



# The Solar Flare

e-Bulletin from the Minnesota Renewable Energy Society  
September 2010

## Member & Board Meeting

### September 2010 Member & Board Meeting

Thursday, September 9, 2010

5:30 PM – Pizza and Networking

6:00 PM – Expert Guest Speaker

7:00 PM – Board of Directors Meeting

#### **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.](#)



UAW-Ford-MnSCU Training Center  
**Map Link:** Enter parking lot at [Ford Parkway and So. Mount Curve Blvd.](#)

#### **Guest Speakers:** Senator John Doll and Lynn Hinkle

The significant accomplishments of the last Minnesota legislative session was passage of PACE as part of the Jobs Bill. PACE enables Minnesota counties and cities to use revenue bond proceeds to finance commercial and residential property owners for energy savings improvements (efficiency and renewable energy systems) repaid via a voluntary assessment on their property taxes.

PACE has the potential to create steady large scale energy improvements and a large number of good jobs in the process. Senator Doll and Lynn Hinkle will discuss steps each of us can take to implement PACE in our home counties and cities and the efforts at both the Federal and State level to enhance PACE implementation.

State Senator John Doll (SD 40 – Bloomington, Burnsville) is Vice Chair of the Energy, Utilities, Technology and Communications Committee and was the chief Senate author of the Minnesota PACE (Property Assessed Clean Energy) legislation and continues to lead implementation efforts at the state level. Lynn Hinkle is Director of Policy Development for the Minnesota Solar Energy Industries Association (MnSEIA) and has teamed with Senator Doll to both pass and implement PACE throughout Minnesota.

More information on the presentation is available by [clicking here](#).

We are looking for volunteers to show up at 5:30pm to be greeters at the board meeting. Contact Eric Jensen ([ericj@mnrenewables.org](mailto:ericj@mnrenewables.org)) if interested. Thanks!

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**Network with MRES on Facebook and LinkedIn**

**\*\*\*We are now on Twitter! Follow us at <https://twitter.com/mnrenewables>**



Simply click on these buttons to network with us on Facebook, LinkedIn, or Twitter!

## MRES News

### MRES Has Stellar Year at the 2010 State Fair Eco Experience

MRES participated in the Eco Experience at the 2010 State Fair from August 26th to September 6th. We would like to thank all of our wonderful volunteers (over 200!) who helped make this such an exceptional year! Tens of thousands of people visited our 12 brand new exhibits outside and our customary interactive exhibits inside. Estimated attendance for the 2010 Eco Experience was more than 350,000 people. Thank you to everyone who helped with donations of time or products to make this year's event one of the best ever!



*Photo credit: Minnesota Pollution Control Agency*



*Photo credit: Doug Shoemaker*

The winning boats from the MRES 2010 Solar Boat Regatta, crafted by high school and college teams and raced on Lake Phalen in mid-May, were another highlight of both the inside and outside exhibits and a great way to showcase Minnesotan solar prowess.



*Photo credit: Doug Shoemaker*

## MRES News

### MRES solar trailer showcased at WCCO TV booth at State Fair

This August, the Minnesota Renewable Energy Society built and provided a new solar trailer to power WCCO's "Recharge Lounge" at the 2010 Minnesota State Fair. This trailer, which is both an educational tool and a fully functioning power source that can provide quiet, clean, renewable power to any site, includes six 230 watt solar panels and 16 on-board batteries which are capable of producing steady, dependable electrical power from the sun.



The trailer was assembled by a team of MRES volunteers led by Ralph Jacobson, MRES board member and owner of Innovative Power Systems. It is the second solar trailer MRES now has available, and it was built with the extraordinarily generous support of five partners: [WCCO Television](#), [Xcel Energy](#), [Silent Power](#), [Innovative Power Systems](#), and [Solarflow Energy](#). We would like to thank those partners for their support and generosity; they made it possible for us to make this very visible statement of the practicality and dependability of solar power.



As well, MRES provided a solar demonstration trailer for WCCO's Take It Outside promotional program on the Nicollet Mall for 12 weeks this summer prior to the State Fair. The goal of the exhibition was to increase awareness of solar and other renewable energy applications in the state of Minnesota.



**MRES at the 2010 Eco Experience - Photo Gallery**

*All photos credited to Doug Shoemaker unless otherwise specified*



## MRES News

### MRES Tables at Minnesota Valley National Wildlife Refuge Celebrating Completion of New Solar Thermal Installation

MRES tabled at the Minnesota Valley National Wildlife Refuge to celebrate the Grand Re-Opening of the Bloomington Visitor Center on Saturday, August 7 from 10:00am to 3:00pm. The event featured plenty of fun, hands-on, interactive educational and interpretive programs, displays, exhibits, Special Guest Doug Wood, live birds of prey and other critters, a bird release, a rededication ceremony and lots more!



*Photo credit: MN Valley NWR*



*Photo credit: Doug Shoemaker*



*Photo credit: Doug Shoemaker*

### MRES Tables at 2010 Polk County Renewable Energy & Resource Fair

MRES participated in the 2010 Renewable Energy & Resource Fair on August 21 & 22 at the Polk County Fair Park in St. Croix Falls, WI.

A large crowd of approximately 400 area residents attended, as well as many who have seasonal homes in the area. Tim Bethke and Alan Wernke represented MRES.



*Photo credit: Tim Bethke*

## Upcoming MRES Events

### **Minnesota Solar Tour - Minnesota solar enthusiasts to participate in the largest national solar energy event in the world on October 2nd**

(MINNEAPOLIS) – On Saturday, October 2, 2010, Minnesota residents around the state will join more than a 150,000 people across the U.S. in touring more than 5,000 homes, businesses, and schools to learn about renewable energy and energy efficiency, participating in the 15th annual American Solar Energy Society's (ASES) National Solar Tour. The Minnesota Solar Tour is sponsored by the Minnesota Renewable Energy Society, the local chapter of ASES. "Last year more than 50 sites participated in the Minnesota Solar Tour, hosted by MRES, with over 2,000 visitors, and this year we expect even more participants," said Doug Shoemaker, MRES Events Chair. "Solar Tour participants will open up their homes and businesses for the public to see how solar energy and other forms of renewable energy can be used to 1) drastically reduce monthly energy bills, 2) reduce harmful carbon emissions, and 3) enjoy rich tax credits and cash incentives as they 4) improve their property values."



The free, self-guided Minnesota Solar Tour is a series of open houses featuring more than 50 solar-powered homes, businesses, and organizations in the Twin Cities and many other Minnesota communities which have incorporated solar thermal, solar photovoltaic (PV), and passive solar, as well as alternative energy technologies like geothermal heat pumps and wind turbines. Details on the participating sites, pictures, and state/metro maps of the locations can now be found at [www.MNSolarTour.org](http://www.MNSolarTour.org).

Some highlighted tour sites include a farm in SE Minnesota which incorporates small scale wind, solar electric, solar hot water, and solar hot air in order to make it almost entirely self sufficient, the [400 KW array at St. John's Abbey and University](#) which is currently the largest solar electric installation in Minnesota, and a home in the Metro area developed by an architect to use a combination of passive solar, a living roof, solar hot water, and solar PV in order to live almost entirely off the grid. These are just some of the interesting people and sites that will be available to engage the Minnesota public in a discussion about renewable energy in Minnesota.

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MRES will host the Minnesota leg of the American Solar Energy Society's 15th annual [National Solar Tour](#) on Saturday, October 2nd from 10:00 AM until 5:00 PM!

**Volunteer your Home!** - We need more sites on our Tour, especially sites in Greater Minnesota!

- Show off your stuff - wind, geothermal, solar, passive, bio, anything!
- Help educate potential buyers
- Receive free MRES and ASES membership!
- Get a free 1 year subscription to Solar Today

Please go to [www.MNSolarTour.org](http://www.MNSolarTour.org) to register your site!

For questions contact [laurac@mnrenewables.org](mailto:laurac@mnrenewables.org) or call 612-963-4757.

## Upcoming MRES Classes

### Electric Vehicles: Exploring the Technology and the EV Market

Saturday, September 25, 2010

9:00 am - 4:00 pm

\$110.00 for members

\$100.00 for non-members



Class Location:

Century College

3300 Century Avenue N.

White Bear Lake, MN 55110

Electric Vehicles (EVs) and Plug in Hybrids (PHEVs) are very promising technologies and when combined with renewable energy sources they can provide clean and sustainable transportation solutions. This course will give you an overview of the electric vehicle market and technologies. We will start by giving all the attendees a chance to test drive an electric car. Then we will do 'research and share' projects in small groups to learn more about the EV and PHEV models coming to the market. The afternoon schedule and topics will be chosen based on the interests of the attendee, and could include home EV conversions.

Jukka Kukkonen, is an automotive engineer by training, and formerly worked for Ford Europe in technical training and dealership business development. For the last few years he has been closely following developments in the electric vehicle market. This year he is concentrating on increasing awareness by educating the general public about Electric Vehicles and Plug in Hybrids.

Please read: If you are a Minnesota Renewable Energy Society (MRES) member, you can receive a \$10 discount on the course fee. Please contact the Century College registration office at (651) 779-3341 to receive the discounted rate. For information on joining MRES and different options for becoming a member, please visit our website at: <http://www.mnrenewables.org>

Please [click here](#) to sign up for the class on the Century College website.

## Upcoming MRES Classes

### Make a Solar Photovoltaic Module

Friday, October 8, 2010 - Sunday, October 10, 2010

Oct 8th:

A two hour - FREE - power point presentation,  
Q&A and lecture 7:00 pm;

Oct 9th and 10th:

Class will be from 9:30 am - 4:30 pm

\$115.00 for members

\$140.00 for non-members

Midwest Mountaineering  
309 Cedar Avenue  
Minneapolis, MN 55454



Photo credit: dadsolar.com

This two day workshop will take the participant through the hardcore mechanics of assembling silicon cells in a 60W PV module and producing electricity using the sun's energy. Our experienced instructor, John Burke, MeSEA - [www.dadsolar.com](http://www.dadsolar.com), has taught with Dr. Richard Komp for several years and worked extensively with solar enthusiasts around the country and in NYC area schools, building solar modules and solar battery chargers.

"... participants will have the opportunity for hands-on experience in all aspects of assembling a 60W PV module... including liquid silicone encapsulation method, developed by Grupo Fenix, in Nicaragua ... The PV modules assembled with the group are the same as produced in developing countries' PV "Cottage Industry", by Dr. Komp in Mali, Rwanda, Pakistan, India, Peru, Chile, Haiti and Nicaragua..."

The Minnesota Renewable Energy Society is hosting John Burke to teach this class in part to train our [International Committee](#) members to be able to take this skill and teach it to other people in the developing countries they are interested in helping. Once those people are trained we will try to provide this class again. Please note that it is illegal to hook these panels up to the grid but they could be used in a battery storage type installation that is not grid tied.

Light lunch provided, please notify us if you would prefer a vegetarian alternative.

Limited enrollment: 18 persons.

To Become a Member before you register, please [click here](#).

Please [click here](#) to Register and Pay.

## Upcoming MRES Classes

### Everything You Ever Wanted to Know About Solar Photovoltaics

Saturday, October 9, 2010, 9:00am-3:45pm

\$90.00 for members, \$100.00 for non-members

Class Location:

Century College

3300 Century Avenue N.

White Bear Lake, MN 55110



In cooperation, Century College and the Minnesota Renewable Energy Society have jointly developed a new 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 course covers the essentials of creating electricity from sunlight, as well as how to evaluate the 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 and electrical connections, will also be explored. You will receive .72 CEUs for attending. The course instructor, Ralph Jacobson, is a 25 year veteran of solar system installations. For more information, please [click here](#).

If you are a Minnesota Renewable Energy Society (MRES) member, you can receive a \$10 discount on the course fee. Please contact the Century College registration office at (651) 779-3341 to receive the discounted rate.

To register, [click here](#) to go to the Century College website.

### Everything You Ever Wanted to Know About Solar Water Heating

Saturday, October 16, 2010, 9:00am-3:45pm

\$90.00 for members, \$100.00 for non-members

Class Location:

Century College

3300 Century Avenue N.

White Bear Lake, MN 55110



In cooperation, Century College and the Minnesota Renewable Energy Society have jointly developed a new 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 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. You will receive .72 CEUs for attending. The course instructor, Ralph Jacobson, is a 25 year veteran of solar system installations. For more information, please [click here](#).

If you are a Minnesota Renewable Energy Society (MRES) member, you can receive a \$10 discount on the course fee. Please contact the Century College registration office at (651) 779-3341 to receive the discounted rate.

To register, [click here](#) to go to the Century College website.

## Upcoming Events

### Public Forum on Clean Energy Jobs

Wednesday, September 8, 2010

6:00 - 8:00 PM

South Education Center, 7450 Penn Ave. S.

Richfield, MN 55423

Participating in a public forum is a great way to be politically active in your community. On September 8, U.S. [Representative Keith Ellison](#) (D-MN) will hold a Clean Energy Jobs Forum to discuss ideas and policies pertaining to clean energy jobs available for all Minnesotans.

Speakers include [Representative Ellison](#), science policy director J. Drake Hamilton from [Fresh Energy](#), and keynote speaker [Phaedra Ellis-Lamkins](#), CEO of [Green For All](#). The event is free to the public.



### NABCEP Solar Installer Exam Refresher Course at St. Paul College

September 8 & 9, 2010

8:30 AM - 5:30 PM

\$225 (includes all materials and lunches)



This course is for individuals who are sitting for the North American Board of Certified Energy Practitioners (NABCEP) Installers Exam this coming September 11, 2010 and wish to refresh their memories and hone their skills, can enroll into this two day (16 hour) refresher course. This course is taught by an certified NABCEP instructor. Note: This course has a minimum number (7) of students in order to run, so do not delay registering. Increase your chances to pass this exam, enroll today!

For more information and to register, follow this link and scroll down about halfway:

<http://www.saintpaul.edu/ContinuingEducation/Pages/SolarTech.aspx>

## Upcoming Events

### Global Sustainable Bioenergy North American Convention

September 14-16  
Minneapolis, Minnesota  
[environment.umn.edu/gsb](http://environment.umn.edu/gsb)



Hosted by the Institute on the Environment at the University of Minnesota, this convention is one of five being held around the world this year to create a global vision and path toward bioenergy. The North American convention provides a remarkable opportunity to play a part in guiding renewable energy policy for the 21st century. Attendees will create a resolution that, along with similar resolutions already drafted on four other continents, will help set the course for bioenergy research and application for decades to come. We will be in a position to take advantage of all of the knowledge and insights gleaned from statements ratified for Africa, Asia, Latin America and Europe.

A special evening keynote address will be given by Roger Thurow, author of *ENOUGH: Why the World's Poorest are Starving in an Age of Plenty*.

For more information about the Global Sustainable Bioenergy Convention, please [click here](#).

### Envisioning Minnesota's Electric Energy Future

Wednesday, September 22nd  
Program: 3:00 - 6:00pm | Reception and Tours 6:00 - 7:00 pm

The Bakken Museum  
3537 Zenith Avenue South,  
Minneapolis, MN



Cost: \$15

Join the [Citizens League](#), the [Office of Energy Security](#), and local and regional electric energy sector leaders and policy makers to advance ideas for a vision of Minnesota's electric energy future.

This forum will be the inaugural event in a series of public meetings to lay the groundwork for future energy policy and to develop a broad understanding of key challenges and enabling success factors in advancing sustainable energy systems in Minnesota.

Seating is limited. Click the following links to [find out more](#) and [register now](#).

This forum is generously sponsored by the [Bakken Museum](#).



## Upcoming Events

### Growing Green: Evolving and Expanding Minnesota's Economy

Thursday, September 23, 2010

8:00 a.m. - 12:00 p.m.

(Registration and continental breakfast at 7:30 a.m.)

St. Anthony Main Event Center, Upper Level

219 SE Main Street

Minneapolis, MN 55414



Register now for the [Minnesota Environmental Initiative's](#) upcoming policy forum focused on Minnesota's green economy. Whether referred to as clean, green or sustainable, building an economy that is simultaneously more profitable and more environmentally friendly has increasingly become a priority in Minnesota. At this forum, three dialogue-based, interactive panel discussions with local business, finance and policy experts will explore the diversity of activities that make up the state's current green economy, and propose ways we can create and seize opportunities to incentivize and support the growth of this new economy in Minnesota.

\$30 for MEI members; \$60 for non-members. Contact [Georgia Rubenstein](#) for more information, to check on membership status or to inquire about need-based scholarships.

[Click here](#) to register.

[Click here](#) for more information about the event, including an up-to-date list of confirmed panelists.

### **Kilowatt Ours Screening**

Thursday, Oct 14

7:00 P.M.

Lincoln Mall, East Campus, Century College

3300 Century Avenue N.

White Bear Lake, MN 55110



Join the Century College Climate Committee and Joe Johnson, host of the cable TV show *The Green Guy*, and others at a screening of *Kilowatt Ours*, a documentary on energy conservation, efficiency and renewable energy.

The award-winning film that moved the grassroots conversation about energy conservation into a mainstream campaign. “*Kilowatt Ours* helps ordinary citizens take an active role in energy conservation,” said filmmaker Jeff Barrie. “Most viewers are shocked at the scope of the issue and even more so at the immediacy and simplicity of the solution – energy savings as an energy source.”

## Local and Business News

### Revamped MRES Business Memberships Now Available!

*Note from the Editor:*

Over the past 30 years of being an organization, MRES has drawn much of its strength from the enthusiasm and advocacy of local businesses operating in various fields pertaining to renewable energy. Whether financially or otherwise, these small businesses have given us innumerable support over the years, and have stood shoulder-to-shoulder with us in the fight to advance renewable energy in Minnesota. As a way to give back to these companies and organizations, MRES has recently revamped its [Business Membership option!](#)

Key among the changes is a new program in which, each month, we will use the Solar Flare to highlight (no pun intended) certain of our business partners with a short piece on them, their history, and their goals. This month's Flare showcases three of these companies who have signed up as business members: [Blue Horizon Solar](#), [Nelson Electric Inc.](#), and [Sun Systems](#).

We hope that through this program and through our business membership program as a broader whole, we are able to foster a more interconnected and cohesive renewable energy movement in Minnesota, one in which new businesses are able to get their names known and ideas and expertise out to a larger market, and established businesses are able to make ties and continue to grow and solidify their position in the coming renewable energy era.

If you are a member of or connected with a business that might be interested, please take a moment to review our [membership options on our website](#). For more information or should you wish to take the leap and become a business member, please visit our website or contact Doug Shoemaker at (612) 308-4757 or Laura Cina at [laurac@mnrenewables.org](mailto:laurac@mnrenewables.org).

We at MRES thank you for your support, and we hope to hear from you and work with you in the upcoming months and years!

*Please note: If you are already a business member of MRES, all changes and new benefits apply to you as well! Please contact Laura Cina at [laurac@mnrenewables.org](mailto:laurac@mnrenewables.org) for more information.*

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#### **Business Member Spotlight: Blue Horizon Solar**

[Blue Horizon Solar](#) was established in 2010 to provide additional renewable solar energy services in the Minneapolis/St. Paul metropolitan area as well as out-state Minnesota. The foundation of our business is the 20 years of combined engineering experience in product and systems development we bring to each project. The engineering focus to producing the most efficient and reliable designs with the greatest value to the customer is what drives our business. This effort to provide a customer driven solution aligns well with the vision of our company to operate our business in an ethical, responsible, and sustainable manner.



We are licensed with the State of Minnesota as a Residential Building Contractor. In addition to being a partner with MRES, we are also a Charter Member of MnSEIA. We have qualified and approved to take the NABCEP exam in September and expect to add this certification shortly afterward.

We are very excited at Blue Horizon Solar to be a part of this growing and important industry in Minnesota.

[www.mnrenewables.org](http://www.mnrenewables.org)

## Local News

### Business Member Spotlight: Nelson Electric, Inc.



**Nelson Electric** formed in 1963 and has been located in the community of South Minneapolis since its beginning. From a typical one-man, one-truck operation Nelson has grown and evolved into one of the most capable and versatile electrical contractors in the area. Proud of their heritage and longevity, they never stop working to improve business. Over the years they have adapted their business to address the ever-changing challenges facing customers.

Nelson Electric, Inc. has joined forces with Nelson Contractors, Inc., to create a complimentary company to meet the needs of clients who want solar installations of all kinds, energy efficient electric and lighting options, as well as construction, or remodeling services. In addition Nelson Contractors, Inc. has a partnership with Ramy Selim and his company, **Sunny Day Earth Solutions**. Ramy has over 15 year of experience in solar and renewable technologies, as well as in environmental and renewable living. His knowledge and expertise, combined with Nelson's 45 years as an electrical contractor and 5 years of acquiring knowledge and alliances in construction, as well as solar technologies, enables Nelson to provide clients with an unusual depth of experience, an innovative approach to project assessment and an unflagging commitment to service.

4165 Minnehaha Avenue South, Minneapolis, MN 55406  
612-724-9500 [www.nelzonelectricinc.com](http://www.nelzonelectricinc.com)

### Business Member Spotlight: Sun Systems



**Sun Systems** was started in Minneapolis, MN in January of 2010 by four professionals seeking to improve the way energy is generated in the region. We have spent many years enjoying the many natural resources that our region has to offer. One of the most abundant resources in Minnesota is sun. Sun Systems was launched on the principle of assisting our region and the country to become energy independent while ensuring the preservation of our resources for a sustainable future.

Sun Systems is a full service solar system provider for home owners, businesses, and government organizations. Our mission is to facilitate everyone's ability to secure tomorrow's energy with today's dollar. Sun Systems is committed to providing our clients with the highest level of professional services. We approach every project with a focus on exceptional service, integrity, sustainability, reliability and value. Clients choose Sun Systems for our commitment to providing the highest quality service, products, and solar energy.

## Rent Solar Cart



Rent portable solar power @ \$40/day!

## Rent Solar PathFinder



Solar PathFinder - \$25 rental to MRES members

## Rent Solar Trailer - Only \$150/day!

[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 = 21.12 kWh
- 40 amp max at 110 vAC capacity
- Usable total battery capacity: 16.89 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](mailto:DavidB@mnRenewables.org)

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[www.mnrenewables.org](http://www.mnrenewables.org)

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