



Florida Solar Energy Industries Association

INDUSTRY NEWS

PSC INTERCONNECTION WORKSHOP

The Florida Public Service Commission has opened a docket to establish separate requirements for interconnection of small-scale photovoltaic systems with the utility grid. This docket, No. 990538-EI, was the subject of a workshop conducted in Tallahassee recently, designed to open-up dialogue between the various stakeholders involved in the interconnection issue. Utility representatives at the workshop included Gulf Power, Florida Power and Light (FPL), Florida Power Corporation (FPC), Tampa Electric Company (TECO) and Gainesville Regional Utilities (GRU). The Florida Solar Energy Industries Association, Inc. (FlaSEIA) and the Florida Solar Energy Center (FSEC) also were represented.

PSC staffers expressed that current interconnection processes, which were designed for large projects, were cumbersome and expensive. Staffers also identified present PV interconnection and net-metering barriers as costly. It was reported that with the advent of the IEEE 929 Standard, concerns regarding system safety and reliability can be alleviated and allow for a streamlined interconnection process. IEEE 929, in essence, establishes requirements to ensure compatible operation of a photovoltaic system

with the electric utility. Factors relating to personal safety, equipment protection and power quality are addressed in the Standard. IEEE 929 is expected to be adopted in January 2000.

**INSURANCE REQUIREMENTS**

FPL representatives said that a \$1,000,000 insurance requirement for any electrical contact injury is minimal. FPL's risk management personnel have estimated that actual homeowner costs in light of this minimum would be about \$500 to \$1000 annually. However, based on FSEC's experience, the policy costs actually are in the \$5000 to \$6000 range. These costs are prohibitive for the small PV system owner whose insurance expenditures at this annual rate would be far greater than the savings provided by the solar systems. One possible reason for the large disparity in premiums is that FPL requires a separate indemnification homeowner policy, as opposed to a rider, showing them as the named insured.

**BILLING AND METERING**

PSC Staff pointed out that the interconnection rule currently provides a customer the option of choosing net-metering. While utility representatives

*(Please see Interconnection, page 4)*



**MILLION SOLAR ROOFS (MSR) NATIONAL MEETING**  
January 18-21, 2000  
Cocoa, Florida  
Contact: FSEC  
(407) 638-1000

**FLASEIA MSR RECEPTION**  
January 19, 2000; 5-7 pm  
FSEC Visitor's Center  
Cocoa, Florida  
Contact: Colleen Kettles  
(407) 774-9939

**FLORIDA SOLAR ENERGY CENTER 2000 COURSES:**  
**SOLAR THERMAL**  
Applications & Fundamentals  
March 14, 2000  
  
System Design Installation  
March 15-16, 2000

**FLORIDA SOLAR ENERGY CENTER 2000 COURSES (CONTD):**  
**PHOTOVOLTAICS**  
Installing Grid-Connected Systems  
February 7-11, 2000  
Contact: Jo Ann Sterling  
(407) 638-1014

**SOLAR 2000**  
June 17-21, 2000  
American Solar Energy Society  
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Contact: ASES  
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**SOUTHEAST BUILDING CONFERENCE**  
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# PRESIDENT'S MESSAGE:



What is your dream vacation? Fishing for Blue Marlin off the coast of Dominica? Or maybe a two week cruise to Alaska? Perhaps you dream about taking your family to Europe. Dreams are good for the soul. They give focus to our lives. So where, you might ask, will you find the money for this dream vacation?

I can think of two possible sources. Winning the Lotto jackpot (not very likely) or growing your business (a real possibility). One of the best and least expensive ways to grow your business, is to grow your industry. And, our industry has enormous potential for growth. A vibrant domestic solar water heating, pool heating or photovoltaic market increases interest and sales in each of the other solar technologies. By supporting our trade association, you not only advance your interests, but also the interests of all our membership.

Legislatively, FlaSEIA has a significant challenge ahead. One challenge is to maintain the sales tax exemption, the only incentive Florida gives homeowners to invest in solar energy. The other challenge is to create

an industry directed program that increases the awareness and markets for all solar energy applications. In order for this industry directed program to be effective, it must be funded for multiple year implementation.

If all of us work together, we can reach these goals. If we don't, you could be collecting, recording, filing and paying sales tax again. The only way anything good ever is accomplished is by people believing in something, like we do in solar energy, and then working together to make it a reality. We are all co-creators of our lives. We can make our association an effective, positive force for growing all of our businesses. All you need to do is support FlaSEIA with your dues, your time and your caring.

So maybe you're a fan or the opera and your dream vacation is springtime in Vienna for the Festival of Music. You can get there. It just takes commitment and hard work. But remember this, the song of the soloist is easily dispersed by the wind, the chorus of a multitude can carry for miles.

Sincerely,

*Griffin Carrison*

## EXECUTIVE COMMITTEE & BOARD OF DIRECTORS

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# FLORIDA MANUFACTURERS' INITIATIVE:

FlaSEIA wishes to thank the following companies for their financial commitment to FlaSEIA and the Florida Solar Energy industry as participants in the Florida Manufacturers' Initiative (FMI).

### DHW COLLECTORS

American Energy Technologies, Inc.  
SunEarth, Inc.  
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### POOL COLLECTORS

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FAFCO, Inc.  
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### PUMPS AND CONTROLS

Independent Energy, Inc.  
Ivan Labs, Inc.

You can best show your appreciation by buying products from these manufacturers and by urging unlisted manufacturers to participate in the FMI program.

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IVAN LABS  
AD

## WASHINGTON *(continued from page 5)*

by certain small electric energy generating systems. This bill, if passed, would enable small businesses, residences, schools, churches, farms with small electric generation units, and other retail electric customers who generate electric energy to return or sell surplus electric energy on the open market. And, the bill is intended to encourage private investment in renewable and alternate energy resources, to stimulate economic growth, to enhance the diversification of US energy resources, and to remove net metering barriers.

This bill was introduced in the House on September 24th and

referred on to the Subcommittee on Energy and Power on October 19th.

### HR 2569 & S 1369

These duplicate House and Senate bills would enhance the benefits of the national electric system by encouraging and supporting state programs for renewable energy, universal electric service, affordable electric service and energy conservation and efficiency. The bills were introduced on July 20th and July 14th respectively and referred on to the Subcommittee on Energy and Power in the House and to the Committee on Energy and Natural Resources in the Senate.

# EYE ON WASHINGTON:

Several solar energy bills were introduced in the House and the Senate during 1999. These bills run the gamut from net metering to increasing state funding for renewable and energy programs. The following is a recap of bills pending in Congress. For periodic updates, point your browser at <http://thomas.loc.gov>.

### HR 1465 & S 1634

These bills amend the Internal Revenue Code of 1986 to allow a residential solar energy property credit. This would allow a 15% tax credit on qualified photovoltaic property and expenditures, and a 15% tax credit on qualified solar water heating property up to a maximum of a \$2,000 for each system.

The House version of this bill (HR 1465) was referred to the Committee on Ways and Means on April 15th, while the duplicate Senate bill (S 1634) was introduced and referred on to the Committee on Finance on September 24th.

### HR 1358

HR 1358 would amend the Internal Revenue Code of 1986 by inserting a new section called the "Energy Efficient Home Credit." This credit would allow a home built after December 31, 1998 to receive a \$2000 tax credit if that home exceeded by 30% or more the applicable standards for energy efficiency. Energy efficient property in this qualifying standard includes any energy efficient building envelope component, or energy efficient heating, cooling or water heating appliance.

Similar to HR 1465, this bill was introduced and referred on to the House Committee on Ways and Means on March 25th.

### HR 2645

This House bill provides for the restructuring of the electric power industry, covering a variety of topics from distribution and supply service quality standards to net metering and retail deregulation. It was introduced on July 29th and referred to the House Subcommittee on Energy and Power on August 27th.

### HR 2944

Though providing for a number of contingencies, HR 2944 primarily is intended to promote competition in electricity markets and to provide consumers with a reliable source of power. Amending the Energy Policy Act of 1992, this bill includes a renewable energy production incentive allowing governmental payments to qualified energy facilities which generate electric energy for sale using solar energy, wind, biomass, or geothermal resources. This bill also includes a component that compels retail electric suppliers to make net metering service available to any retail electric consumer who the supplier serves or offers to serve.

Introduced and referred on September 24th to the Subcommittees on Energy and Power & Finance and Hazardous Materials, HR 2944 was marked-up October 28th and forwarded to the full committee. While amended, the bill passed the full committee with 17 yeas and 11 nays.

### HR 2947

HR 2947 would amend the Federal Power Act to promote energy independence and self-sufficiency by providing for the use of net metering

*(Please see Washington, page 10)*

# HELIOCOL

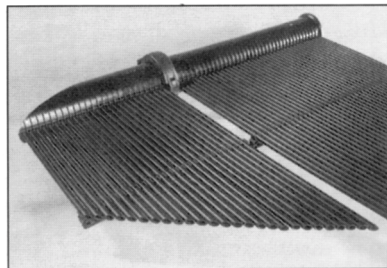
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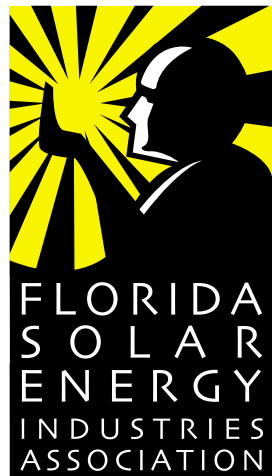
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**INDUSTRY NEWS** is the official newsletter of the Florida Solar Energy Industries Association, a nonprofit, professional association of companies involved in the solar and energy conservation industries. **INDUSTRY NEWS** is published four times per year and distributed to all member companies of FlaSEIA and a broad range of other interested parties.

## INTERCONNECTION (continued from page 1)

appeared to be unaware of this interpretation of the rule, they expressed concern that net-metering would likely shift costs to other ratepayers as a result of revenue losses. FPL suggested a demand oriented rate be instituted for PV users since they would become a partial requirement customer. FPC was not opposed to use of a single meter if it is a one-way meter that cannot run backwards. However, if there is an expectation to pay the consumer for excess power generated by the PV system, the utilities thought the customer would need two meters.

TECO suggested establishing a two to three-year PV interconnection tariff. FPC and FPL agreed with this concept.

Other issues discussed included system inspection and contractor certification. The adoption of IEEE 929 will resolve many quality control issues. However, qualified contractors and adequate system inspection are critical to assure the standard is enforced. Since solar energy systems and contractors are heavily regulated in Florida, the enforcement issue should be properly addressed, although training of contractors and inspectors on grid-connected PV systems will be necessary, and has been initiated.

Proposed interconnection language is expected from the PSC sometime after the IEEE Standard becomes final.

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SUNEARTH AD

# FIRST SOLAR UTILITY BILL

Thanks to the Florida Energy Office of the Department of Community Affairs, Lakeland Electric just mailed the first-ever residential customer bill with a solar energy charge. This grant-funded program provides homeowners with solar water heating systems free of charge. By the end of 1999, 29 homes were up and running. These solar systems replaced the homeowners' existing electric or gas water heaters. Participating customers agreed to pay the same kilowatt/hour rate for the solar output as for their regular electricity use.

So, why would customers elect to participate in the program? Because they benefit in several ways. A typical home pays for standby tank losses, or the amount of energy used just to keep water hot. Since water heating elements cycle on and off throughout the day - even when hot water isn't in

use - they consume power. In Lakeland the solar customers pay only for the hot water they use, because of a separate "solar meter" connection which allows Lakeland Electric to bill only for the hot water actually entering the house. This saves the average household about \$3 to \$8 a month. Also when converting to solar, typical 40-gallon home water heaters are replaced with 80-gallon solar tanks, doubling the storage capacity. Since the City of Lakeland owns and maintains these systems, customers save again by eliminating service costs. After a few years, the City plans on selling the solar system outright to participating homeowners at a reduced cost. Once purchased, the customers then will enjoy the full benefit of solar energy - free hot water. Want to know more? Call Jeff Curry of Lakeland Electric at (863) 834-6853.

## BUY-DOWN *(continued from page 1)*

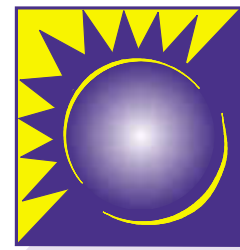
This center includes an Olympic sized pool and gymnastic training center.

For the second part of their buy-down program, Tallahassee will be seeking a solar energy business development partner to assist their staff in establishing a series of energy products and services to promote solar energy - solar thermal and photovoltaics. This partnership will require both a technical and financial commitment. The partner needs expertise in the full range of services associated with the start-up of a solar energy business, including:

- Market Research
- Green Pricing Programs
- System Design
- System Procurement
- System Installation & Maintenance

And, the partner must agree to jointly fund the start-up of this business venture in exchange for a negotiated share of business revenue. An RFP will be issued by September 2000.

FSEC's remaining buy-down funding will be used to support the Rebate Program. This program provides rebates of \$2 per watt (up to a system maximum of \$8,000) for qualified PV installations. To qualify, the system design first must be approved by FSEC and then inspected after installation. A system installer must be certified to participate in the program by passing the FSEC installers examination. The examination is free to FlaSEIA members. Study materials are an additional \$50. Any questions? Contact Jennifer Skislak at (407) 638-1427.



# FLASEREF EXTRA:

FLORIDA SOLAR ENERGY RESEARCH & EDUCATION FOUNDATION

## SUNBUILT™ EVALUATION

More than 300 Florida builders and 62 solar vendors were mailed surveys to solicit their input on the SunBuilt™ Program. This survey list included a purchased mailing list of the top 300+ builders in Florida, plus the Florida Solar Energy Industries Association's membership list. This surveyed population represented the entire population contacted about the 1997-98 SunBuilt™ Program.

Four separate surveys were developed, broken into component categories by: (1) participating builders, (2) builders who received SunBuilt™ packets through the mail and elected not to participate, (3) participating solar vendors, and (4) vendors contacted through membership announcements who elected not to participate. Twenty-one responses were received in the first return. Two were incomplete because

respondents, though on the purchased mailing list, were not actually builders. Additional follow-up responses were mailed in November, those findings will be reported in the next newsletter.

### INITIAL SURVEY RESULTS

#### Builders:

Builders liked the program once involved, claiming that a solar water heating

*(See Evaluation, page 6)*



1998 SUNBUILT HOME

## FSEC PV BUY-DOWN PROGRAM

Florida Solar Energy Center (FSEC) recently awarded Gainesville Regional Utilities (GRU) and the City of Tallahassee funding, through their PV buy-down program. In Gainesville, eight 4-kW PV systems will be installed at schools, most likely middle schools, over the next 2 to 3 years. Besides generating power for school activities, these panels will be used to teach students how solar energy works. A newly developed FSEC student curriculum will assist teachers in incorporating solar energy education into classroom activities.

GRU plans to solicit additional PV system funds by asking residents

and businesses to support the school program through monthly contributions (\$3 per month for 50 watts of power), commercial sponsorships (either monthly or a one-time endowment), or other outside funding sources. GRU estimates that it will take about 80 customers, at contributions of \$3 per month, to support each of these school systems. Other program installations will be scheduled as sufficient capital is raised.

The City of Tallahassee is installing a 10-kW PV system on their new, state-of-the-art athletic center.

*(Please see Buy-Down, page 9)*



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## EVALUATION *(continued from page 5)*

system was a good option for them to include. All those responding said they would participate in the program again, stating it gave them a good opportunity to familiarize themselves and potential consumers with solar water heating. Beyond the program span, builders claimed to have changed practices to include solar in their options list - even suggesting it to buyers when it makes sense.

Builders reported positive feedback from the viewing public. According to builders surveyed, consumers spoke favorably about the new system aesthetics and their probability of including a system in a new home. When considering the entire responding builder base, the majority said they didn't believe solar could be installed in an aesthetically pleasing way, nor did they believe that consumers were interested in solar alternatives. This builder perception is contrary to consumer research which indicates that consumers are interested in solar energy, reporting that they would increase their mortgage by \$2000 to \$3000 if it only meant a \$250 annual utility savings. Sixty-two percent of respondents in the Lakeland Utilities survey rated their likelihood of considering a solar water heater in the future between 4 and 5 on a 5-point scale of likelihood.

Builders were happy with the overall program criteria and marketing materials, but thought they needed sales personnel training, clear cost/benefit predictions, and additional media exposure. Both participating and nonparticipating builders mentioned installation expense as another technology disadvantage. One nonparticipating builder mentioned that they would consider installing solar if it was proven to save their customers more monthly than the

increased mortgage cost. Generally, builders wanted to know that savings exceeded monthly expenses.

These findings are consistent with other literature reviewed here. Builders want to satisfy their customers, but also want some incentive to get involved in a new marketing program. Overcoming past negative solar perceptions is still an uphill battle. Some builders reported concern about maintenance, roof leaks and system warranties.

### *Vendors:*

Vendors had a favorable perception of SunBuilt™. The majority reported sales increases as a result of their participation. However, many viewed codes and covenants as impingements to program expansion. Other vendors thought that there was not enough promotion, and as a result, builders seemed unaware of the program.

One participating vendor thought that builders held a dim view of solar in both concept and appearance. Other vendors correctly identified builders' consumer preference perceptions as an obstacle to solar market penetration. Though the majority of vendors reported some media promotion for their program effort, most suggested that media coverage was not adequate to support the program. Most vendors were happy with the marketing materials, as far as they went, but thought that a higher profile marketing campaign should be added to include a variety of publicity and educational vehicles. Other vendors mentioned voucher flexibility, additional training, and changes in participation criteria as areas they'd like addressed.

# MILLION SOLAR ROOFS:

Both FlaSEREF and FSEC are authorized to register solar installations for the Million Solar Roofs (MSR) Program. But to streamline system registry, all data will be entered into the Federal Registry by FSEC. This registry tracks solar systems installed since June 1997. Across the nation so far, nearly 8,000 systems have been logged. Of these, Hawaiian installations account for 93% of the systems logged and Florida 4% (338 systems). Ninety-seven percent of the registered systems are solar water heaters, 2% PV and less than 1% pool heating. To be included in the MSR registry, a system must have been installed after June 1997 and meet the minimum size standards listed below.

To register a system, the following information can be sent by E-mail (jskislak@fsec.ucf.edu),

floppy or zip disk to: Jennifer Skislak, 1679 Clearlake Road, Cocoa, FL 3292?. Or, if you have Internet access, you can enter the information yourself on the FSEC web site @ www.fsec.ufl.edu/PVT. You'll need to include the registry information listed below.

MSR intends to issue solar system certificates to owners listed in the registry, so accurate information is essential. FSEC also is in the process of creating an installer's card, which can be used as an identification card for installers once they've included their first registry in the FSEC database. If you need more information, call Colleen Kettles or Jennifer Skislak.



SYSTEM STANDARDS	REGISTRY INFORMATION
<p><b>TRANSPIRED COLLECTOR SYSTEMS:</b></p> <ul style="list-style-type: none"> <li>● 4 kW or 100 sq ft</li> </ul> <p><b>PV SYSTEMS:</b></p> <ul style="list-style-type: none"> <li>● Residential — .5 kW</li> <li>● Commercial — 2 kW</li> <li>● School — 1 kW</li> </ul> <p><b>SOLAR WATER HEATING SYSTEMS:</b></p> <ul style="list-style-type: none"> <li>● Residential — 1 kW or 20 sq ft</li> <li>● Commercial — 2 kW or 40 sq ft</li> </ul> <p><b>SOLAR POOL HEATING SYSTEMS:</b></p> <ul style="list-style-type: none"> <li>● Residential — 100 sq ft</li> <li>● Commercial — 400 sq ft</li> </ul>	<p><b>SYSTEM INFORMATION:</b></p> <ul style="list-style-type: none"> <li>● Type (PV, hot water, pool)</li> <li>● Size (kW for PV/sq ft for solar thermal)</li> </ul> <p><b>OWNER INFORMATION</b></p> <ul style="list-style-type: none"> <li>● System Owner's Name</li> <li>● Installation Address &amp; Phone Number (e-mail if possible)</li> <li>● Date of Installation</li> </ul> <p><b>INSTALLATION INFORMATION</b></p> <ul style="list-style-type: none"> <li>● Building Type (residential, commercial, industrial, governmental, school, church)</li> <li>● Federal Buildings (need agency name)</li> <li>● Total Installed Cost</li> </ul>

### SUNBUILT 2000

This year, SunBuilt 2000 is available to builders across the state. Model homes also can participate in the program. For more details on SunBuilt™ Program changes, browse online @ www.flaseref.com/builder.htm.

Do you have a story to tell about your SunBuilt™ parade or model home? To get media attention for both you and your builder, please call Linda Tozer early with details at (352) 374-6981.

Solar water heater workshops are available for participating builders and their sales staff. Vendors interested in how to approach builders also can attend a training session scheduled to coincide with the next FlaSEIA/FlaSEREF Board Meeting. Call Steve Gorman for additional information about these training sessions or for a prepared marketing presentation for builders at (904) 384-6503.