Chapter News

NTREG HOSTS Successful North Texas Solar Tour

The National Solar Tour was launched nation wide by the American Solar Energy Society (ASES) on October 4, 2003. The North Texas Renewable Energy group (NTREG) had a successful local tour on Saturday, October 11, 2003, featuring a DOE smart school and several energy efficient homes with hundreds of visitors attending.

"We were really excited about sponsoring the 2003 North Texas Solar Tour and supporting the ASES national tour with the opportunity to show Texans that solar solutions are real and available. It was remarkable to hear how many folks were concerned about their high electric bills and to see their amazement when they found out they could actually run their electric meter backwards – legally - using a solar or wind electric system," said Mike Correale, President, Solar Wind Technologies.

The photovoltaic array, upper left, *provides 980 watts of back-up power through a sealed battery system in the attic for any power failures. The rainwater collection tank shown behind the garage holds 550 gallons.*

The tour started at the renowned Roy Lee Walker Elementary School in McKinney, Texas, a Department of Energy (DOE) High Performance School. (See http://www.rebuild.org/energysmart school/about.html)

Folks came from all over North Texas to visit the school and to meet its outstanding principal, Deb Beasley. The school's architecture not only teaches the children about environmental awareness, but it also allows them to live it each and every day. The American Institute of Architects named Walker Elementary to the top 10 for Most Environmentally Responsible Design Projects in the Nation.

The south-facing galvalume roof *is home for 2 KW of Unisolar photovoltaics and a solar thermal (hot water) system.*

The tour then took folks to three special homes: the Westbrook home in Fairview, hosted by Paul and Elena Westbrook; an Enviro Custom home in Frisco hosted by Reid Mcloud; and an Enviro Custom home in Dallas hosted by Cathy Williams. These home highlighted the following features:

- Solar electric
- Passive solar design
- Solar water
- Structural Insulated Panel (SIP) walls and roof system
- Geothermal, ground source heat pumps and high efficiency air ventilation systems
- Super efficient, affordable Marvin Low-E, argon-filled wood framed windows
- Recycled materials such as decking, carpets and countertops
- Natural gardens with native Texas plants and rainwater collection systems

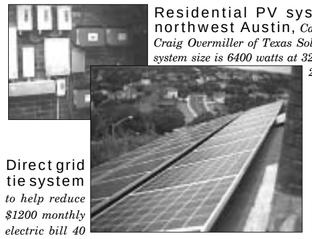
"The tour was a huge success in educating the attendees that using solar can be aesthetically pleasing! It was encouraging to hear the "oohs" and "ahhs" elicited by the beauty of the homes and then to watch the surprise as visitors saw bills reflecting significant reductions in electricity costs," commented Cathy Williams, President, Enviro Custom Homes.

The American Solar Energy Society's 8th Annual National Solar Tour had more than 1,200 homes, businesses and public buildings open to visitors in 480 communities across America. This year's tour was expected to draw as many as 30,000 visitors nationwide. Tour attendees also had the opportunity to win a free 2,000-Watt solar electric system with inverter and battery storage system worth over $11,000, plus many other prizes. Last year, more than 26,000 people toured 1,222 homes, schools and other buildings in 44 states.

Mike Correale is the Chair-Elect of NTREG and President of Solar Wind Technologies.

HREG TAKES ON KENYAN ORPHANAGE PROJECT

Members of the Houston Renewable Energy Group (HREG) are learning about solar power systems while doing a service project. At a regular meeting of the group, a profes-sional from Southwest PV Systems showed members how to size a simple home PV system using an orphan's home in Kenya as an example. At the same meeting, the director of African operations for Cherish Our Children International told about her non-profit organization's efforts to provide good homes for orphans in Kenya. As a service project, members of HREG are raising $2000 to purchase a simple solar power system for the orphanage. If you would like to help, please send your check to Cherish Our Children International, P.O. Box 540007, Houston, TX 77254 and mark it for **Solar Orphanage Project.**



Residential PV system located in northwest Austin, *Cat Mountain Installed by Craig Overmiller of Texas Solar Power Company, the system size is 6400 watts at 322 Volts DC with 3 SMA 2500 Inverters.*

Direct grid tie system *to help reduce $1200 monthly electric bill 40 Kyocera 158G Modules are mounted in 3 arrays, 1 with 14 modules and 2 arrays with 13 modules.*

Membership Form

Name: _____

Affiliation: _____

Address: _____

City: _____ State: _____ Zip: _____

Home phone: _____ Work phone: _____

Fax: _____ E-mail address: _____

Other organizations to which you belong (check or write-in all that apply)
☐ ASES ☐ TREIA ☐ TXSEIA ☐ AWEA ☐ SEED ☐ Sierra Club

How can you help promote clean energy? (check or write-in all that apply)
☐ Attend informal discussions ☐ Staff educational booth
☐ Help w/ solar car races ☐ Write articles ☐ Make presentations
☐ Conference volunteer ☐ Contact your utility/legislators

Annual Dues

Individual Membership:
☐ $15 (student or EPSEA member)
☐ $25 (minimum regular member)
☐ $50 ☐ $100* ☐ $200*
☐ $300 Patron*
*recognized in quarterly newsletter

Business Membership:
☐ $100 ☐ $250 ☐ $500**
**includes ad in quarterly newsletter

ASES Membership:
☐ $65 discounted American Solar Energy Society membership for current TXSES members

School Fund:
☐ $25 Check here to contribute an additional $25 to the TXSES school fund.
This money is dedicated to support renewable energy projects in Texas classrooms.

Total due: $ _____ Make check payable to: TXSES
PO Box 1447
Austin, TX 78767-1447

Texas Solar Energy Society wishes to thank the following members who have supported us with $100, $200 and $300 level memberships:

John Carson, Randy Combs, Gary Covington, Tom Fitzpatrick, Robert Foster, Terese Hershey, Mike Landrus, Jane Pulaski, Sam Reeves, Lorin Vant-Hull, Paul Weatherall, Chuck Wright

The following companies have chosen to support the Texas Solar Energy Society's educational mission by joining at the business level:

ACR Engineering, Houston, Willis Ponder, wponder3@aol.com
Jeffrey Lee Bashore Architects, Brownsboro
CSG Services, Austin, John Hoffner, john.hoffner@csgrp.com
Department of Aviation, Baylor University, Waco, Max Schuck
Hill Community College, Cleburne, Dave Gardner, dgardner@hill-college.cc.tx.us
Green Mountain Energy, Austin, Terri Eaton, terri.eaton@greenmountain.com
Janet's Electric, Austin, Janet Hughes, janetselectric@austin.rr.com
North Texas Renewable Energy Group, Ft. Worth, jim.duncan@texstars.com
Solar Machines, Spring, Miguel Timm, mtimm@main.com
Solar Wind Technologies, Lucas, Mike Correale, Correale@solarwindtec.com
Sunrise Solar, Austin & San Antonio, David Bebeau, david@sunrisesolartx.com
Texas Solar Power, Austin, Craig Overmiller, solar@onramp.net

And special thanks and kudos to the following business for joining at the higher Business level of support:

Meridian Energy Systems Austin, Andrew McCalla andrew@meridiansolar.com

TXSES Chapter Contacts:

El Paso Solar Energy Society (EPSEA)
Karl Dreher, Chair, Board Representative
915-747-6112
www.epsea.org

Houston Renewable Energy Group (HREG)
John Gardner, Board Representative
281-590-9116
www.txses.org/hreg

North Texas Renewable Energy Group (NTREG)
Lisa Silguero, Chair
214-893-7990
www.txses.org/dfwsun.php

Solar San Antonio
Dominick Dina, Executive Director
210-354-0236
www.solarsanantonio.org

The Texas Solar Energy Society (TXSES) was founded in 1976 and is a non-profit educational organization formed to increase the awareness of the potential of solar and other renewable energy applications and to promote the wise use of these sustainable and non-polluting resources.

Texas Solar Energy Society
PO Box 1447 • Austin, TX 78767-1447
Kathryn Houser, *Director*
Phone: (512) 326-3391 or
(800) 465-5049
Fax: (512) 326-1785
E-mail: info@txses.org

Visit our web site at:
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WINTER 2004

REFLECTOR

promoting the wise use of sustainable and non-polluting resources

TEXAS SOLAR FOR SCHOOLS PROGRAM IN FULL SWING

Texas schools are appreciating their abundant sunshine a little more these days thanks to the Texas Solar for Schools Program (TSSP) sponsored by the Texas State Energy Conservation Office (SECO) and local school partners. TSSP will bring a 1 kW photovoltaic (PV) system and educational materials to as many a 10 schools throughout the state. This program, administered by Austin-based CSG Services, is the 2nd phase of a program that began in 2001. By the end of this round, as many as 20 schools will be participating in the program statewide. SECO is sponsoring approximately 75% of the total project awarded to the schools. Each participating school is required to identify a local partner to provide the remaining 25%. This additional cost-share can be in the form of cash, labor or equipment.

TSSP 1kW system goes up at Brykerwood Elementary School, Austin *The system is part of a statewide program to install PV on public school buildings and get solar into the curriculum.*

These are the schools that have been selected, their cost-share partner and the form of cost-share:

Alvin ISD – Alvin High School, Alvin (Cost-share Partner: Green Mountain Energy Company, cash)

Austin ISD – Brykerwoods Elementary School, Austin (Partner: Austin Energy, PV modules)

Austin ISD – Kealing Middle School, Austin (Partner: Austin Energy, PV modules)

Clear Creek ISD – Seabrook Intermediate School (Partner: Green Mountain Energy Company, cash)

Dallas ISD – Environmental Education Center, Seagoville (Partner: Green Mountain Energy Company, cash)

East Central ISD – East Central High School, San Antonio (Partner: City Public Service, cash)

El Paso ISD – Cordova Middle School, El Paso (Partner: El Paso Solar Energy Association, installation labor)

Harleton ISD – Harleton Elementary School, Harleton (Partner: pending)

Junction ISD – Junction Middle School, Junction (Partner: pending)

Northeast ISD – Roosevelt High School, San Antonio (Partner: City Public Service, cash)

These participating schools will receive:

- 1 kW grid-connected PV system mounted on a south-facing exterior wall
- Data monitoring capability: performance data from the system (and other schools) will be available through the Internet via a datalogger installed on site. Viewers can see graphical historical data as well as download data for analysis.
- Educational materials: each school will receive a set of fact sheets, lesson plans (specific to grades 4, 6 and 9 but adaptable to all grade levels) and activities that integrate solar energy into the classroom.
- Teacher Training: TSSP staff will visit with each school and provide both teacher training and presentations to students. Teacher training will consist of a presentation on renewable energy and an introduction to available curriculum and other teaching materials that are provided to each school.
- Maintenance Personnel Training: TSSP staff will train school district maintenance personnel about the operations and maintenance of the system as well as provide a user's manual.

Visibility of the systems was vital to SECO. According to Pam Groce, Program Manager of SECO's Renewable Energy Demonstration Program, "It's important to us that these systems are visible to the students, parents and teachers and not up on a roof somewhere out of sight. Students will be able to physically see the PV system, then log on to a computer and see how much energy it produced for their school. It's essential to make that connection."

All Texas independent school districts were eligible to apply for the program and were notified of it in April 2003. Schools were required to submit an application to SECO and were selected based on merit. For more information about the program, contact Pam Groce at pam.groce@cpa.state.tx.us.

Visit our web site for a calendar of events:
www.txses.org

ANNUAL MEMBERSHIP MEETING DECEMBER 6: PLEASE JOIN US

Holidays are here and that can mean only one thing: the Texas Solar Energy Society annual membership meeting must be just around the corner. Yup, it's that time again. We will gather for some great food and drink, hear a "state of the union" address (or at least a state of the society), meet and greet current Board members and those on the new slate for the Board of Directors, discuss what's planned for next year and just plain have time to spend with other solar whackos. It's your chance to provide some input into the future direction of TXSES and maybe meet that one person who has the answer to your solar query.

This year we have arranged for a special venue for the meeting: Westcave Preserve off Hamilton Pool Road, about 45 minutes southwest of downtown Austin. Their new Environmental Learning Center is an excellent example of sustainable, passive design and also incorporates a PV system and rainwater collection. The Preserve itself is dedicated to sustaining this unique ecological treasure and inspiring greater environmental conservation and awareness. Special guided tours are available for $4/person.

When: Saturday, December 6, 2003, 2 – 4 p.m.
Where: Westcave Preserve, 24814 Hamilton Pool Road

Due to the unique design, *visitors can "hold" the sun at Westcave Preserve.*

Come for the food, come for the fellowship, come for the waterfall; we don't care…just be there!
RSVP to info@txses.org so we can plan the food.

Chairman's Corner

with Jaya Pichumani Jackson

Solar Momentum across Texas

We're getting back to our roots this issue by highlighting recent solar activity in Texas. The Texas solar energy community has a lot of accomplishments to be proud of, including installations (commercial and residential), education and outreach, policy implementation, and training. From PV in public places (Institute of TX Cultures, San Antonio; and the Palmer Events Center parking garage and the Convention Center, Austin) to solar home tours (Dallas/Forth Worth); from certifying PV installers to providing teacher workshops on model solar cars (both statewide); and from bringing solar into Texas schools (statewide) to one of the most ambitious city resolutions for its municipality to generate 20% of its electricity from renewable sources by 2010 (Austin).

The PV systems at the Institute of TX Cultures (ITC) and Palmer Events Center (PEC) parking garage are examples of applications that are substantive in size, are very visible to the public in well-visited areas, and are located in downtown urban locations. These are characteristics not normally associated with PV applications, but reflect the acceptance of PV in mainstream society.

In October, the first exam was held to certify PV installers/practitioners by NABCEP. Although this is a volunteer certification, establishing standards for those who design and install PV systems will only help the solar cause. It brings the field of PV to a new level of professionalism that many other similar and already accepted industries are required to have. Certification and standardization can provide solar customers with assurance that can only make the industry stronger. Our state capitol may be the first city in Texas to establish financial incentives for PV and other renewable energy systems for commercial and residential buildings. Although one city provides plenty of justification, if others follow, the increase in PV installations may create an even greater need for standardization in the field.

All of these recent accomplishments are worth noting in one place because they are all related to each other. And it's a reminder that in order to reach a true solar society, multiple facets of society must be addressed.

Jaya Pichumani Jackson is the Engineering Manager in the Advanced Energy Division of CSG Services.

Austin School District Subscription of Renewable Energy Largest in Nation

The City of Austin's green power program notched another first when the Austin Independent School District (AISD) signed up for 45 million kilowatt-hours of green power annually. The green power purchase is thought to be the largest by any school district in the nation. This subscription represents about 30% of the AISD annual power usage and is sufficient electricity to power almost 4,000 homes.

According to the U.S. Department of Energy, Austin Energy ranked number one in the nation in 2002 in renewable energy sales among utility green power programs, with subscriptions for 251 million kWh. This past June, Concordia University in Austin became the first college or university in the nation to subscribe to green power for 100% of its power needs, signing up for 5.5 million kWh annually.

Austin Energy's green power program, called GreenChoice, distinguishes itself by giving subscribers a fixed cost component. Subscribers to GreenChoice see the traditional fuel charge removed from their electric bill and replaced by a "GreenChoice Charge." That charge stays fixed for the term of renewable energy contracts. The AISD locked in pricing that will stay fixed until 2011. Currently the GreenChoice Charge is 2.85 cents per kWh. Austin Energy's fuel charge is 2.004 cents per kWh but will increase to 2.79 cents/kWh January 1, 2004 due to higher natural gas prices and unanticipated generation outages that required more purchased power over summer months.

SAN ANTONIO ENERGY LEADERSHIP
TEXAS RENEWABLES '03 CONFERENCE

Make plans to be in San Antonio November 20 –22 for the annual TREIA conference and exhibition. Joining forces with the San Antonio Metropolitan Partnership for Energy and Solar San Antonio, the co-sponsors are promoting the theme "Conserve, Sustain, Renew: Changing our Energy Standard."

The program kicks off with local tours Thursday at 12:30, followed by afternoon workshops and a reception in the exhibit hall. Friday's full day of concurrent sessions begins with a keynote address from featured speaker Christopher Flavin, Director of the Worldwatch Institute. The conference concludes on Saturday after the luncheon program, with an optional tour of Brooks fuel cells and the solar installation at ITC in the afternoon. Topics covered will be of particular interest to government officials, as well as those in the renewable industry, and include an energy primer for local governments, sustainable building technologies, building solar credibility, geoexchange, renewable fuels, and wind transmission and storage.

Join us at the Sheraton Gunter Hotel in downtown San Antonio and stop by the TXSES booth.

For complete program information, see www.sanantonioenergyleadership.org.

SAN ANTONIO'S FIRST SOLAR ELECTRIC POWER STATION

San Antonio's municipal utility, City Public Service (CPS), is poised to start its first solar energy power station. This solar project entails constructing a covered parking area at the Institute of Texan Cultures. Three solar arrays, using a total of 198 seventy-five watt solar modules, will be mounted atop cement bases with steel columns and supports. The three arrays will have a fixed 15 degree southeast facing angle to optimize the harnessing of the sun's energy. When combined, the arrays will provide cover and partial shading to eight parking places and the educational kiosk building, which is to be located underneath the northern most array. It will provide interactive solar energy information and data to visitors, informing them of the electrical production at the moment vs. the potential output. In addition, monitors at the site will feed solar energy data continuously to the CPS' website so area schools can track the panel operations over time.

The 10 kW of solar energy produced by the project will be sent directly into CPS' distribution system. Construction for the project began in mid-July 2003 and the official unveiling and dedication will occur at 10:00 AM on November 20, 2003 at the Institute of Texan Cultures. Emission reductions from this installation make the investment valuable to San Antonio's air quality. CPS estimates that the carbon dioxide emissions reduced by the PV are equivalent to not driving a car 30,866 miles annually or planting three full acres of trees.

The installation of this project is part of CPS' effort to emphasize clean, renewable energy. Most solar panels are installed on rooftops, but CPS purposely poised these panels as covered parking to demonstrate that solar can be installed virtually anywhere the sun shines, according to Matt Haecker of CPS. The message of distributed generation is an important one, as we rethink traditional models of central power plants. A growing portion of municipal electricity will come from on-site power in the future. Haecker further explained that CPS has a 10-year agreement, with a 5-year option to renew, to operate the panels with the UT System, which operates the Institute. After that, the UT System will own the panels.

TEACHER WORKSHOPS OFFERED: LEARN TO USE MODEL SOLAR-POWERED CARS IN THE CLASSROOM

The Texas Solar Energy Society is proud to announce that we have teamed up with the University of Texas, El Paso, Energy Center to bring FREE teacher-training workshops to middle school teachers across the state of Texas. Teachers will experience working with solar powered model cars as a means of incorporating alternative energy sources into the classroom. The U.S. Department of Energy's National Junior Solar Sprint (JSS) Program is a classroom-based, hands-on educational program for 6th, 7th, and 8th grade students. JSS student teams apply math and science skills along with creativity to construct model solar-powered cars and race them in interscholastic competitions hosted within their schools or within their states or regions. JSS began in 1990 as a single demonstration race and expanded to 10 regional competitions in 1991. The program now uses public and private sector support to improve education in middle schools across the nation. In recent years, the event grew to 83 host sites in 26 states involving 100,000 students and 15,000 teachers.

The primary goals of the JSS program are to:

- generate enthusiasm for science and engineering at a crucial stage in the educational development of young people;
- improve students' understanding of scientific concepts and renewable energy technologies; and
- encourage young people to consider technical careers at an early age.

During a four-hour workshop, participating teachers will experience the whole program by working in pairs to build a model solar car and then conducting a race against the other teachers in the class. Teachers will be provided with a CD containing curriculum guidelines and all the information needed to start a JSS program in their district. The model solar cars and equipment provided will belong to the teachers upon completion of the class. Each workshop will be limited to 20 participants from within one district, with the intention that teachers will pool the kits and share them among various schools of that district throughout the year.

Workshops are scheduled in the following locations:

City	Location	Date	Time
Houston	CAST	Oct. 30th	9am – noon
Dallas	Winston School	Nov. 8th	12:30 – 4:30 pm
Austin	Kealing Jr. High	Nov. 15th	12:30 – 4:30 pm
Seabrook	Seabrook Middle School	Dec. 6th	8:30 a.m. – 12:30 p.m.
San Antonio	Rayburn Middle School	Dec. 12th	12 - 4 pm

If you are a teacher interested in attending a JSS workshop, please contact TXSES for more information and to pre-register at 1-800-465-5049 or by email at info@txses.org.

THE SOLAR LAB AT TSU

The Photovoltaic (PV) Research and Demonstration Laboratory at Texas Southern University opened its doors in 1997, jointly funded by Reliant Energy (formerly Houston Lighting and Power Company) and the Electric Power Research Institute (EPRI). More than twenty-five Texas Southern University (TSU) students have received internships through this program to assist with tuition, fees, books and living expenses during their stay at the institution. Over the past seven years, the laboratory has sought to be a testing and demonstration medium for groups involved in promoting PV technologies. The PV system installed on site consists of 16 panels wired to supply both alternate current (AC) and direct current (DC) charging the battery bank or being inverted is to AC for the appro-priate loads. The panels located on the north side of the Technology Building face south to southeast to maximize the sun reaching the panels. Also, a wind turbine is installed and monitored by display meters and stored by the laboratory data acquisition system.

In collaboration with Johnson Space Center at NASA and others, a battery-free refrigerator project is currently being tested in the laboratory. The project objective is to test the solar refrigerator in various locations under different settings and conditions to compare performance levels. The refrigerator, manufactured and donated by Solus, is designed to maintain cold temperatures up to seven days. In one embodiment, the refrigeration system includes a photovoltaic panel, a capacitor, a compressor, an insulated enclosure and a thermal reservoir. This project teaches the students how to collect and analyze data, and enhances research, reporting and presentation skills.

The PV laboratory serves as an educational and tour site for groups visiting the campus such as the recent TXSES Board of Directors meeting hosted there on October 19th. The TSU students are always eager to present their projects in the laboratory and to participate in conferences, festivals, and visit local schools to increase awareness of renewable energy technologies.

In addition to hosting school groups, community, civic and professional organizations, the PV laboratory becomes a teaching mechanism for the Renewable Energy and Environmental Protection (REEP) Academy for three weeks each summer. REEP introduces methods of energy conservation, management and environmental protection to inner city youths who are less likely to gain exposure to these studies as career options. While living on the TSU campus, they will also travel to sites where new technologies in renewable energy are being developed, such as the Alternative Energy Institute at West Texas A&M University.. Since its inception by the founder, the late Dr. Joshua Hill, over three-hundred high school and college students have participated in the summer academy. REEP has received sponsorship from many sources including both TXSES and TREIA, SECO, TEA, NREL, Houston Endowment, Shell Foundation and ExxonMobil. "The REEP Academy will offer you wonderful learning experiences in technologies related to renewable energy and the environment. These experiences will prepare you for challenges to meet the increasing demands on energy resources. Through classroom presentations and hands-on activities, you will learn how to become mathematicians, engineers, scientists, chemists, leaders and how to make contributions in your community to improve environmental and energy problems in the United States and the world" Dr. Mitchell M. Allen, Interim Dean, College of Science and Technology told students.

Joyce Lattimore is Project Coordinator for the Photovoltaic Research and Demonstration Laboratory at Texas Southern University. She can be reached at lattimore_jh@tsu.edu.

The 03 ROUNDUP in Pictures

photos courtesy of Steve Weikal, WeikalMedia and Judy Pearson

Renewable Chatter

with The Solar Guy

Dear Solar Guy,
For decades you liberals have been pushing solar energy, but the industry doesn't seem to have much future. Why not just go to a hydrogen economy and use fuel cells - that's the future!
George Brush

Dear George,
It is true that the solar or renewable industry has flowed and ebbed over the last two or three decades, and that has been largely a result of highly volatile petroleum costs, changes in federal tax laws, and lastly, that we pay a much lower price for petroleum compared to the rest of the world. As for hydrogen, it is not a naturally occurring fuel. One must obtain it by some process such as reforming hydrocarbon fuels or dissociating water, and each of these requires energy. Reforming produces hydrogen by stripping two hydrogen atoms from a hydrocarbon (petroleum). While the subsequent use of the hydrogen (say in a fuel cell) is clean, the reforming process is not. There is some question as to the merit of reforming a hydrocarbon to produce clean burning hydrogen over simply combusting the hydocarbon as we do now. Electrolysis of water to produce hydrogen can be done with any electrical source, conventional or renewable. The advantage of photovoltaics (solar) is that the overall process is relatively clean. The main issue is the current cost of solar cells, which have been consistently decreasing. So while the future may be a hydrogen economy, it comes with a price. It is very likely that solar (and wind) will play a significant role in it.
The Solar Guy.

Dear Solar Guy,
If I install solar panels on my roof, how should I orient them? I have a house that is located so that the roof slopes almost due south.
P. V. Shell, Houston, Texas

Dear P.V.,
By solar panels, I assume you mean solar electric (photovoltaic panels), rather than collectors for water heating. For uniform electric rates the best orientation in Texas for the homeowner (the one who pays the bill) is due south and tilted at about 20 degrees. The orientation can vary at least 15 degrees west or east and 10 degrees in tilt from these with little affect on performance. However, the real cost (to the utility) of producing electricity varies with season and during the day. The reason is that during peak demand periods, more expensive generating equipment is brought on line. It is likely in the future that residential rates will vary according to time of use, like rates for some commercial customers do currently. Austin Energy has considered an experimental variable rate schedule for which peak demand rates are about four times non-peak rates. The peak periods occur from 3 to 8 pm on weekdays from May - September. Based on such a future scenario, we have found that the optimum panel orientation is about 30 degrees west of south and a tilt of about 30 degrees. By optimum, I mean that for a grid-connected system the value of the electricity generated by your panels will be maximized and thus the net cost to you for utility power will be minimized. Again, the orientation can vary by +/- 10 degrees with little decrease in performance.
The Solar Guy

The solar Guy is actually Dr. Gary Vliet, professor emeritus of the U.T. School of Engineering

National PV Installer Certification Opportunity Now A Reality -

Austin One of 14 Initial Exam Sites
In July of 2000, the Texas Million Solar Roofs Partnership (TMSRP), organized by the Texas Renewable Energy Industries Association (TREIA), began work on a contract from the national Million Solar Roofs Initiative to lay the groundwork for photovoltaic installer certification in Texas. The primary objective was to assure that Texas had knowledge of and involvement in a national process that was soon to get under way to create an industry generated and approved national voluntary installer training, testing and certification procedure. That process is now in place and a new era for the PV industry has begun.

The North American Board of Certified Energy Practitioners (NABCEP) has conducted its first nation-wide voluntary Photovoltaic (PV) Installer Certification Exam. The exam was developed beginning in 2001 with the PV industry actively involved in the process every step of the way. NABCEP, which is headquartered in Malta, NY, reports that nearly 100 first time candidates from 30 states sat for the exam in 14 host cities on October 25th. TREIA and the TMSRP hosted the exam for this region, providing a testing site and the test administrator and monitor. Several individuals, mostly from Texas, took the exam in Austin at the Omni South Park.

Ezra Auerbach, Chair of the Board of NABCEP stated, "I'm gratified that almost one hundred of our industries' most qualified installers made the voluntary effort to become certified this weekend. I believe that this shows that the ability to document professional standing is important to PV installers. They recognize the comfort and value that certification offers consumers and funding agencies."

According to NABCEP, the next exam will be offered on April 17, 2004. The deadline for applications to take the exam on that date is January 2004. Exam locations will not be announced until after that deadline has passed. For all the details about voluntary PV installer certification, including fees, how to apply to take the exam, and how to access tools to help prepare, visit their web site at: www.nabcep.org.

Russel Smith is the Executive Director of the Texas Renewable Energy Industries Association. He can be reached at r1346@aol.com.