



CRES NEWS

Newsletter of the Colorado Renewable Energy Society

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A Chapter of the American Solar Energy Society

APRIL 2005

CRES/Sierra Club to Hold Joint Meeting for April

Huge Growth Forecast for Renewable Energy Technologies

Markets for solar energy, wind energy, and fuel cells are poised to grow from \$16 billion in global revenues in 2004 to more than \$100 billion by 2014, according to a report released last month by Clean Edge, Inc., an energy research and publishing firm. By its projections, markets for solar PV (modules, system components, and installations) will grow from \$7.2 billion in 2004 to \$39.2 billion in 2014. Last year alone, according to PHOTON magazine, worldwide photovoltaic cell production reached 1,256 MW, a 67 percent increase over the 750 MW output in 2003. New wind power installations are expected to expand from \$8 billion in 2004 to \$48.1 billion in 2014. And fuel cells and distributed hydrogen are projected to grow from \$900 million (spent mainly on research and development) to \$15.1 billion over the next decade.

In addition, as reported by the Renewable Fuels Association, the ethanol industry produced more than 3.4 billion gallons of ethanol in 2004, up from 2.81 billion gallons in 2003. Currently, 82 ethanol plants are in operation nationwide and have the capacity to produce 3.5 billion gallons annually. Furthermore, there are 16 ethanol plants under construction with a combined annual capacity of 750 million gallons. Also a relatively new fuel, biodiesel, is fast becoming popular as a replacement for regular diesel fuel. Most predictions are that biofuels production overall will increase at least sixfold over the next decade.

To further illustrate the potential growth market for PV, a report just issued by the Energy Foundation titled *PV Grid Collected Market Potential Under a Cost Breakthrough Scenario* (available at www.ef.org) describes the vast market potential for rooftop solar PV systems in the United States. The report concludes that rooftop space is not a constraining factor for solar development as some have suggested. In fact, residential and commercial rooftop space in the U.S. could accommodate up to 710,000 MW of solar electric power if all rooftops are fully utilized. For comparison, total electricity-generating capacity in the U.S. today is about 950,000 MW.

And most observers believe that these projections are conservative. China, for example, has unveiled plans that could result in up to 100 gigawatts of new renewable energy output by 2020. And Germany's generous feed-in tariffs have already made that country's demand for photovoltaics so large that it has led to serious module shortages around the world. Japan is also boosting its sales and installations of photovoltaic and solar hot water systems substantially. And several U.S. states, such as California, New York, and even Colorado, have launched new aggressive clean energy initiatives that assure rapid growth of renewable energy in their states.

With little doubt renewable energy is beginning to "take off" all over this country and the rest of the world. This should be most encouraging to everyone involved in the business who have been waiting so long for this to happen. Everybody "hold onto your hats," we're on the move!

Our April CRES monthly meeting topic and location has been changed. This month we will be teaming with the Sierra Club in welcoming Roger Duncan, Austin Energy's Assistant General Manager to speak at a joint meeting for both organizations. The meeting will be held on **Wednesday, April 27 from 6:30pm to 8:00pm** at the **Denver University Boettcher Auditorium**, 2050 E. Iliff Ave., Denver. (see map at www.du.edu/maps/boettcher.html).

Duncan's topic will be *Denver's Energy Future and How Austin, Texas has Done it Right*. He will be followed by Rick Gilliam, Senior Advisor, Western Resource Advocates who will discuss Denver's upcoming "franchise" agreement with Xcel Energy and Denver citizens need to know about energy efficiency and renewable energy in the City of Denver.

Roger Duncan's presentation will focus on how Austin nixed a coal-fired power plant, helped the environment, saved residents money, kept the lights on and provided a strong economy through innovative energy efficiency and renewable energy programs.

Denver's 20 year energy contract with Xcel Energy comes up for renewal and vote in 2006 and this is the opportunity for our RE community to move sustainability issues forward in the public eye.

Additional event sponsors include the University of Denver Natural Resources and Environmental Law Society, and the EnviroCitizen organization. Dave Bowden's presentation, originally slated for this month's meeting, will be rescheduled for a later date and will be announced in a forthcoming issue of CRES NEWS.

Colorado Snap Shots

This column will feature meeting dates, short news items, personality profiles and other energy matters relevant to Coloradans.

CALENDAR OF LOCAL EVENTS

April 21-22... NREL Education Days. This event replaces the "NREL Career Fair " announced in the last issue of CRES News. The purpose of this event is to help encourage greater student participation in mathematics, science and engineering. A number of private and public organizations will exhibit their services and share information with teachers and students who will be invited from local schools. *Venue:* NREL Visitor's Center. For further information contact Jim Bosch at 303-384-6567 or james_bosch@nrel.gov. (If you wish to help out, contact Ron Larson at 303-526-9629 or ronallanson@quest.net).

April 23-24... Colorado Straw Bale Annual Conference. Features speakers who will discuss various topics related to straw bale buildings. *Venue:* Waldorf School, Carbondale, Colorado. Seating is limited. For further information contact Mark Schueneman at 303-444-6027 or markschu@ix.netcom.com.

April 27-29... Denver Green Building Conference. The theme of the conference is *Focus on Mixed-Use and Commercial Development*. Offers developers, real estate professionals, architects, designers, engineers, and builders a chance to learn about green building applications. *Venue:* Belmar Center, Wadsworth Blvd. and Alameda Ave.; Lakewood, Colorado. For further information visit www.denvergreenbuilding.com.

April 29-30... Solar & Radiant Heating Design Workshop. An intensive training program on how to design and install solar and radiant heating systems. *Venue:* Solar Energy International Headquarters; Carbondale, Colorado. *Fee:* \$495. For further information call 970-963-8855 or visit www.solarenergy.org/workshops.

May 14... CESC Workshop: Resolving Energy, Economic, and Environmental Challenges. *Time:* 9am - 4pm. *Venue:* Park Lane Party Room, 460 S. Marion Street Parkway, Denver, Colorado. *Fee:* \$35 (\$20 members). See insert flyer for full details.

CALL FOR CRES BUILDING AWARD ENTRIES

CRES is seeking entries for its 2005 Renewable Energy and Sustainable Design in Buildings Awards. The awards will be presented at the CRES Conference, June 9 - 11, 2005 in Fort Collins. Media releases announcing the award winners will go to all local media outlets as well as to the building trade press. In addition, the winning entries will be highlighted in the *ASES Solar Today* magazine. Awards will be given in several areas under two main categories; Residential and Non-Residential. For full details and entry forms, visit the CRES web site at www.cres-energy.org.

CALL FOR CREC VOLUNTEERS

The annual conference of the Colorado Renewable Energy Society is organized by an all-volunteer team. For this reason we need enthusiastic people to help out in carrying out a number of tasks before and during the conference. This year the conference is being held in Fort Collins (see notice on page 4). We would like as many locals as possible to volunteer although we will have many opportunities for members in Denver and surrounding areas to help out as well. If you are willing to give us a helping hand before and/or during the Conference please contact Charlie Stevens at 720-333-0134.

CU Enters 2005 National Solar Decathlon

The University of Colorado will defend its 2002 Solar Decathlon title with an innovative new design for its 2005 entry. The 2005 national competition, sponsored by the U.S. Department of Energy, will be the first since the original 2002 event.. The CU solar building entry will feature a new patented structural insulated panel system utilizing curbside wastepaper and soy. The system called Bio-SIPS is based on CU Professor Julee Herdt's work with the Department of Agriculture's Forest Products Laboratory in Madison, Wisconsin.

CU is one of 20 university teams selected to compete in the international competition to design, build and operate a solar-powered home on the National Mall in Washington D.C. The 2005 Solar Decathlon, which will be held October 6-15, is cosponsored by NREL, the American Institute of Architects and Home Depot. About 30 undergraduate and graduate architecture and engineering students are collaborating on the project with Julee Herdt of the School of Architecture and Michael Brandemuehl of the School of Engineering acting as Advisors.

Announcing the New Larson-Notari Award Nominations Due May 1

The Larson-Notari Award is named in honor of Dr. Ronal Larson and Paul Notari, the two most active founding fathers of the Colorado Renewable Energy Society. The primary requirement is that the winner (a person, not an organization) has made a significant contribution to the Society or to the fields of renewable energy, energy efficiency, and sustainable buildings. The award winner will be announced at the CRES Conference in Fort Collins. For more details and to download the nomination application form please visit our website: cres-energy.org.

This award has been made possible thanks to a generous donation made by Pieter van der Mersch (a resource-conservation advocate since the early 1970s) and his wife, Martha.

Editor's Note: Ron Larson and I (Paul Notari) are deeply honored to have this most prestigious award identified with our names. And we are especially grateful to Martha and Pieter van der Mersch for recommending us for this honor and for funding this award.

CRES CORNER

Greetings!

First, I'd like to announce that Robin Hubbard, formerly on the organizing campaign for A37 with Environment Colorado, has accepted a position as the CRES Director of Development to pursue new funding opportunities for CRES. Robin resigned from the ASES Board to take the position and Jeff Scott of Solsource, Inc. has taken Robin's place on the Board.

I'm also pleased to announce the formation of two new committees that have developed through the strategic planning process. The CRES Education Committee (formerly part of the Media committee) chaired by Doug Seiter (dlseiter@comcast.net) will focus on expanding CRES's educational role through a speakers bureau, website education, and more. The CRES Liaison Committee chaired by Kimberly Peterson (kimberly_peterson@yahoo.com) will focus on coordinating amongst the scores of other environmental organizations in Colorado. They need volunteers to get their committees off the ground so please contact them if you are interested.

This is the month to nominate both buildings and people for awards – the new Larson-Notari award and the CRES Buildings awards are both due at the end of this month. The new Larson-Notari award, to honor our two most active CRES founding fathers, will recognize leaders (not buildings, not organizations) in the renewable energy and energy efficiency field. The annual CRES Building Award is for recently built buildings that go above and beyond the typical building in terms of energy usage, renewable energy, and sustainable design. Nomination forms are available on our web site: <http://www.cres-energy.org>. Please take a few minutes out of your day to provide nominations for these awards.

At our March Public Meeting, Dave Renné presented on a very interesting subject – the national and international resource for renewable energy sources. We would need 25,000 km² of photovoltaics to meet all of our US electric demands compared to 100,000 km² of existing hydroelectricity which only meets 7% of our electric demands. Sounds like we don't have to worry about running out of renewable sources of energy anytime soon!

The appliance efficiency bill and a gas demand side management bill have passed the Senate and the House and are now on the Governor's desk for approval. Also, the CRES Board endorsed a new bill, SB208, sponsored by Senator Gordon to require all new and major renovations of state-owned and state-funded buildings to be LEED registered. HB1129 on a solar tax credit will likely need to wait until next year, as will all state tax credit proposals, due to Colorado's complicated fiscal mess, in part caused by the TABOR Amendment.

The PUC has drafted proposed rules to implement A37. Written public comment on these rules is very important to ensure that the rules benefit a sustained orderly development of photovoltaics in Xcel Energy and Colorado Aquila's service territories. The first round of comments is due on May 14. Public hearings in front of the three Commissioners are scheduled for July 11-14. See <http://www.dora.state.co.us/puc/rulemaking/Amendment37.htm>

The 500 MW Xcel wind RFP is encountering turbulence. What started out at 500 MW is apparently now down to 129 MW. Some of the decline may be attributable to higher turbine costs caused by the "land rush" due to the expiration of the federal production tax credit on December 31, 2005. But there may be other issues in the negotiation that is causing the problem. A second round of opportunity exists in Xcel's All Source Bidding. However, the wind industry is running out of development time to fit within the federal production tax credit time frame. Please contact your local Xcel representative to request an explanation of what is happening.

I hope you all consider going to the CRES conference this year Fort Collins at the Lincoln Center. Save the dates – June 9th through the 11th. Also, I hope to meet more of you at our public meetings and events - so come introduce yourself!

Cheers, Renée Azerbegi, CRES President

CRES NEWS

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CRES MEETINGS

Unless otherwise specified, CRES meetings will begin at 5:30pm and be held at the NREL Visitor Center located off the Denver West exit of I-70, just past the Marriott hotel.

April 27 - General Meeting. The guest speaker will be past CRES President, Dave Bowden. See page 1 for details.

May 25 - General Meeting. The guest speaker will be Mike Pacheco, Director, NREL Biomass Program

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303-806-5317

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RENEWABLE ENERGY BRIEFS

CRES President Forms New Company... Renée Azerbegi, 2005 CRES President, has announced that she has resigned from her position with the RMH Group to form her own company, *Ambient Energy, Inc. Solar and Sustainable Design Solutions*. The new company will provide consulting services for green building design or retrofit projects and educational services. For further information visit www.ambient-e.com.

Local Solar Scientist Given Prestigious Honor... Dr. Lawrence Kazmerski, Director of the National Center for Photovoltaics at NREL has been elected a member of the National Academy of Engineering. Academy membership is most exclusive and reserved only for those who have performed outstanding service in engineering sciences. Kaz, who has often spoken at ASES and CRES events, is known around the world for his leadership in solar energy research. "NREL, DOE and the nation are fortunate to have such a talented and tireless researcher who has devoted his life to this important work" said David Garmin, DOE Assistant Secretary for Energy Efficiency and Renewable Energy. Dan Arvizu, NREL's new Director, said "Kaz isn't just a leading light for the discipline of engineering, he's become a veritable institution in the field of solar energy. CRES offers its congratulations to a true stalwart in the field of solar energy research and a close friend of ASES and CRES.

Sister State Elects to go Solar... By unanimous vote the New Mexico legislature has passed HB 32, the *Energy Efficiency and Renewable Energy Bonding Act*. The bill will allow the state to sell \$20 million in bonds to fund solar and energy efficiency retrofits for state-owned buildings and schools for projects that pay for themselves through energy savings. According to an analysis by the New Mexico Energy, Minerals and Natural Resources Department, the \$20 million bond issue for solar and energy efficiency could result in utility savings of \$46 million over the 20-year life span of the bond.

Still in play in the New Mexico legislature are bills that would pave the way for greater solar development in the state, notably an increase in the net metering standard (HB 200/SB 1006) and a tax credit for renewable energy (HB 121/SB 334).

New Online Master's Program in Environmental Management Now Offered by Duke University... Environmental executives now have an opportunity to earn a Master of Environmental Management from their desktop. Duke University has now created the Duke Environmental Leadership Master of Environmental Management degree, an innovative, two-year program dedicated to the diverse needs of business executives and professionals in the environmental field. The program blends theory with practical experience. View the online program at www.nicholas.duke.edu/del.

Mark Your Calendar - Sign up to Help
The 8th Annual Colorado Renewable Energy Conference
Renewable Energy: Power for Sustainable Communities
June 9 - 11, 2005 Lincoln Center, Fort Collins Colorado

The conference will feature exhibits, educational sessions, and hands-on workshops directed toward renewable energy professionals and advocates, home owners, business owners, and local leaders. An address by a representative of the *Apollo Project* and a *Consumer Day/CRES Highlights* presentation will be open to the public and held on Friday, June 10th. To volunteer or to learn more about the conference, as well as exhibiting and sponsorship opportunities, contact **Sheila Townsend at 303-279-1446**.