



The Solar Flare

e-Bulletin from the Minnesota Renewable Energy Society
February 2010

Special 30th Anniversary Celebration Issue

Member & Board Meeting

February 2010 Member & Board Meeting

Thursday, February 11, 2010

5:30 PM – Pizza and Networking

6:00 PM – Guest Speaker Presentation

7:00 PM – Board Meeting

New Location:

UAW-Ford-MnSCU Training Center

966 South Mississippi River Boulevard

St. Paul, Minnesota 55116

Phone: 651.696.0557

Map (Location of Parking Entrance):

[Ford Parkway and So. Mount Curve Blvd.](#)



Guest Speakers: Bryan Horvat and Alan Jacobs from The Solar Vehicle Project

The [Solar Vehicle Project](#) is a student organization at the University of Minnesota (U of M) that completely designs and builds a solar car every two years to race in the biennial North American Solar Challenge. Right now, the team is busy constructing the newest solar car, Centaurus II, which will race this summer. The presentation includes a history of solar car racing at the U, current build status for our next car, fabrication techniques, and the solar cells we use, power trackers, battery protection and motor control.

NEW Meeting LOCATION!



U of M Solar Vehicle



UAW-Ford-MnSCU Training Center

Map Link: Enter parking lot at [Ford Parkway and So. Mount Curve Blvd.](#)



University of Minnesota Solar Vehicle Project Team

Solar Flare Highlights - (Click on link below to see details in the following pages)

Upcoming Events

- February 2010 Member and Board Meeting - February 11
- ***MRES 30th Anniversary Celebration Gala and Symposium*** - February 19
 - Xcel Energy - Taking Climate Action - p. 7
 - CERTs - Helping Minnesota communities determine their clean energy future - p. 8
 - Stoel Rives - Pioneer in Renewable Energy Law - p. 9
 - Gustavus Programs Collaborate to Help MRES deliver Gala and Symposium - p. 9

Upcoming Classes & Workshops

- Solving Renewable Energy Application Problems - February 9
- Everything You Always Wanted to Know About Photovoltaics - February 13
- Everything You Always Wanted to Know About Solar Water Heating - February 27
- ReUse-Energy Workshop on Window Rehabbing - March 4
- Workshop on energy efficiency and green living for first time homeowners - March 24
- Careers in Renewable Energy - March 13
- Starting and Growing a Solar Business - April 22 & April 29

News

- Minnesota Rebate Funds for Solar - p.15
- Xcel Energy Plans for Solar Rewards - p. 15
- FERC Explores Efficient Integration of Renewables into the Grid - p.16
- A Utility Perspective on Feed in Tariffs - p. 17
- MRES 30th Anniversary Committee: Workin' Hard - p. 17
- The Great Manufacturing Get Together - p. 18
- ***MRES Member & Board Meeting Moving to UAW-Ford-MnSCU Training Center*** - p. 19

Renewable Energy Careers and Networking

- MRES Hosts Green Drinks - p. 20
- Rent Solar Trailer, Solar Cart, or Solar Pathfinder - p. 21

Upcoming Events

MRES 30th Anniversary Celebration Gala and Symposium – February 19th, 2010

Location: [Crowne Plaza Hotel](#)

Address: 11 East Kellogg Boulevard

St. Paul, Minnesota 55101

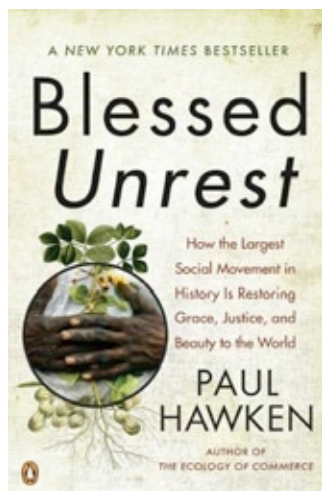
www.MRESgala.org

We have big plans for our celebration! Celebrate a year of accomplishments and join with us as we take a retrospective look at a number of milestones in our history and layout our vision of unity of purpose for the future. There will be fun for all at this festive event. During the evening we will commemorate our 30th anniversary and inaugurate our 4th decade of public service.

The aim of our [30th Anniversary Gala and Symposium](#) is both to celebrate 30 years of accomplishments and to create progressive dialogue around the challenges we face as a society; and, from this platform, to launch the next 30 years -- during which society must address these formidable problems. To achieve our aim, we will join in partnership with a diversity of organizations to share the work of creating synergistic solutions to severe energy, climate, security, natural resource, economic and social problems, and to work for a better and more sustainable world.



Paul Hawken



Keynote speaker, [Paul Hawken](#) is an environmentalist, entrepreneur, journalist, and author, dedicated to sustainability and changing the relationship between business and the environment since age 20. He has appeared on the Today Show, Larry King, Talk of the Nation, Charlie Rose, and has been featured in hundreds of articles including the Wall Street Journal, Newsweek, Washington Post, Business Week, Esquire, and US News and World Report; written for Harvard Business Review, Christian Science Monitor, Mother Jones, Utne Reader and over a hundred other publications. His most recent books include *The Ecology of Commerce* (voted the No. 1 college text on business and the environment by professors in over sixty-seven top business schools), *Natural Capitalism: Creating the Next Industrial Revolution*, co-authored with Amory Lovins (named one of the five most important books in the world today by Bill Clinton), and

Blessed Unrest: How the Largest Social Movement in History Is Restoring Grace, Justice, and Beauty to the World. His books have been published in over 50 countries in 27 languages and have sold over 2 million copies. As a speaker, he has given over a hundred keynote and commencement addresses all around the world, to royalty, heads of state, major colleges and universities and countless organizations. He has earned extensive recognition and many awards including five honorary doctorate degrees.

You will not want to miss this evening of fun as we launch the theme: *Working together in this Blessed Unrest: Creating the next steps to a sustainable society*.

The gala celebration will also recognize and highlight the winners of our First Annual Excellence in Renewable Energy Awards Program. We hope you will join us for this amazing evening.

Dinner & program ticket price: \$55 for members and \$85 for non-members. A Table for ten is \$700.

Tickets are on sale until February 17th at 9:30 a.m. [Buy gala Tickets online Now!](#)

[Don Shelby](#), WCCO 4 TV News anchor, will be the *Master of Ceremonies* at the evening gala. Don Shelby has anchored the WCCO 4 News at 10:00pm since 1985. He has won all five of the nation's top journalism awards, many of which he has won multiple times. These include three national Emmys, the Columbia-duPont Citation, the Scripps-Howard Award for Excellence, two George Foster Peabody Awards (the broadcast equivalent of the Pulitzer Prize) and the Society of Professional Journalist Distinguished Service Award. In May 2007, Don was honored with a Leadership Award by Conservation Minnesota, for his creation of WCCO TV's Project Energy.



Don Shelby

MRES 30th Anniversary Celebration Gala and Symposium – February 19th, 2010

Afternoon Symposium

“The Way Forward: Cooperation and Collaboration in the Age of Climate Shift”

In a panel format, speakers from several groups with diverse points of view on energy and climate will offer their views on imaginative, longterm-thinking-based ways for organizations to interface and to work together on the overarching environmental issue of our times. Following the panel presentation (about an hour), the floor will be open for interaction between audience and panel members. Creative, innovative, out-of-the-box ideas for interactions among groups -- including heretofore unseen combinations of groups with different foci -- are strongly encouraged.

Symposium speakers include **Eric Utne** - Founder of Utne Press and Senior Fellow at Center for Spirituality and Healing, **John Harmony** - Director of the Center for Sustainable Building Research, **Michael Noble**, Executive Director of Fresh Energy, **John Carmody** Director of the Center for Sustainable Building Research at the U of MN, Minnesota Rep. **Melissa Hortman** (District 47B), **Duane Ninneman** founder Sage Research and Consulting, and **Siri Simons**, U of MN student. The [symposium](#) is moderated by former MRES boardmember **Christopher Childs**, author of “The Spirit’s Terrain: Creativity, Activism, and Transformation” (Beacon Press, 1998). The symposium is **free** and open to the public. Check-in at 1:30 p.m. in *Governors Hall* at the Crowne Plaza Hotel, St. Paul, MN.

30th Anniversary afternoon and evening (Feb. 19) events schedule at the Crowne Plaza Hotel:

- 2:00 to 4:00 pm Afternoon [Symposium](#) with prominent guest speakers in *Governors Hall*
- 3:00 pm Exhibits Open in Garden Court
- 4:30 pm Doors Open for Early Registration for gala activities in the Garden Court
- 5:00 pm Cocktail Hour, *Meet & Greet* (by invitation only) with [Paul Hawken](#), Silent Auction, Electric Vehicle Raffle Tickets on sale, and Poster Contest winners on exhibit
- 6:00 pm Begin Registration for [Gala Celebration](#) – Table assignments
- 7:00 pm Announcements and Welcome from [Don Shelby](#) in the [Great River Ballroom](#)
Dinner - Accompanied by music from [Michael Monroe](#)
- 8:00 pm Message from MRES Chairperson and remarks from Guest Dignitaries
- 8:15 pm Video – MRES 30th Anniversary
- 8:30 pm Keynote speaker introduction and Keynote Address by Paul Hawken
- 9:00 pm Awards Presentations
- 9:40 pm Raffle Winner Announced
- 9:45 pm Closing Remarks – with Guest Dignitaries
- 10:00 pm Silent Auction Winners’ Pick-Up
- 10:00 pm to 1:00 am Networking, Mingling, and Cash Bar

This schedule is subject to change, so please [check the MRES website](#) for updates.

Musical entertainment by [Michael Monroe](#)

GRAND MARAIS, Minn. – Michael Monroe lives in his log cabin and records his music on the North Shore of Lake Superior in his solar powered MisTree Studio. Performing his original acoustic folk, reggae and jazz music, he blends his rich vocals, acoustic MIDI guitars, bamboo and crystal flutes by recycling his award winning music “live” using electronic technology that’s energized by his creativity.

His unique musical creations leave his audiences mesmerized as he samples and mixes his guitar, bamboo and glass flute with rich voice live to seamlessly accompany himself while on stage using his “live” layering/looping technique.

“Plugged into the sun,” and “Fully at peace with his subtle, yet expressively powerful, delivery” about his music and life in the woods - Duluth News Tribune.

“Monroe, a rich-voiced eco-folkie, played all the instruments on this touching hymn to nature... A work of art straight from the heart” - Star Tribune.

“With heartfelt sincerity and a poetic touch in both the lyrics and music, Monroe explores subtle, quiet places that spark the imagination” - City Pages.

He performs on Seaton Acoustic Guitars made on the Gunflint Trail and recycled from rare North Shore woods including 200 year old salvaged wood from the bottom of Lake Superior. The guitars have names such as Snow Leopard, Soibahn and Flamenca Del Rosa.

Monroe’s soundtrack is featured on National Geographic photographer Jim Brandenburg’s “Chased By the Light” documentary on PBS and globally, for which he received several national awards as well as was shown at the Toronto Enviro and New York Indie Film Fests. Monroe received a regional Emmy for his documentary theme “Soaring On Mended Wings” and he has shared the stage with Michael McDonald, Paul Williams, Bernie Leadon (Eagles), Kathy Mattea, and Shawn Phillips.

Featured on MPR’s Morning Show, KARE 11 and Jason Davis’ ON THE ROAD, he has recorded 2 vinyls and 9 CDs using solar power with his most recent CD in 09, “LIVE at The Cedar.”

Michael’s original music and compelling energy bring a powerful style that is as much fun as it is innovative music and technology working together powered by creativity. Check out [Michael’s music on MySpace](#). More samples of Michael’s performances: [on YouTube](#).

Michael Monroe will perform during the evening at the MRES 30th Anniversary gala of February 19th at the Crowne Plaza Hotel, Great River Ballroom, in St. Paul.

Visit his website: www.michaelmonroemusic.com



Michael Monroe
Photo by Diane Weber



Michael Monroe
Photo by Jim Brandenburg

MRES 30th Anniversary Celebration Gala and Symposium – February 19th, 2010

Electric Scooter Raffle and Silent Auction

Win an Electric Scooter!

Commute and tour emission free! Raffle Tickets will be on sale at the [MRES gala](#) for an eGO Cycle 2 LX electric scooter. Check our website for updates for more cool stuff: www.MRESgala.org

eGO Cycle 2 LX

The eGO LX electric scooter is designed for daily commuters and errand runners who will be driving in moderate to heavy traffic. The LX is fully equipped for registration in any state and includes front and rear turn signals, left grip lighting, turn signal and horn controls, backlit speedometer/odometer. The eGO is built on an anodized aluminum chassis and delivers 20 - 25 miles of range at a top speed of 24 miles per hour.



e-GO Cycle 2 LX

Silent Auction

Silent Auction items will be open for bid, beginning at 5:00 p.m. on February 19th at the gala. The following items have been donated by generous contributions from businesses and individuals in our community. We would like to thank them for their contribution to help raise money for the Minnesota Renewable Energy Society. We would, of course, love any additional donations! You may make donations for the Silent auction by contacting Laura Cina at LauraC@mnRenewables.org or on the gala [Silent Action webpage](#).

- Turtle Island Health Center has donated three New Patient Orientations, each include a chiropractic adjustment and an acupuncture treatment.
- Dale Studios has donated a \$200 gift certificate for their Eden Prairie Photography Studio.
- Artist Sarah Ruehmann has donated a painting.
- Christopher Childs has donated six signed copies of his book, Spirits Terrain.
- Fifty Lanterns has donated a Solar Flashlight, a "Solar Sisters" T-shirt and Guatemalan Coffee.
- Muffelleita has donated a \$50 Gift Certificate for their restaurant.
- Fire Roast Mountain Cafe has donated a Gift Basket worth \$50.
- Christy Branham Collage Jewelry has donated jewelry that can be customized for the customer after the auction.
- Seward Co-op has donated a \$25 Gift Certificate.
- Natural Built Homes has donated a Hand Crank Flashlight, low-flow faucet caps and a low-flow showerhead.
- Do It Green has donated a Collectors Set of their past four magazines.

Xcel Energy - Taking Climate Action



MINNEAPOLIS – [Climate change](#) is an increasingly important issue in this country and around the world. To address this concern, U.S. lawmakers have stepped up efforts to regulate greenhouse gases. At the federal level, it is a presidential and congressional priority, and at the state level, there are 36 U.S. states today with climate policies and 29 with renewable portfolio standards. From the regulatory side, the U.S. Environmental Protection Agency is working to regulate greenhouse gases under the Clean Air Act. Xcel Energy along with others in the utility industry believe that within the next few years, greenhouse gases will be regulated.

At Xcel Energy, the fossil fuels used to make electricity emit greenhouse gases, primarily carbon dioxide. Rather than waiting for regulation, Xcel Energy is reducing greenhouse gases today. Its customers, communities, shareholders and employees expect them to take action. Through past experience, Xcel Energy knows that taking early action and voluntarily reducing emissions is a better way to manage costs, which ultimately benefits everyone.

Xcel Energy believes [climate policy](#) should be designed to maximize environmental benefit and minimize consumer costs. Xcel Energy favors a federal policy as a more effective way to achieve large-scale greenhouse gas reductions, rather than individual state or regional policies. And a flexible, well-designed federal policy is the best option to reduce emissions, manage costs and achieve technological transformation. Xcel Energy believes that to significantly reduce greenhouse gas emissions, they will need to develop advanced, clean-energy technologies. Although other policy designs may be effective, Congress is focused on creating a national cap-and-trade program for greenhouse gases. A properly designed cap-and-trade program should provide for the kind of flexibility and innovation that encourages technological development.

Climate policy should:

- Minimize customer costs and maximize environmental benefits;
- Recognize and reward utilities for early reduction efforts;
- Encourage the development and deployment of clean-energy technologies;
- Provide flexibility and reasonable cost-containment mechanisms; and
- Avoid becoming the equivalent of an additional tax on energy production and consumption.

Xcel Energy has engaged with policymakers, energy providers, the environmental community and others to discuss our climate policy principles. Mandatory climate policy could transform our business, but this technology transformation will not be free. Xcel Energy anticipates rising costs as we continue to provide reliable service while steadily reducing CO2 emissions.

Part of Xcel Energy's effort to develop clean-energy technologies is the launch of Minnesota Solar*Rewards in 2010. The program will encourage the development of the state's solar industry installer and supplier community, while reducing the cost of installing photovoltaic systems for residential and commercial customers (see related story: [Xcel Energy Plans for Solar* Rewards](#), on [page 15](#)).

Xcel Energy is a member of the Edison Electric Institute (EEI), an association of U.S. shareholder-owned electric companies. EEI and its members have been working for more than two years to ensure climate change legislation protects electricity consumers.

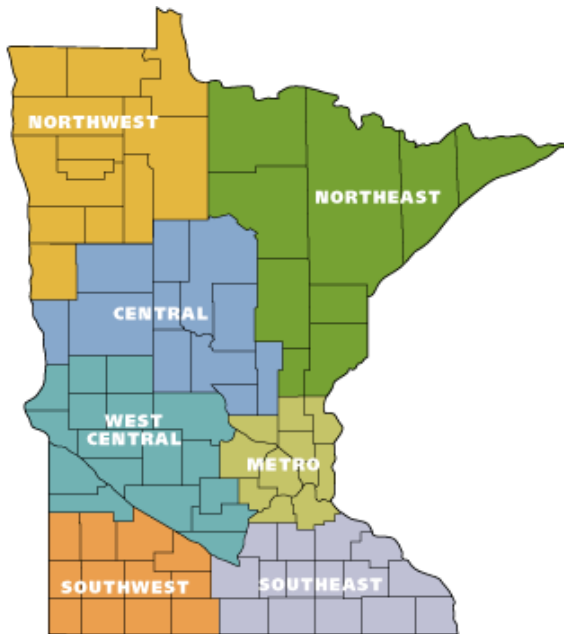
To learn more about Xcel and Smart Climate Policy go to: www.smartclimatepolicy.org/xcelenergy/

CERTs - Helping Minnesota communities determine their clean energy future

Minnesota – Project by project, community by community, people around the state are reshaping their energy future—by increasing conservation, integrating energy efficient design and technologies, and harnessing clean energy resources like wind, solar, biomass and biofuels. They are mobilizing their communities to take advantage of the myriad benefits community-based clean energy provides.



The Clean Energy Resource Teams (CERTs) project, launched in 2003, is connecting these people with the technical resources needed to identify and implement community-scale energy efficiency and clean energy projects.



CERTs Regions

Clean Energy Resource Teams are located in each of seven Minnesota regions: Central, Metro, Northeast, Northwest, Southeast, Southwest, and West Central. To learn more about each region and how you can get involved, go to the [CERTs website](#).

You can be part of making it happen! The Clean Energy Resource Teams are diverse—individuals, small business owners, farmers, members of environmental groups, local utility representatives, teachers and academics, government staff and elected leaders—and all share common goals and values. They want strong communities, local jobs, and secure, clean, reliable energy.

The CERTs approach is one of pragmatism and cooperation. It's a model for how tangible economic, social, and environmental benefits can be achieved by reaching across traditional interest groups and taking a true, community-based approach.

Join thousands of Minnesotans working to make clean energy a reality! Minnesota has a wealth of passionate people working together to identify and implement clean energy projects across the state. CERT members find many ways big and small to make a difference in their communities.

Join CERTs to: Learn about clean energy technologies, projects & models. Connect with people in your community & beyond. Act to implement on-the-ground clean energy solutions

For more information about CERTs, go to: www.CleanEnergyResourceTeams.org

Stoel Rives - Pioneer in Renewable Energy Law

MINNEAPOLIS - Established in 1907, Stoel Rives is a pioneer among U.S. law firms serving the renewable energy industry. From its early involvement and support of organizations such as the American Council for Renewable Energy and the American Wind Energy Association, to its active presence as speakers at industry conferences, to its purchase of green tags to offset the emissions from their offices. According to independent researcher Chambers and Partners and based on thousands of client and lawyer interviews nationwide, the Chambers research team ranked the Stoel Rives renewable and alternative energy law practice in the ten best in the country for 2010.



Stoel Rives provides a broad array of legal services to developers, investors, utilities and project owners in the renewable energy sector. Clients turn to them because of their extensive experience in wind, solar, geothermal, bioenergy, and ocean and tidal energy. Stoel Rives can bring together the right team of lawyers for each project, whether it be permitting a wind farm or drafting and negotiating a power purchase agreement. They can guide you through transmission interconnection issues or compliance with state and federal regulatory requirements. Stoel Rives can assist with tax credits and other incentives, or handling the sale or purchase of renewable energy development assets and projects. The firm has more than 400 attorneys in 11 offices nationwide and ranks in the top 30 nationwide for the total number of lawyers listed in Best Lawyers in America®, with over 120 attorneys and 40 legal practice categories represented. In 2009, in-house counsel rated Stoel Rives among the nation's 30 Best Law Firms for Outstanding Client Service, in an independent annual survey conducted by The BTI Consulting Group. Visit www.stoel.com for more information, or read their blog at www.lawofrenewableenergy.com.

Gustavus Programs Collaborate to Help MRES deliver Gala and Symposium

ST. PETER, Minn. - Gustavus Adolphus College's [Environmental Studies Program](#), [Johnson Center for Environmental Innovation](#), and [Center for Vocational Reflection](#) have collaborated to become a Gold Partner at the [MRES 30th Anniversary Gala and Symposium](#).



MAKE YOUR LIFE COUNT

“Colleges should be leading the movement to transform society, not just teaching about it,” said James Dontje, the Johnson Center’s Director. Dontje stresses the importance of involving students and the St. Peter community in environmental initiatives. The center seeks ideas and support to enable students to participate in campus sustainability to improve society. “Gustavus does not exist in a vacuum and will need to work together with the community for sustainability,” said Dontje.



James Dontje

Their generous support and collaboration have helped make the symposium and appearance of Paul Hawken possible at the [MRES Gala](#) event on February 19, 2010 at the Crowne Plaza Hotel in downtown St. Paul. Paul Hawken will also speak to students and faculty on Thursday at Gustavus.

Every October, Gustavus hosts the [Nobel Conference](#), the first ongoing educational conference of its kind sanctioned by The Nobel Foundation of Stockholm, Sweden. Recent year’s Nobel conferences have included ‘Heating Up: The Energy Debate’ and ‘H2O Uncertain Resource’. The theme for the 2010 Nobel Conference at Gustavus is ‘Making Food Good’.

Gustavus Adolphus College is located 60 miles southwest of downtown Minneapolis and 10 minutes north of Mankato on U.S. Highway 169. Gustavus is a private liberal arts Lutheran-affiliated college on 340 picturesque acres in the heart of the Minnesota river valley.

MRES 30th Anniversary Celebration Gala and Symposium – February 19th, 2010

MRES Gala and Symposium Partners

We want to thank our Partners for helping us make the gala and symposium events possible.

Platinum Partners

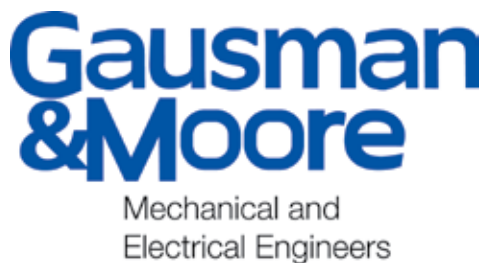


Gold Partners



MAKE YOUR LIFE COUNT

Silver Partners



MRES 30th Anniversary Celebration Gala and Symposium – February 19th, 2010

MRES Gala and Symposium Partners

We want to thank our Partners for helping us make the gala and symposium events possible.

Bronze Partners



DAVID B. BOYCE LAW OFFICE, PC

Exhibit Partners



Minnesota
STATE COLLEGES
& UNIVERSITIES



Classes & Workshops

Solving Renewable Energy Applications Problems

Tuesdays: February 9 - March 2, 2010

Century College

3300 Century Avenue N.

White Bear Lake, MN

Phone: (651) 779-3341

6:00 p.m. to 9:00 p.m.

Room: Century East Campus 1377



This 24-hour, eight-week course is for people who would like to improve their skills in being able to solve problems associated with the application of renewable energy technologies. Many situations arise in Renewable Energy applications where calculations have to be made in order to position or size a system, or to determine a correct answer. Examples are to determine the area that should be allotted to the collector for sizing a Solar Domestic Hot Water (SDHW) system or the distance that the array rows of a solar PV system should be separated to prevent shading in wintertime. Many other examples also arise in wind, biomass, transportation and conservation applications. These calculations require that the solver be familiar with the mathematical branches of algebra and trigonometry. This class will help you in a non-threatening way to improve your comfort level with these disciplines as applied to real life Renewable Energy applications. Students should have completed Math 0030 (Intro to Algebra) or equivalent, or speak with instructor before registering. The course fee is \$195.

Roger Aiken is the instructor for the class. He is one of the original MRES members, and Roger is a [CREED](#) workshop instructor and founder of CREED. Register on the [Century College course webpage](#) or call (651) 779-3341. Course ID: 002321

Solar Energy: Everything You Always Wanted to Know About Photovoltaics

Saturday: February 13, 2010

Century College

3300 Century Avenue N.

White Bear Lake, MN

Phone: (651) 779-3341

9 a.m. to 3:45 p.m.

Room: Century East Campus 2313



Century College and the Minnesota Renewable Energy Society have co-developed this one-day introductory course for homeowners and people interested in learning the basics of how to design a solar photovoltaic (PV) system for residential applications.

The essentials of creating electricity from sunlight are covered. You will learn to evaluate solar site resource, when solar PV is the right solution, the economics and incentives for solar PV, and system design principles. System components, system sizing, PV panels, inverters, grid connected vs. non-grid connected systems, electrical connections, will be all explored.

Ralph Jacobson, a 25 year veteran of solar system installations, is the course instructor. He is a materials engineer, NABCEP certified in both solar PV and solar thermal installation. Ralph is currently involved in developing a strategy for growing the solar industry in Minnesota and developing training programs for the building trades. He is also on the Board of Directors of the Minnesota Renewable Energy Society and the owner of [Innovative Power Systems](#). Course ID: 001978

People interested in taking the solar PV course may **register** on the [Century College website](#).

Solar Energy: Everything You Always Wanted to Know About Solar Water Heating

Saturday: February 27, 2010

Century College

3300 Century Avenue N.

White Bear Lake, MN

Phone: (651) 779-3341

9 a.m. to 3:45 p.m.

Room: Century East Campus 2313



Century College and the Minnesota Renewable Energy Society have co-developed, this one-day introductory course for homeowners and people interested in learning the basics of how to design a solar hot water heating system for residential applications.

The essentials of creating domestic hot water from the solar radiation are covered. You will learn to evaluate solar site resource, when solar hot water is the right solution, the economics and incentives for solar hot water, and system design principles. System components, system sizing, solar thermal panels, storage tanks, heat exchangers, and plumbing connections, will be all explored.

Ralph Jacobson, a 25 year veteran of solar system installations, is the course instructor. He is a materials engineer, NABCEP certified in both solar PV and solar thermal installation. Ralph is currently involved in developing a strategy for growing the solar industry in Minnesota and developing training programs for the building trades. He is also on the Board of Directors of the Minnesota Renewable Energy Society and the owner of [Innovative Power Systems](#). Course ID: 001979

People interested in taking the solar thermal course may **register** on the [Century College website](#).

ReUse-Energy Workshop on Window Rehabbing

Thursday, March 4, 2010 - 6 to 8 pm

and

Workshop on energy efficiency and green living for first time homeowners - Thursday, March 24, 2010 - 6-8 p.m.



New: ReUse-Energy Workshop on Window Rehabbing

(click link for [flyer](#) with details) to help homeowners choose the right option for improving the performance of their windows. This workshop will cover temporary or permanent fixes to reduce heat loss and air infiltration on existing windows, reversing the effects of deterioration on historic wood windows and making an appropriate window replacement. Featuring window restoration specialist Paul Schmidt of Twin Cities-based Restoration Window Systems. Thursday evening, March 4, 6:30 to 8PM, 2801 21st Avenue South, Minneapolis. **RSVP** to Agatha Vaaler (avaaler@greeninstitute.org 612.278.7142). Cost is \$15, which can be paid at the door or in advance. Refreshments provided.

New: Workshop on energy efficiency and green living for first time homeowners, co-hosted by the Green Institute, the City of Minneapolis and Twin Cities Habitat for Humanity. The workshop will cover appliances, heating and cooling, water usage, moisture control and sustainable living. Information on local resources that complement the program and address the needs of this audience will be provided at the end, including low cost conservation products, multi-lingual guides to reading bills and permit applications, up-to-date rebates and incentives, carbon reduction resource sheets, etc. Thursday, March 24, 6-8 PM, 3001 Fourth Street SE, Minneapolis, MN 55414. **RSVP** to Cristen Porter (cristen.porter@tchabitat.org 612.305.7261). Workshop is **free** and refreshments are provided. Click [link for flyer](#) with details.

Careers in Renewable Energy

Saturday, March 13, 2010

Century College, 3300 Century Avenue N.

White Bear Lake, MN

Phone: (651) 779-3341

8:00 a.m.–12:00 p.m.

East Campus, Room 2313



Century College and the Minnesota Renewable Energy Society have co-developed a new half-day course for people interested in exploring renewable energy careers.

One of the most common questions people ask about renewable energy is “How can I be involved in this rapidly expanding field?” Find out the answer to this question and a multitude of others in this 4-hour session. Careers involving solar and wind site assessment, design of systems, installation of systems, and many other aspects of solar PV, solar thermal, and wind power applications will be discussed.

Ralph Jacobson, a 25-year veteran of renewable energy system installations and owner of IPS (Innovative Power Systems), one of this area’s largest solar installers, is the course instructor. He is a materials engineer, NABCEP certified in both solar PV and solar thermal installation. Ralph is currently involved in developing strategies for growing the solar industry in Minnesota and developing training programs for the building trades. He is also on the Board of Directors of the Minnesota Renewable Energy Society. People interested in taking this careers in RE course may [register](#) on the Century College website. Course ID: 001980

Starting and Growing a Solar Business

Thursdays: April 22 & April 29, 2010

Century College

3300 Century Avenue N.

White Bear Lake, MN

Phone: (651) 779-3341

6 p.m. to 9:00 p.m.

Room: Century East Campus



Century College and the Minnesota Renewable Energy Society have co-developed this two-evening introductory course for people interested in learning the basics of starting and growing a solar energy business. Solar thermal or photovoltaic installation businesses are just one choice for starting a solar energy business; while these business options will be reviewed; there are many other creative possibilities for a solar entrepreneur ranging from installation to solar product manufacturing.

Skills you will learn in the course will include planning for a sustainable competitive advantage, writing a preliminary business plan, and the course will also include management and leadership theory. Resources provided in the course will include handouts of business, finance, and marketing plan outlines and examples, reference lists and sources of additional information for starting a solar business. Instructor: Jan Hubbard has over 30 years of experience working in the electronic manufacturing industry. He is a founding Board member and the Treasurer for the Minnesota Solar Energy Industry Association ([MnSEIA](#)). Jan is a Board member for [MRES](#). He has an MBA from St. Cloud State University, a BS in economics and business from the U of MN, an electronics diploma from Anoka Tech, and several certificates in wind and solar energy. Ralph Jacobson, 25 year renewable energy veteran, NABCEP certified solar installer, founder and CEO of IPS will be the co-instructor. Course ID: 002394. More information on the [MRES class website](#).

Minnesota Rebate Funds for Solar

ST. PAUL, Minn. – (Feb. 5, 2010) – The Office of Energy Security (OES) has announced that applications for Minnesota’s new Residential Solar Electric and Solar Hot Water Rebates will be available at www.energy.mn.gov on Monday, February 8th.



Rebates up to \$10,000 will be available for qualifying solar installations at an applicant’s primary residence. Applicants may download application materials beginning at noon on Monday. If you have a prior rebate application pending, our office will contact you to request additional application materials needed to comply with federal and state requirements.

OES intends to make Residential Solar Air Heat Rebates and Small Business Solar Rebates available within two weeks.

Xcel Energy Plans for Solar* Rewards

MINNEAPOLIS – (Feb. 5, 2010) – Xcel Energy is waiting for a decision from the Minnesota Public Utilities Commission (PUC) to launch its Solar* Rewards.



“We are on the PUC agenda this month for February 11th - from that meeting we expect approval of the contract and tariff for our Solar Rewards program in Minnesota,” said Lisa Mahoney, Manager of Consumer Product Marketing, for Xcel Energy. “Upon approval of the documents, we expect to launch our Solar Rewards program [in Minnesota] in late February or early March; we have everything lined-up internally, so we should be able to roll out the program quickly,” said Mahoney.

In the original filing with OES, Xcel Energy proposed that participating customers would agree to sell the RECs to Xcel in exchange for a one-time payment, not to exceed \$2.25 per Watt (photovoltaic system rating, up to 40 kW), which is an estimated per kWh REC cost of 8.2 cents.

The June 2009 issue of the MRES [Solar Flare](#) reported on the original public filing with the Minnesota Office of Energy Security (OES), which included the Xcel Solar* Rewards program. The new program is intended to help customers save money by using less energy with a comprehensive series of new and expanded programs under its proposed 2010–2012 Conservation Improvement Program (CIP). Minnesota legislators agreed during the 2008 Session that solar energy resources, which meet certain energy efficiency requirements, may be included within public utilities’ CIP plans.

The public filing also included new features and technologies for a number of existing business programs, as well as developing more individual advisory services for business customers.

FERC Explores Efficient Integration of Renewables into the Grid

WASHINGTON – (January 21, 2010) The Federal Energy Regulatory Commission (FERC) [announced](#) it is taking a fresh look at regulatory policies to integrate the rapidly increasing number of variable energy resources into the nation's power grid in the most efficient and non-discriminatory manner while maintaining power system reliability.

FERC issued a Notice of Inquiry seeking public comment on whether to reform any of its rules or procedures as the nation's generation portfolio expands to include more variable energy resources such as wind, solar or non-storage hydro generating plants.

Docket No. RM10-11-0000.



Growing use of these types of facilities present unique challenges to the electric power industry, such as location constraints and limited ability to dispatch, but also offers benefits such as low marginal energy costs and reduced greenhouse gas and other emissions.

“We are seeing a rapid expansion in the use of renewable energy technologies around the country that have the potential to reduce greenhouse gas emissions and electricity costs for consumers,” FERC Chairman Jon Wellinghoff said. “To accommodate that expansion, it is our job to ensure that FERC has in place the market and operational reforms necessary to ensure that all wholesale electricity tariffs are just, reasonable and not unduly discriminatory.”

People who wish to comment on the issue should take a broad look at the issues concerning the integration of variable generation resources and should address any effects of variable energy resources on the following subject areas:

Data and reporting requirements, including accurate forecasting tools;

- Scheduling flexibility and incentives for accurate scheduling of variable energy resources;
 - Forward market structure and reliability commitments;
 - Balancing Authority Area size and coordination;
 - Suitability of reserve products;
 - Capacity market reforms; and
 - Redispatch and curtailment practices.
- Comments on the notice, Integration of Variable Energy Resources, are due 60 days after publication in the Federal Register.

[FERC](#) is an independent agency that regulates the interstate transmission of natural gas, oil, and electricity. FERC also regulates natural gas and hydropower projects.

A Utility Perspective on Feed in Tariffs

ST. PAUL, Minn. – (Jan. 14, 2010) – Mike Bull, Senior Resource Analyst, and Rick Evans, Director, Regional Government Affairs, from Xcel Energy came to the MRES January Member and Board meeting. Mike Bull gave a presentation about Feed-in-Tariffs. The room was packed - all seats were filled, and people were standing in the hallway.

The video of the [Xcel Energy presentation](#) is posted for viewing on the MRES website.



MRES 30th Anniversary Committee: Workin' Hard

MINNEAPOLIS – (Jan. 26, 2010) – About a dozen volunteers have been working hard since last summer planning and organizing the MRES 30th Anniversary Gala and Symposium. Hundreds of volunteer hours have gone into arranging the event, but there will be lots of fun in the end!



30th Anniversary Committee members at work

The Great Manufacturing Get Together

Brooklyn Park, Minn. – (Jan. 7, 2010) – [The Great Manufacturing Get Together](#) (GMGT) featured industry-leading presentations designed to deliver information on products, processes and programs that make a difference for manufacturers today and into the future. The GMGT was free, local and designed for business owners, managers, engineers, fabricators, machinists, and welders. The GMGT featured over 100 exhibitors including trade associations, supply chain and OEMs, educators, and public, private and nonprofit program and service providers. Doug Shoemaker, Jan Hubbard, and Tim Bethke, MRES Board members, did duty on the stand. The event was held at North Hennipen Technical College. There were approx. 800 attendees making the GMGT the region's largest all-inclusive manufacturing expo.



Jan Hubbard and Tim Bethke at the Great Manufacturing Get Together

MRES Member & Board Meeting Moving to UAW-Ford-MnSCU Training Center

Beginning Thursday, February 11, 2010, MRES will hold monthly Member and Board Meetings at the [UAW-Ford-MnSCU Training Center](#): 966 South Mississippi River Boulevard, St. Paul, MN 55116 (Phone: 651.696.0557).

Directions to the UAW-Ford-MnSCU Training Center:

Coming from Minneapolis:
Travel Highway 94 east to the Cretin/Vandalia exit.

Coming from the east of downtown Saint Paul:
Travel Highway 94 west to the Cretin/Vandalia exit.

From the Cretin/Vandalia exit: Proceed south on Cretin Avenue approximately 2.6 miles. Make a right turn from Cretin Avenue onto Ford Parkway, going west. Travel approximately 0.1 miles on Ford Parkway and take first available left into the Ford complex.

Parking at the Training Center:
Parking space is available in the parking lots on either side of the Training Center.



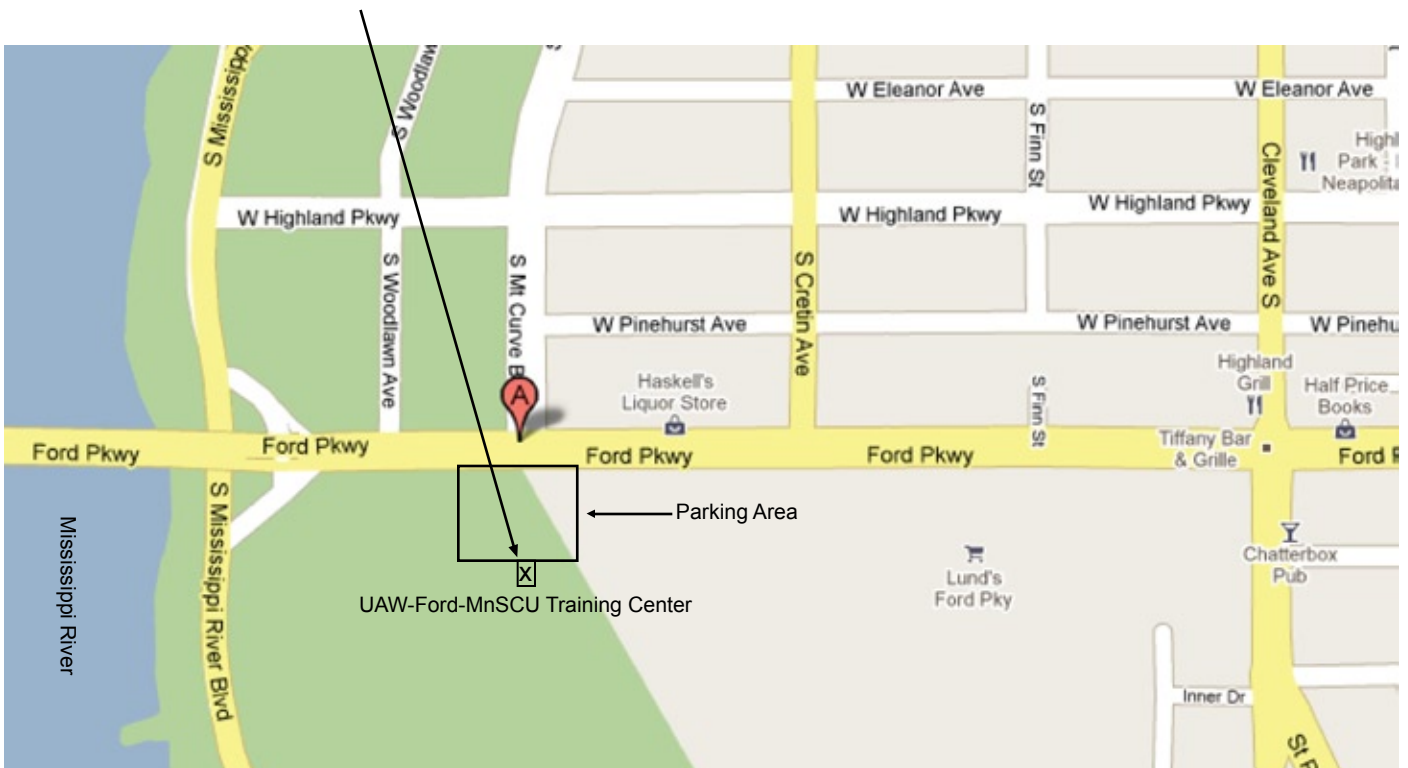
Auditorium at UAW-Ford-MnSCU Training Center



UAW-Ford-MnSCU Training Center

Google Map Link (click link below):

Enter parking area at - [Ford Parkway & So. Mount Curve Blvd.](#)



Renewable Energy Careers and Networking

MRES Hosts Green Drinks

Solar Trivia!

St. Paul, Minn. – (Jan. 13, 2010) – We had teams of 3 people competing in three rounds of Solar Trivia. Prizes included a ticket into our [30th Anniversary Gala Event](#) dinner with keynote speaker Paul Hawken, a Solar Flashlight, and Guatemalan Coffee from www.50lanterns.org. Fifty Lanterns is a non-profit that provides solar lighting to third world countries.



MRES Folks and guests during Green Drinks at Trotter's



TC Green Drinks: <http://www.greendrinks.org/MN/Minneapolis-St.%20Paul>

Network with MRES on Facebook and LinkedIn



Just click on these buttons to be an MRES Facebook Friend and join our LinkedIn Group.

Rent Solar Cart



Rent portable solar power @ \$50

Rent Solar PathFinder



Solar PathFinder - \$25 rental to MRES members

Rent Solar Trailer

[IPS Solar](#) and MRES have joined efforts to build the most versatile power supply in the state. The Solar Power Trailer is both an educational tool and a fully functioning power source that can provide quiet, clean, renewable solar power to any site. Use it for remote power at family reunions, picnics, church, or school events. [Minnesota MPCA](#) donated the PV panels to upgrade the Solar Trailer to 1.664 Kw, and [Mario Monesterio of Westwood Renewables](#) donated the labor to install the recent upgrade with the new PV panels.

Examples of What the Trailer Can Power:

- A concert for 5,000 people
- A small carnival
- Up to 25 trade show booths
- Temporary telecom sites
- About 5 concession stands
- About 200 laptop computers

Trailer Specifications:

- PV array rating 1664 watts (newly upgraded)
- 2 Trace SW4024 inverters (4 Kw at 48 volts)
- Battery bank rating 440 amp-hours = 21,120 Kwh
- 40 amp max at 110 vAC capacity
- Usable total battery capacity: 16,896 Kwh
- 10-volt 30-amp circuit breaker for larger concert equipment
- Approximate trailer weight: 3,000 pounds



MRES Solar Trailer

To [rent the solar trailer](#), solar cart, or solar pathfinder - contact David Boyce at (651) 324-1642 or DavidB@mnRenewables.org

Copyright © 2010
All Rights Reserved.
For material use permission, please contact us:
Minnesota Renewable Energy Society
2928 5th Avenue South, Minneapolis, MN 55408
612-308-4757 or 612-963-4757



www.mnRenewables.org

MRES Solar Flare
Editor: Jan Hubbard
Associate Editor: Doug Shoemaker
For comments, suggestions, or
story submissions, contact:
JanH@mnRenewables.org or
DougS@mnRenewables.org