



# CRES NEWS

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A Chapter of the American Solar Energy Society

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## **CRES MILLION SOLAR ROOFS PROJECT TO BE TOPIC OF NEXT CRES MEETING**

### **The Case for Grid-Connected PV**

Last month it was reported in CRES NEWS that both the Electric Power Research Institute (EPRI) and the Rocky Mountain Institute (RMI) expressed their view that distributed power generation is a key solution to the overtaxing of our electric power transmission grid and that greater adoption of distributed PV systems could be a viable avenue to achieve this solution. If there is any doubt, we need to look no further than Japan. That country has long been a leader in the application of PV systems to supply electricity to its people. Not only is it the country with the most electric capacity already installed, it also has the most ambitious plans for PV solar in the years ahead.

In 2001, Japan had a total of 452 MW of solar electric installations, many of which were connected to the grid. This amounts to roughly 45 percent of the world's total of 982 MW. During the same year, for example, the United States had 168 MW installed. Over the past ten years, Japan has increased its installed solar electric capacity more than 20 times and prices have dropped by a dramatic 75 percent. A contributing factor to Japan's success is the cooperative effort between government and industry. While the government has subsidized solar manufacturers for several years it is noteworthy that despite recent substantial cutbacks in these subsidies, the industry has continued to grow.

But the growth of grid-connected PV in the U.S. is not to be ignored. In 1990 there was about 0.4 MW of PV connected to the grid. By 2002 there were 2,317 operating solar installations connected to the grid with a total capacity of 31.6 MW. A lot of this was led by states (California in particular) that enacted RPS legislation (Renewable Portfolio Standards) mandating that utilities produce a given percentage of their electricity by renewable energy technologies by a given year.

Without a doubt, there is growing opportunity for grid-connected PV in this country and in the State of Colorado. It is a viable means of reducing demand on our transmission system and is becoming more and more cost competitive. We in CRES should do everything we can to make our public officials and utility executives aware of these facts and to encourage them to take action to increase the use of PV installations in our state.

All CRES members are invited to attend the monthly CRES meeting at **5:30pm** on Wednesday, **October 29th** at the NREL Visitors Center to hear a report on the status and accomplishments to-date of the *CRES Million Solar Roofs* project. The NREL Visitors Center is located 2 blocks past the Marriott hotel in the Denver West complex (exit 263 from I-70, just north of Colfax between Simms and Indiana).

Our guest speaker will be **Joe Bourg**, President of Millennium Energy, LLC, who has been sub-contracted by CRES to lead our *Million Solar Roofs* (MSR) efforts. The Million Solar Roofs program is a national initiative funded by the U.S. Department of Energy to illustrate the practicality of using solar technologies in homes and other structures to augment energy needs. CRES was awarded a contract to carry out this program in the local area.

Mr. Bourg will discuss the ongoing efforts being undertaken by the CRES MSR Partnership to support the development of the *Zero Energy Homes* market in Colorado. His presentation will detail CRES' cooperative efforts with home builders to encourage their adoption of a "whole building" design approach which would incorporate solar technologies such as passive solar, energy efficiency, and photovoltaics to achieve a more cost-effective home energy package.

Millennium Energy is a Golden based consulting firm dedicated to providing technical, economic, marketing and regulatory services in support of solar energy projects, programs, and initiatives throughout the country.

## Colorado Snap Shots

This column will feature local meeting announcements, short news items, personality profiles, and other matters of interest to Coloradans.

### CALENDAR OF EVENTS

#### October 21... *Rebuild America/OEMC High Performance Design for Schools.*

Tri-State G & T Headquarters, 1100 W. 116 Ave., Westminster. 8:00 am - 3:30 pm. Full day workshop on high performance design strategies and technologies for schools. Learn how to build better schools. There is no fee. For further information visit [www.colorado.gov/rebuildco/events/schools\\_seminar.htm](http://www.colorado.gov/rebuildco/events/schools_seminar.htm). To register, call Rena Finn at 303-894-2383 or e-mail to [reba.finn@stat.co.us](mailto:reba.finn@stat.co.us).

#### October 30... *Renewable Energy Strategies Conference.*

BMH-BJ Congregation Center, 560 South Monaco Parkway, Denver. 4:30 pm - 7:30 pm. Hosted by Colorado State Senators Ken Gordon and Dan Grossman. Speakers will include representatives from DOE, NREL, University of Colorado, Center for the American West and the STEPP Foundation. There is no fee. For further information visit [www.knowledgemessenger.com](http://www.knowledgemessenger.com). RSVP to 303-761-3596.

#### November 11... *Homeowners Energy Workshop - Golden.*

National Renewable Energy Laboratory Visitor Center just west of Marriott Hotel in Denver West Business Complex off of Colfax Avenue between Simms and Indiana. 6:00 pm - 7:30 pm. Presented by the Colorado Energy Science Center (CESC). Theme is "How to Cut Your Home Energy Costs." Provides step-by-step guide to implementing energy efficiency. Registration fee is \$10 which includes free copy of *Consumer Guide to Energy Efficiency*. For further information and to register call 303-216-2026 or visit [www.energy-science.org](http://www.energy-science.org).

#### November 13 ... *Homeowners Energy Workshop - Littleton.*

Littleton Community Center, 1900 W. Littleton Blvd., Littleton. 7:00 pm - 8:30 pm. See listing above for details.

### JOB OPENING

The Colorado Energy Science Center (CESC) is seeking an Administrative Assistant to support rapidly growing efforts to educate K-12 students and homeowners. For details contact Pat Keegan at 303-216-2026 or [pkeegan@energy-science.org](mailto:pkeegan@energy-science.org)

## Report on CRES Tour of Solar Homes

During the first two weekends of October, CRES hosted the **2003 Colorado Tour of Solar Homes**. Passive, active and photovoltaic powered solar homes were opened to visitors within the Denver Metro area, as well as in Boulder, Canyon City/Pueblo/Rye, Carbondale, Durango/Bayfield, Ft. Collins, Manitou Springs/Colorado Springs, Rico, Roaring Fork Valley/Aspen/ Glenwood Springs, and Silverthorne. The event was part of the **2003 National Solar Tour** that was conducted all over the nation during the week of October 4th by the American Solar Energy Society.

CRES headquarters' staff and the Center for Resource Conservation joined together to present the Denver Metro and Boulder tours on successive days; Saturday, October 4 - Denver Metro, and Sunday, October 5 - Boulder. In conjunction with the Denver Metro tour, CRES hosted an *Exhibitor Showcase* that featured several local renewable energy and energy efficiency companies and organizations. In addition a series of workshops for home energy users was conducted on October 7th and 9th by the Colorado Energy Science Center.

It is estimated that more than 1000 people visited solar homes in the Denver/Boulder Metro area. Many others attended the tours in other regions of the state. Our gratitude to these Metro Denver home owners for opening up their homes to visitors on the tour:

**Brighton/Fort Lupton** - Kathy & Joe Jones, Rhonda & Richard McCutcheon,

**Broomfield/Westminster** - Lois & Art Albrecht, John Avenson, Mary Ann & Eric Borcharding, Michelle Whistler & Larry Roybal

**Golden** - Carol & Don Cameron, Mary O'Connor & Will Brown, Pat & Brian Martinek, Linda & Chuck Goudge, Marilyn Clancy, Nadine & John Lightburn, Desiree & Dennis Lane

**Idaho Springs/York Gulch** - Tina & Curtis DePoyster, Amy Karsibaum, Pam & Chuck Natham, Marci Bowman & Bill Sanders, Patty & Shawn Septon, Kelly & Otto Van Geet

The tour was coordinated by **Pat Grossman** with assistance from CRES Executive Director, **Sheila Townsend**. **Pat Keegan** organized the workshops, and he and **Paul Kriescher** gave the presentations. In addition, the members of the Planning Committee are owed a special debt of gratitude for their volunteer efforts in making the event a success. They are John Avenson, Julie Baxes, Mike Beckett, Eric Borcharding, Lori Filipek, Carolyn Finlaison, Walt Kaesler, Dennis Raatz, Janice Rooney, John Rosapepe, Bill Sanders, and Charlie Stevens.

Included with this issue is a supplement including advertisements for the sponsors of the Denver Metro Tour of Solar Homes. These firms and individuals provided financial support for the tours and you are encouraged to support them whenever you can when purchasing solar equipment or service. In addition, the supplement includes a list of volunteers who also deserve our thanks for the many contributions they made.

## CRES CORNER

**CRES Board Retreat....** The CRES Board of Directors will meet on October 26, 2003 to finalize a new *CRES Strategic Plan* for implementation starting in January of next year. This is a follow-up of the input received from members at the last CRES Conference. The goal is to outline specific actions and projects in the following areas:

1. Education - Public, Media, Schools, etc.
2. Legislative Issues - Federal, State, RPS, etc.
3. Collaboration with other organizations
4. Business/Industry Involvement
5. Subchapters - Roles and activities

All CRES members are urged to submit their ideas or specific recommendations to Strategic Planning Committee chair, Pat Keegan, at [pkeegsan@energyscience.org](mailto:pkeegsan@energyscience.org) by no later than October 23.

**N-CRES Hosts Talk by Utility Executive...** On October 14, the Northern Chapter of the Colorado Renewable Energy Society (N-CRES) hosted a meeting on the Colorado State University campus featuring Doug Swartz of the Fort Collins Utility Company. He spoke on the subject of *Colorado New Home Choices: Comfort, Health, Durability and Value*. The meeting was well attended and Mr. Swartz' presentation was hailed as excellent.

**CRES Display at Eco-Village ...** On September 1, CRES sponsored a booth in the *Eco-Village* at the E-Town concert at Red Rocks. Our special thanks to participating CRES members Marta and Victor Creazzi, Tim Olsen, Sarah Scher, Sheila Townsend, and Joanna Vincenti.

### CALL FOR CRES BOARD NOMINATIONS

CRES members are requested to submit nominations for the CRES Board of Directors for 2004-2005. There will be six openings (out of 14 members). Board members are elected to serve two-year terms. Please be sure that your nominee is able and willing to serve before you submit her/his name. Your nomination should be accompanied by a short statement (80 words or less) from the nominee as to her/his qualifications and the contribution that she/he would make on the Board. Submit your nomination by no later than **October 24** to Sue Reilly by e-mail at [sreilly@enermodal.com](mailto:sreilly@enermodal.com) or by Fax at 303-830-2016.

### ASES PUBLISHES NEW EDITION OF *ADVANCES IN SOLAR ENERGY*

The American Solar Energy Society has released the **15th Edition** of *Advances in Solar Energy*. This text, published biannually, is the most authoritative summary of developments in solar technologies that is available to the public. Edited by the renowned solar technology expert, D. Yogi Goswami, it includes technical information and assessments by some of the foremost solar scientists and engineers in the world. The price to ASES members is \$150 (\$200 for nonmembers). For more information and/or to order, visit [www.ases.org](http://www.ases.org) or call 303-443-3130

### CRES NEWS

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The official CRES address is:

**P.O. Box 933  
Golden, CO 80402**

The address of the editorial office is:

**1050 S. Monaco Pkwy. Ste 77  
Denver, CO 80224**

**Phone or Fax: 303-377-0711**

**e-m: paulnotari@cs.com**

**Editor:** Paul Notari

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### CRES MEETINGS

*Unless otherwise specified, CRES meetings will be held at the NREL Visitor's Center at 5:30pm.*

**October 29** (originally scheduled for October 22)...**General Meeting** - Joe Bourg, President of Millennium Energy, LLC will be the featured speaker. Refer to page 1 for details.

**November 19 - General Meeting.** Attorney Ron Lehr and NREL wind energy expert, Brian Parsons, will be our guest speakers for the meeting.

### CRES "HOTLINE"

**303-806-5317**

### CRES INTERNET NOS.

e-mail: [info@cres-energy.org](mailto:info@cres-energy.org)

Web Pg: <http://cres-energy.org>

# RENEWABLE ENERGY BRIEFS

**Innovative PV System Installed in Northern California ...** Marin County, California, has contracted RWE SCHOTT Solar, Inc. and its subcontractor, Prevalent Power, Inc., to build a roof top PV system on its main General Service Garage. This is part of Marin County's program to reduce energy requirements through a series of energy saving programs ranging from improving heating and air conditioning systems to introducing new distributed energy systems requiring little or no power from the grid.

The system currently being installed is a rooftop 89kW photovoltaic array that will provide enough electricity to reduce the facility's bill to almost zero. The system is mounted directly on the garage's flat roof without any penetration. The modules are linked for maximum life and stability and the system is expected to pay for itself in about 13 years.

**Revolutionary New PV Cell Technology Announced...** ST Microelectronics, Europe's largest semiconductor maker, announced last week that it had discovered new ways to produce solar cells which will generate electricity "twenty times" cheaper than today's solar panels. The company said that by the end of next year, it expects to have made the first stable prototypes of the new cells, which could then be put into production.

The company explained that today's solar cells are produced with high grade silicon, the same material that is widely used for most semiconductors and therefore is very expensive. The French-Italian company plans to use cheaper organic materials such as plastics to bring down the price of their cell considerably. They claim, "over a typical 20-year life span of a solar cell, a single produced watt using their cell should cost as little as \$0.20 compared with the current \$4.00. This would allow PV power generation to easily compete with fossil fuel plant electricity generation which costs about \$0.40 per watt.

**Wind Power on the Rise in Lone Star State...**

Texas, long known as the land of fossil fuels, is now looking to become a leader in renewable power by investing heavily in wind energy. The state is already the second-largest wind energy producer in the country, second only to California. In the last three years, Texas has upped its wind-power capacity from under 200 to over 900 megawatts, or enough to power about a half-million homes. The state plans to see that number climb to 2,000 MW by the end of the decade, and optimists say that it could go much further than that, to as many as 10,000 MW or more. This would be considerably less than the 77,000 MW generated by coal, oil, natural gas, and nuclear power in the state, but it would be substantial. And with the state legislature offering tax breaks and credits for clean energy, the 10,000 MW projection could easily become a reality.

**Denver Hosts National Hydrogen Education Meeting...**

Energy experts launched a national Hydrogen Education meeting in Denver on October 8. Three hydrogen-powered Ford cars were displayed to promote the most abundant element in the universe as a clean alternative to gasoline and diesel fuel. The meeting was organized by HydrogenWorks, a new Denver company that aims to promote acceptance of hydrogen as a clean, alternate fuel for cars and trucks.

The meeting, which featured daily tours of various exhibits and public education sessions at the Colorado Convention Center, ran from October 8 through October 12. On Friday, students, teachers and other educators were admitted free. On the opening day, Richard Truly, head of the National Renewable Energy Laboratory, gave a revealing talk on the subject of hydrogen's future as a safe, efficient alternative for gasoline in vehicles. He warned, however, "the challenge of introducing hydrogen as a routine, commercial, publicly used product is one of the most complex tasks faced by energy experts."

**Colorado Renewable Energy Society  
P.O. Box 933  
Golden, CO 80402**

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