Suddenly, the Florida sun is about to become more than a tourist attraction.

The new deal

In general terms, the new bill will regulate and reward utility companies for developing alternative energy (solar power is likely to be number one on that list); it will make strict new demands of builders and developers to reduce traditional energy dependence in buildings by as much as 50 percent over the next few years; and perhaps most strikingly, it will require the Florida Department of Environmental Protection to create something already common in Europe, for the first time in the US, according to Saunders: a "cap and trade."

Here's what that means, says Andrys. "It's 'carbon cap and trade' — you cap the carbon at a certain benchmark in a certain year. And you say, 'From this point on, we won't allow anyone to produce more carbon than that, and we might require them to reduce their carbon emissions.' And you can reduce it either by cleaning your own manufacturing process, or trading carbon credits, which means you invest money in companies or governments that will not use dirty power, but instead create clean power, which counts as reducing the carbon footprint.

"So what's the stick to enforce this?" he asks. "They're going to start imposing a tax on the amount of carbon you put out."

Both Andrys and Saunders, who is bidding to win the U.S. Congressional seat for Florida's 14th district now held by Rep. Connie Mack, point out that Europeans already use cap and trade,

PHOTO COURTESY ADVANCED SOLAR AND SPA

Solar panels on a Fort Myers home provide hot water at a considerable savings.

and before long, so will we. (Cyprus, Israel and Austria now rank as the top three nations in effective use of solar power, rather than fossil-fuel power.)

"The federal government is likely to require some kind of cap and trade in the not-too-distant future, and we wanted to see what it would look like in Florida," Saunders says. "We wanted to be in a leadership role."

Mack recently voted against the "Energy Independence and Security Act of 2007," a bill designed to eliminate special tax breaks for big oil and expand tax credits for Americans who buy hybrid cars or make energy efficient improvements to their homes. Two months after his vote against the bill, Exxon announced they have a $40-some billion profit for 2007.

Sun money

Among the many other consequences of Florida's new energy bill, is that suddenly FGCU will become $8.5 million richer.

Florida's newest university is the recipient of a state grant to put 16 acres of solar panels on campus that will make electricity from the sun and save the university almost $1 million a year, officials say. (They brought the plan to Saunders, and he sold it to the governor and the senate president, he says.)

The FGCU plan, which has its critics, calls for the university to find a business partner who will contribute another $8.5 million, and who can put up and operate the solar farm.

Since the federal government provides huge tax incentives for this kind of solar power — electricity-making technology known as photovoltaic — the company will initially own the whole $17 million system, benefiting from the massive tax break and ultimately only spending about $3.5 million in real dollars of its own money, says Joe Shepard, vice president for administrative services and finance at FGCU.

Then FGCU will buy back the system over a 20-year period, ultimately owning it outright and serving as its own electric company, operating off the fossil-fuel grid for a third of the massive power needs of the university in a given year, which now amounts to about $3 million.

In 30 years, the university will save about $22 million after all costs, including maintenance and repair, he estimates.

"We win because this is state of Florida money, the company wins because its return on investment will work better, and the federal government wins because it gets the new technology," says Shepard.

"That will be used not only to reduce our pressure on the current power grid, but to educate (a generation) of students in how to do that."

And it's not only university students who will learn, but also public school students throughout the region, and from all grades.

While all of this maneuvering is taking place in a world of adults that doesn't yet concern them, the kids at Alva elementary offered several theories.

Outside, the temperature was 92 in the shade, courtesy of a hot solar cell lying 93 million miles away. Inside, the children guessed at the meaning of "solar power."

"You can help the city with it when it's in trouble," surmised Susan, a first grader.

And indeed, she had heard that Mayor Jim Humphrey and the Fort Myers city council are considering ways to offer city residents a simple solar system that can heat the water in their houses.

"I believe we should look at and even require new construction to provide solar power — or at least study that option," Humphrey says. With city-backed alternative hot water in homes, residents could take about 30 percent of their energy needs off the current grid, costing them no more than they pay now for power, and ultimately saving a family of four about $750 as year.
That would happen once the system — which might run about $4,500 per house, paid for upfront by the city — is owned by the homeowner.

Which sounded good to Manney, also a first-grader. "Solar gives you power when there's a hurricane," he theorized.

If you were your own little power company, that would be true, assuming you'd made hay — or power — while the sun shined, and stored it.

"You can use solar power to power a car," said Joshua. Yes, but that's another subject.

"Solar power is energy, solar energy, from the sun," said Christian, a 4th-grader who followed that definition with a tidy little explanation.

"You need those solar panels, and when the sun shines on those solar panels, some thang-a-ma-bobber turns it into energy."

That might serve as a sufficient description of what will happen at FGCU beginning in July, right after Gov. Crist signs the new energy bill. That's when university officials expect to seek bids from companies sophisticated enough to put in a whole bunch of thang-a-ma-bobbers and maintain them,

The way Shepard figures it, the university now pays $3.5 million per year for energy, which will increase in cost 5 percent every year for the next 20.

By building a 2 megawatt solar farm — the biggest in the Southeastern United States, and one of the 10 biggest in the nation — the university can reduce its total power dependence on fossil fuels by a third, becoming the only university in the country to create so much sun power.

So why not simply do it all?

For one thing, because there's not enough room, explains Shepard. "It's not only incredibly expensive to put this in, but if two megawatts of power would take up 16 acres, to provide for the whole would take 50 acres, and only 340 of our 786 acres here are suitable to build on, and 250 of those are already taken."

Not only that, but "there are only three, maybe five outfits in the country who can probably do this work," adds Shepard.

All of which makes Brian Goldberg, a co-owner of the family business, Advanced Solar and Spa, a bit skeptical.

"They're taking all this money, and they're doing the project more as a test to see if it can work, rather than as a way of saving money and using more efficient power," he says.

"It's like, 'Let's put $17 million over here on one little spot, and it's a great feather in the cap, and you can drive down the highway and say, 'Wow, look what they've got.' And maybe it will enhance the technology and maybe it won't, but they're trying to promote business through tax credits."

What they could do more efficiently, suggests Goldberg, is spend the money on thermal heating — using the sun to heat water. "There are a lot of guys who know how to do that, it's easy for plumbers and contractors, it saves a lot of money, and it lasts a long time without a lot of maintenance."

While others may disagree that spending $8.5 million in taxpayer money on a solar farm that makes electricity — the photovoltaic system — is merely throwing money at an unproven whim that has a ways to go technologically, nearly all conclude that cost and technology now make solar-heated water by far the most cost effective, and cleanest, way to use the sun in daily living for homeowners here.

FGCU's Shepard, architect Rob Andrys, Sen. Saunders, Mayor Humphrey, and business-owner Goldberg all insist that nearly anyone can reduce their home energy output by half or more, simply by taking a few steps: first, insulating the attic; second, installing tight windows; third, heating household water and pools with a solar thermal system; and finally, putting on a "cool" or white roof.

Of those options, insulating and heating water with solar energy are usually the simplest and least expensive options, as well as the most effective.

"The average family will use 30 to 35 percent of its electric bill heating water, and you can put in a solar hot water heater on your roof or on the ground for $4,000 to $5,000, and you get a portion of that back in tax credits," says Andrys, echoing the opinions of the others.

"You're thermally heating water, it's direct and super simple, and in the mid-tier states now people are starting to heat their floors, and therefore their houses, with hot water — all off the grid, and it's all clean power.

"If you want to produce photovoltaic power, though, it will take you about 5 panels on the roof to produce power for 30 percent of your needs — and that will cost about $15,000 or more."

In just a few short years, if you pay roughly $750 a year to heat your water, experts estimate, you will pay off any solar thermal system and begin saving money.

But if you decide to create a photovoltaic system in your business or home, the technology will get better, and the savings will ultimately be there, too, they say.

"Now, thanks to Gov. Crist, we can get net metering," says Andrys. "The power company can get power for 3 to 3.5 cents per kilowatt, and they sell it to us for about 8 or 8.5 cents, maybe more. But if you have a solar installation on top of your house, you get to sell any extra power you don't use back to the power company at the same rate they sell it to you. You can turn your meter backwards, in other words."

None of which interested a 4th-grader named Carissa, at Alva elementary, as much as her own first step into the world of solar power.

"Last year? I built a solar panel and baked cookies," she reported. ■