

SOLAR RISING

SEPTEMBER 1999

VOLUME 2, ISSUE 4

Quarterly Newsletter of the Oregon Solar Energy Industries Association (OSEIA)

Bringing you tomorrow's sustainable energy technologies today!

GOVERNOR SIGNS OREGON'S NET METERING BILL!

Legislation takes EFFECT September 1, 1999



Frank Vignola thanks governor Kitzhaber for signing the Oregon Net Metering legislation introduced by OSEIA through the RNP. In the background are Michael Grainey from the Oregon Office of Energy, Tom Novick lobbyist for RNP. Also present for the signing were Roger Hamilton of the Oregon PUC, Joe Schwartz for Home Power Magazine, Senator Frank Shields, and Peter West from RNP.

SALEM, Oregon, August 17, 1999. Governor Kitzhaber signed Oregon's new Net Metering Law. Now progressive Oregonians can connect their renewable electric systems to the utility grid and turn their meters backwards.

Peter West and **Tom Novick** of the Renewable Northwest Project deserve considerable credit for shepherding the bill through the 1999 legislature. The bill passed the Oregon House and the Senate unanimously. **Richard Perez** and the people at Home Power magazine were able to obtain the grass roots support that made the legislators listen. Support and leadership from **Roger Hamilton** of the PUC and from all those at the Oregon Office of Energy, such as **Christopher Dymond** and **Michael Grainey**, was also very appreciated.

Many other groups such as EWEB, Emerald PUD, PGE, the IBEWU, and eventually Idaho Power worked behind the

scenes to help the bill's passage.

The net metering law takes effect on September 1, 1999. This does not leave a lot of time for utilities to prepare for the new legislation and this gives OSEIA a chance to help the utilities develop their net metering interconnection agreements. This presents a real opportunity to help out the small utilities and make good business contacts for the future.

"SOL BROTHERS" SOLAR POWERED TRAVELS

by Larry Elliot

The hot, dry and sunny days of summer seemed a long way off last winter when OSEIA member Bob Maynard and I sat down and discussed what part we would play in promoting and participating in the Sol West alternative energy fair in John Day. We were looking for something we could do that would be fun, educational, somewhat of an adventure, and dispel any doubts the general public has that solar electric power can deliver useful power beyond solar calculators and fence chargers. At the time it seemed a tall order but we now feel our decision came pretty close to the original goal.

Bob had acquire a unique flat bed electric pickup truck a few months prior to our decision and I had recently completed a total upgrade to the drive system. We felt this truck would be the ideal vehicle (no pun intended) to reach our goal. We

(Continued on page 11)



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SOLAR RISING is the newsletter of the Oregon Solar Energy Industries Association (OSEIA). OSEIA is Oregon's local chapter of the Solar Energy Industries Association. The information presented in this newsletter reflects the opinions of the authors and not necessarily those of OSEIA.

The success of the newsletter depends upon your contributions. This is an opportunity to tell the OSEIA members about your activities and to express your opinions. Photographs or figures to accompany articles are most appreciated. Articles of current and timely interest will be given highest priority. Otherwise, articles will be published on a first come basis as room allows.

Send your contributions to:

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Recognition should be given to Chris Eames of Energy Service Company, Larry Elliot of Energy Outfitters, and Marnie McPhee Energizer Editor for their contributions to the newsletter. Thank You!

OSEIA MEETING AGENDA

1 World Trade Center Room 5C
Portland, Oregon
10:00 am—noon
10/1/1999

1. Welcome and Introductions: Frank Vignola
2. Approval of Minutes: Chris Eames
3. Treasurer's Report: Ray Pokorny
4. OSEIA Corporate Status: Windy Johnson
5. OSEIA Bylaws: Doug Boleyn
6. Solar Legislation Update: Frank Vignola
7. OSEIA Brochure:
8. OOE Programs: Christopher Dymond
9. Other business:
10. Adjourn

The Oregon MSR Coalition meeting will be from 1:00 pm to 4:00 pm at 2 World Trade Center River Room.

The agenda for the Oregon MSR Coalition meeting is given on page 7.

DIRECTIONS TO THE WORLD TRADE CENTER

The World Trade Center is located at 121 S.W. Salmon St. If you are traveling on I-5 northbound to Portland, exit on Front Street and Salmon is just a few blocks north.

There is a parking garage under 2 WTC, less expensive parking at the meters if you are lucky.

OSEIA Officers



President: Frank Vignola
Univ. of Oregon Solar Energy Center
Ph: (541) 346-4745

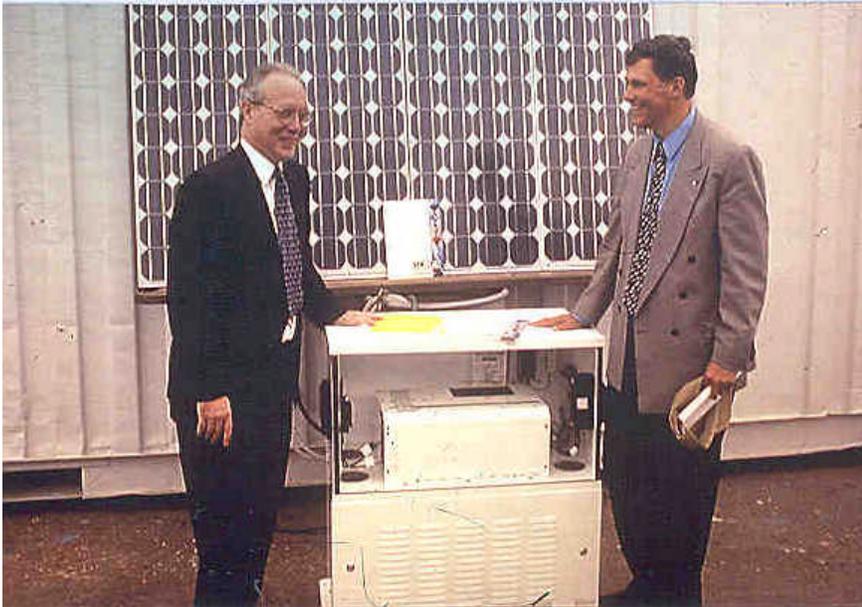
Vice President: Doug Boleyn
Cascade Solar Consulting
Ph: (503) 655-1617

Secretary: Chris Eames – Energy Service Company, Ph: (541) 302-6808

Treasurer: Ray Pokorny – Solar Interior Design, Ph: (503) 224-2322

OSEIA Member	Contact	Phone Number	OSEIA Member	Contact	Phone Number
Heliodyne, Inc	Bieri	(510) 237-9614	Oregon Conservancy Foundation	Marbett	(503) 637-6130
Cascade Solar Consulting	Boleyn	(503) 655-1617	Energy Outfitters	Maynard	(541) 592-6903
Solar Design & Construction	Bortz	(541) 753-8725	Solar Depot	Mizani	(916) 381-0235
Bobcat and Sun Construction	Claridge	(541) 389-7365	Read Goods Trading Company	Musser	(541) 334-6962
Mainline Electric	Cordeiro	(541) 535-9862	Mr. Sun Solar	Patterson	(503) 245-3722
Solar Collection, Inc.	Dawson	(541) 535-5364	Home Power	Perez	(530) 475-3179
Oregon Department of Energy	Dymond	(800) 221-8035	Solar Interior Design	Pokorny	(503) 224-2322
Energy Service Co., The	Eames	(541) 302-6808	Sun Earth, Inc	Reed	(909) 605-5610
SolarTech	Elliot	(541) 545-3201	Stellar Processes	Robison	(503) 827-8336
Gen-Con, Inc.	Gunderson	(503) 245-7657	Emerald PUD	Savage	(541) 744-7448
Sunlight Solar Systems	Israel	(888) 787-6527	Eastern Oregon Solar Electric	Slater	(541) 576-2478
Oregon Solar and Water	Johnson	(541) 344-1594	EWEB	Spiek	(541) 484-1125
Solar Energy Solutions	Koyaanisqatsi	(503) 238-4502	Summers Solar Systems	Summers	(541) 683-4014
Renewable Energy, Inc.	Larson	(503) 287-4777	Univ. of Ore. Solar Monitoring Lab.	Vignola	(541) 346-4745
Solar Assist	Loken	(541) 338-4957	City of Ashland	Wanderscheid	(541) 552-2061

TRACE PROMOTES HOME ENERGY GENERATION ACT



Trace president Bill Roppenecker shows U.S. Representative Jay Inslee (right) Trace's new "whole-house" Backup Electric System.

Trace Engineering Offers the Only Backup Systems that Allow Consumers to Cut Utility Bills While Assuring Virtually Unlimited Emergency Power during Blackouts

SEATTLE, Wash., August 24, 1999 - U.S. Rep. Jay Inslee (D-Wash.) announced the introduction of his Home Energy Generation Act today, declaring that it is "the right of consumers to have a national standard" that will encourage the development of reliable and affordable home energy generation technologies. If passed, the legislation will allow consumers who use solar, wind or other alternative sources to generate electricity and effectively sell excess energy back to the local utility by rolling back their utility meters. Oregon and 29 other states have provisions for some type of "Net Metering". However, states have implemented these programs differently and uniform federal legislation for Net Metering is needed.

Leading power system supplier Trace

Engineering participated in Inslee's presentation and demonstrated practical ways that consumers could benefit from passage of the bill using their new "whole-house" Backup Electric Systems - the only battery backup inverters on the market approved for utility sellback. According to Trace's President Bill Roppenecker, "Congress-man Inslee's bill fits perfectly with the American spirit of independence and self-reliance by ensuring a vastly simpler approach to producing energy with solar, wind, fuel cells or biomass. It removes many of the cost prohibitive impediments that utilities have placed in the

way of pioneer 'customer-generator'. From our perspective, this means that thousands of new energy producers will be able to convert renewable energy into useable household power."

Trace's systems enable consumers to sell or feed excess power back to the utility in states with "Net Metering" and offer the advantage of providing emergency electricity to homes or businesses during power failures. When connected to solar panels or other renewable energy sources, these systems can provide power during even the longest blackouts caused by extreme weather, potential Y2K issues or the utility distribution problems that have become increasingly common as demand surges.

Trace's backup electric systems come in a wide range of sizes to meet every power requirement and budget. All models feature protection from blackouts, silent operation, and UL Listing for assurance of safe operation. When coupled with a renewable power source, specified models can actually send excess power back to the utility, saving energy and reducing utility bills as well. The current Sinewave Series inverters offered by Trace Engineering are designed to meet all applicable safety and performance standards such as UL 1741 and IEEE P929. Trace Engineering is an active participant on the committee for the proposed IEEE 929-1988 Recommended Practice for Utility Interface of Residential and Intermediate Photovoltaic (PV) Systems.

E&W RIDER WOULD RESTRICT RENEWABLE ENERGY FUNDING FOR BPA

Sec 317 of the House Energy and Water Appropriations bill reportedly includes a rider that would eliminate cost-effective support programs developed by federal power authorities for federal agency energy efficiency and renewable energy projects that save the federal government money. Specifically, it would prevent the

Bonneville Power Authority (BPA) from providing energy efficiency or renewable energy engineering, construction oversight, operations and maintenance, repair or financing project support work for federal agencies on either a reimbursable basis or as an internal BPA expense. This rider would significantly hamper BPA's MSR efforts! Write Washington Now!

NORTHWESTERN SHINE MAKES PLANS FOR THE SOLAR FUTURE

by Chris Pride

Northwestern Shine, Inc. (NSI), was incorporated June 17, 1999 in the State of Oregon for the development, manufacture, and commercialization of Thin Film Solar Cells and related Solar Technologies. Northwestern Shine, Inc. has concentrated on the following multiple discipline:

- Photovoltaic Module Assembly Facilities
- Photovoltaic Thin film Manufacturing Facilities
- Mass Production of Facilities for Energy Management Systems
- Build, own, and operate 50 Mega-Watt (MW) to 200 MW Power Utility Plants for Domestic and International markets.
- Manufacture numerous marketable concepts related to the “spin offs”, from Solar Power Technologies, Security and Communication Systems.

This progressive objective of Northwestern Shine, Inc. is to bring corporations, higher-learning institutions, foundations, utilities, and governments together to, “collectively capitalize”, along with Northwestern Shine, Inc. of a commercially viable, global effort to revolutionize energy consumption benefits. Northwestern Shine Inc. is working to become a world leader in photovoltaic energy by rapidly deploying the most affordable and efficient solar technologies, on a massive scale,

in the trillion dollar electricity market.

Northwestern Shine, Inc. has secured the financing for the First Phase of Development, which includes three (3) Project Specifics.

1. **Northwestern Global Research Pavilion (NGRP):** Proposed site location - Riverfront Research Park, University of Oregon, Eugene, Oregon. This multi-technology Research/Production Facility will become the “world class, state of the art” forum for scientific collaboration, concerning subjects of mutual interest in Energy Conversion Technology and Robotic Science, for terrestrial and extraterrestrial applications, also, Satellite Communication Services. The main purpose and goal of NGRP will be as follows:

- To develop a consortia of corporations with the same admiration and respect for the vision and philosophy of the Northwestern Global Research Pavilion: To deliver humanitarian and environmentally friendly, affordable. solar urban-rural developments globally, utilizing photovoltaic energy products and cutting-edge technologies in proven building concepts.
- To establish sound principles at a grass root level for Economic Sustainability Programs in the attempt to eradicate the vicious cycle of

poverty and its perpetuating nature from ever returning to any region, globally.

Northwestern Global Research Pavilion will accommodate a network of high-tech corporations and agencies within the consortia, such as in Table 1.

2. **Northwestern Shine, Inc-** will build in the Eugene-Springfield, Oregon area a 20 MW photovoltaic OMCVD CIS, Thin Film manufacturing PV Module Production Facility and a 10 MW Single Crystalline PV Module Assembly Production Facility.

3. **Northwestern Shine, Inc.** will partner with a Canadian based company, World Development of Seven Circles Corporation (WDOSCC) to build a 30 MW CIS Thin Film PV Module Assembly Production Facility in Nova Scotia, Canada.

Northwestern Shine, Inc. Second Phase; for the new millennium, is to duplicate the construction of several other photovoltaic module assembly production facilities along with numerous spin-off production plants, to accomplish a world wide implementation of our Total Solar Mass Urban-Rural Development and Solid Waste Management Program.

For more information:
Phone (503) 588-7139/(503) 932-6464
Fax (503) 588-1622

Table 1: Preliminary List of High-Tech Corporations and Agencies for the Pavilion

World Development of Seven Circles (WDOSCC)	Pride Bridges Initiative, Inc.
NASA Glenn Research-PV Branch	YSC International, Inc.
Spire Corporation	Canada Space Agency
Nelson Technology Corporation	E.A.R.T.H. Alliance
Northwestern Shine, Inc.	Oregon Solar Energy Industries Association (OSEIA)
Applied Advanced Technologies	United States Department of Energy (USDOE)
Solar Energy Center	Northwestern Shine Utility Power Corporation (NSUPC)
Geothermic Utilities LTD.	Northwest Energy Education Institute
Solar Energy Association of Oregon (SEA of O)	Stephen Pittfield International
Department of Advanced Research Project Agency (DAPPA)	

OREGON MILLION SOLAR ROOFS COALITION

1999-2000 ACTION PLAN DRAFT



<i>Action</i>	<i>Committee Chair</i>
1. Improve access to financing	Jeff Keto
• Identify all existing incentives, specifically utility or community to help.	
• Identify target markets for building financing relationships.	
• Help develop local incentives where there is an interest.	
• Develop a case for financing that could be presented to area financial institutions. Work with utilities also. (area financial institutions mean they are locally available but the larger portion of the state they cover the better)	
• Develop relationships with financial institutions and utilities in these target markets to find local financing sources. Expand into other areas based on experience learned.	
• Develop and implement a financing marketing plan for potential customers. (Dealers should market the financing along with the product)	
2. Develop plan for Licensing	David Parker
• Get info from the National Labs	
• Develop contacts with IBEWU sunology program	
3 Initiate school related PV system/educational program	Joe Savage
• Set up a PV system on one school with interface for teaching	
• Evaluate WAPA's K-6 solar lesson plan	
4. Develop marketing plan	Doug Boleyn
• Draft simplified marketing plan resulting in 50,000 solar roofs installed in Oregon by 2010	
• Identify actions to overcome barriers to implementation	
• Develop marketing to promote solar (display, flier, etc)	
• Interface with solar stewardship initiative group	
5. Help implement net metering law	Christopher Dymond
• Seek funding for one day conference	
• Help develop one page interconnection agreement	
• Get info on related national MSRI program	
6. Work with utilities to develop solar programs	Don Spiek
• Publicize utility solar programs	
• Encourage utilities to use solar for part of public benefits funds	
• Develop relationship between Oregon MSRI and utilities	
7. Seek funds for planning and implementation of MSR action items	Frank Vignola
8. Work with NW Solar Alliance to obtain buy down fund for PV systems	Chris Dymond
9. Hold quarterly meetings	Frank Vignola
10. Get members to commit to specific items	

MSR COALITION—OSEIA QUARTERLY MEETING MINUTES

FRIDAY JULY 23, 1999 3:00—6:00 PM

JOHN DAY SENIOR CENTER JOHN DAY, OR.

by Chris Eames



1. Welcome and Introductions

Attending were: Elly Adelman, Ray Pokorny, Robert Preus, Richard Westlake, John Patterson, Bob Maynard, Doug Boleyn, Christopher Diamond, Joe Schwartz, Justin Klure, Anthony & Victoria Stoppiello, Frank Vignola, & Chris Eames.

2. Minutes of the April 6, 1999 General Membership Meeting

It was moved seconded and approved unanimously to approve the minutes as printed in the July 1999 issue of Solar Rising.

3. Treasurer's Report

Ray Pokorny reports balance in checking of \$2,372.49, receivables of approximately \$4,738.00, and \$2,335.58 in savings. \$227.00 was paid to EWEB for the last OSEIA meeting. Several members have not as yet remitted their dues for 1999, accounting for the high level of receivables. Invoices will be mailed again soon. Questions AND dues payments can be mailed to Ray at his home address: 242 NE 61st Portland, 97213.

4. OSEIA Corporate Status: Wendy Johnson

Frank reported that Wendy's has been working to get our 501-3C paperwork submitted. Current status is unknown.

Bob Maynard offered to help with telephone follow-ups.

5. OSEIA Bylaws Status: Doug Boleyn

Doug made the recommendation that we retain a lawyer to file the necessary paperwork (Articles of Incorporation and Bylaws) with the Oregon Corporation Commission. If anyone has documents that appear to be the Articles of Incorporation, please contact Doug. Several language change recommendations were discussed and will be included to reflect the voting-membership focus on sale of solar products and services in contrast to SEA of O's focus on education. Other discussion focused on organizational mechanics and all revisions will be presented at the next meeting. Doug moved that we fund the legal review of these changes up to \$250.00. Bob Maynard seconded and the motion passed without dissent.

6. Solar Legislation Update: Frank Vignola

The solar Tax Credit increase for PV's is "dead" for now. Wind and Fuel Cells are now re-eligible for Tax Credits and the solar pool heating credit is "saved". Thanks to those who testified!

Also, Utility Restructuring "Lite" has been passed, providing a modified choice of energy providers to utility customers with the public utilities retaining the option to participate or not. 3% for renewables and conservation remains a part of the mix.

Net metering has passed both the house and senate and it has already been signed by the governor. As reported in the last newsletter, it falls to the utilities to decide whether or not to pay for a second meter as well as additional billing costs in order to purchase

the excess generated energy at avoided cost OR actually net meter (paying retail prices) and avoid the extra meter and billing costs.

7. Million Solar Roofs Coalition Update Status of the 1999-2000 Action Plan: Frank Vignola:

Some of the items that are being highlighted for the next year and a half include: 1. Improving access to Financing; 2. Developing a Licensing Plan; 3. Start a School Related PV System/Education Program; 4. Developing a Marketing Plan; 5. Helping in the Implementation of the Net Metering Law; 6. Working with utilities to develop solar programs; 7. Seeking Funding for planning and implementing MSR action items; 8. Working with the Northwest Solar Alliance to obtain buy-down funds for PV systems; 9. Holding quarterly meetings; and 10. Getting coalition members to commit to specific actions. Details of these items were circulated and are available as a hand-out from Frank upon request.

A survey from DOE National Renewable Energy Laboratory in Golden CO was presented and that asks input for potential for their assistance in our efforts as an Industry Association. Frank will present the results of this to them.

8. BPA Solar Business Listings: Elly Adelman

Elly introduced the Web Page that Bonneville has that offers information about energy efficiency products, topics, and contractors that are doing it. She circulated a Business Listing questionnaire that can provide your information for their Webmaster. You can also sign up by visiting the Website (<http://www.bpa.gov> and choose "Energy Efficiency", then "NW EE

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MSR COALITION-OSEIA QUARTERLY MEETING MINUTES

(Continued from page 6)

Business Listing” or go direct via <http://www.bpa.gov/cgi-scripts/ncs/custhome.asp>)

BPA is proposing a 1/2 mill rate decrease on the BPA subscription rate for customers that engage in qualifying conservation and/or renewables including solar so that utilities will have an incentive to start or renew programs to promote end-use renewables and conservation.

9. OOE Programs: Christopher Dymond

Christopher is in the process of simplifying the Tax Credit Program. His goal is to make \$3.00 per kWh the standard regardless of geography (this would top-out at the \$1500.00 of course).

OOE is also kicking off a promotion to expand the remote PV potential of Oregon to resident in outlying areas. Other promotional ideas are being initiated to make the programs offered by OOE better known and more utilized. OOE leadership wants to “think big”

in terms of promotion of renewable energy to both residential users AND commercial and governmental agencies.

10. Northwest Solar Energy Alliance: Christopher Dymond

Christopher presented a draft “white paper” entitled “A Northwest Perspective on PV Market Development”. It promotes Oregon, Washington, & Idaho as viable regions for industry focus for investment. It seeks cosigners from a wide range of entities including state government energy offices, local & regional utilities, OSEIA, SEA of O, Home Power Magazine, and University & other educational entities.

11. Other Business

There was discussion about ethics among members of the Association to achieve a standard of professional courtesy that does not criticize competitors within the industry while maintaining standards of excellence which may entail upgrading another members work. John Patterson will compose an article for inclusion in the newsletter to ex-

pand on this notion.

The need for licensing for solar installations perhaps starting with a limited electrical (low-voltage low-amperage) licensing was discussed extensively. The Licensing Committee of Tom Scott and David Parker could use whatever effort the membership may provide to help with the process. Please contact them!

Newt Loken and Ben Root have been working on the new OSEIA brochure and a mock-up was presented for review.

A joint meeting with OSEIA and the Oregon MSR Coalition will be held October 1, 1999 10:00 AM - 5:00 PM in Portland. Location to be announced. The first two hours will be OSEIA business, then break for lunch and at 1:00 PM begin the Oregon MSR Coalition meeting. (Note this is a change from the actual statement at the meeting.)

12. Adjourn

AGENDA FOR OREGON MSR COALITION OCTOBER 1 MEETING

The Oregon MSR Coalition will meet October 1, 1999 at the World Trade Center 2 in the River Room from 1:00 pm to 4:00 pm. The purpose of the meeting will be to discuss the coalition’s action plan for 1999-2000 and to get coalition members to commit to specific actions.

The OSEIA quarterly meeting will be held from 10:00 am to noon in room 5C of World Trade Center 1. The agenda for the OSEIA meeting is given on page 2 along with brief directions to the World Trade Center.

The draft of the proposed action items are given in on page 5 of this newsletter.

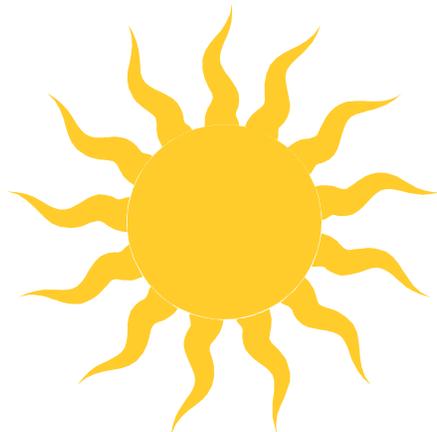
Agenda

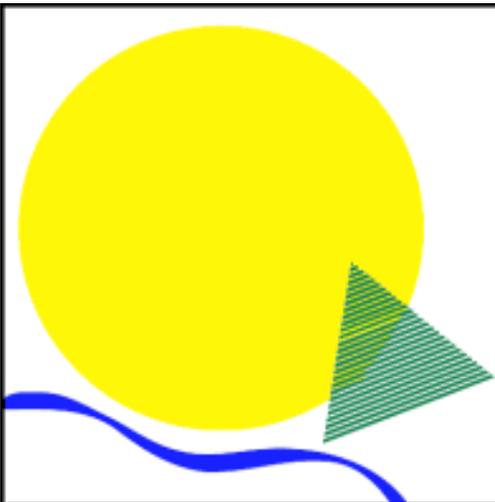
October 1, 1999 for 1:00-4:00 pm

World Trade Center 2

River Room

1. Introductions
2. Activities of the Northwest Solar Alliance: Christopher Dymond
3. Update on Northwest Shine, Inc. plans to build solar manufacturing facilities in Oregon
4. Discussion, prioritization, and commitment to the Oregon MSR coalition action plans for 1999-2000. [See page 5]
5. New Business
6. Adjourn





SOLAR '99

SEA OF O'S 20TH SOLAR CONFERENCE

By Marnie McPhee

SOLAR '99 – Where have we been ... and where do we want to go?

SEAO's 20th Anniversary Conference
October 2, 1999

Can it be that SEAO is 20 years old? Yes! Can it be that we're hosting our 20th annual conference on solar? Yes!

Solar '99, SEAO's 20th anniversary conference, will be held October 2, 1999 from 8 a.m. to 4:30 p.m. at the World Trade Center, 121 SW Salmon St. in Portland.

So where have we been in the past 20 years? What's ahead? And what can we do to get where we'd like to be in the next 20 years?

That's what speakers, panelists, vendors and participants will explore at Solar '99.

Keynote Speaker -- Sim Van der Ryn Building A Sustainable And Solar Future— Sim is president of the Ecological Design Institute and Van der Ryn Architects in Sausalito, CA, and a leading proponent of sustainable design and renewable energy. Through his experience -- as principal of several design and planning firms, Professor of Architecture at the University of California, Berkeley, and California State Architect -- he has provided countless examples of sustainable building. In 1996, the American Institute of Architects named him a pioneer of energy efficient and sustainable design. He has written several books about sustainable planning and design, including Ecological Design (1996)

with Stuart Cowan and Sustainable Communities (1986) with Peter Calthorpe.

Panel Session - Where have we been? Where do we want to go? What Have We Learned in 20 Years?

- **John S. Reynolds**, distinguished professor of Architecture at the University of Oregon, has inspired generations of solar architects, authored definitive texts, designed several award-winning solar projects, won the American Solar Energy Society's Passive Pioneer Award and is writing a book on passive cooling. John will take us through the history of solar in Oregon.
- **Larry Sherwood**, executive director of the American Solar Energy Society, will review the state of solar in the U.S., and tell us how activists (like SEAO members) are leading Americans toward sustainability.
- **Curtis Framel**, Pacific Northwest Regional Coordinator, Million Solar Roofs Program, US Department of Energy: Million Solar Roofs Program in the Pacific Northwest
- **Ken Haggard and Polly Cooper**, San Luis Sustainability Group -- Rising from the Ashes Since 1976, Ken Haggard and Polly Cooper of the San Luis Solar Group (now called the San Luis Sustainability Group) have been designing passive solar buildings on California's central coast. Always irreverent and innovative, Ken and Polly will discuss their recent work. That includes their own home and office, which they rebuilt after a devastating wildfire in August 1994. Today it's a living demonstration of sustainability, green architecture and passive solar design.

Sessions

Tom Scott, president of The Energy

Service Company of Eugene: Solar Hot Water Learn about new solar water heating products, such as PV-pumped systems, from solar installer extraordinaire.

Howard Reichmuth, a physicist, engineer and energy consultant from Hood River, will discuss the energy savings from systems installed under the Eugene Water & Electric Board's (EWEB) solar hot water program.

Victoria Stoppiello: Living With Solar will describe retrofitting and living in an energy-saving solar home on the not-so-sunny Washington coast.

Dave Leckey: Twenty years after he designed and built it, Dave reports that his earth-bermed passive solar house near Wilsonville is still warm, attractive and comfy.

John Cunningham will "walk" you through his small, economical solar house in NE Portland.

Candace Gossen: Residential Design Architect, will discuss her recent work in alternative types of construction, including straw bale.

Ray Pokorny of Solar Interior Design: Learn about adapting interiors for solar living.

Anthony Stoppiello, who has been a solar Architect for more than 30 years, will share some of his most recent solar home designs.

Betty Long, a homeowner from Goldendale, WA: Living with PVs. Betty will describe what it's like to live in an off-grid house that relies solely on solar for electricity.

David Bridges will detail the lessons he learned by installing his own solar electricity system.

Alan Scott of SERA Architects will describe how he integrates The Natural Step concepts in building design.

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SOLAR '99 SEA OF O'S 20TH SOLAR CONFERENCE

(Continued from page 8)

Mike Hatton will talk about how he transformed the Burley Bike Co-op headquarters in Eugene into a well-lit, energy-efficient and solar building.

Greg Acker of Gregory Acker Architects will describe how he maximizes daylighting in commercial office buildings.

Greg Mihalik of Siemens Solar Industries in Vancouver, WA: Production and Use of PVs—Greg will discuss work on a recent project to reduce the energy and resources required to manufacture PVs.

Doug Boleyn of Cascade Solar Consulting will offer a variety of PV installation details and also share information about taking advantage of Oregon's new net metering law.

Frank Vignola, Director of the UO Solar Energy Center and President of the Oregon Solar Energy Industries Association will talk about the performance of the grid tied PV system at Aprovecho in Cottage Grove, Oregon.

Chris Pride and associates from Northwestern Shine, will describe their plans for a solar PV industry in Oregon.

As usual, vendors also will show the latest

- Solar electric, water heating and other systems
- Electric vehicles
- Environmental building materials.

After the conference, please join the speakers, vendors, participants and SEAO members at a wine and cheese reception at Augen Gallery, 817 SW 2nd Ave. hosted by the Solar Energy Association of Oregon.

Conference registration fees: Contact SEA of O. Registration includes lunch and the wine and cheese social. For more information, contact SEAO, 205 SE Grand Ave., Suite 202, Portland, OR 97214, (503) 231-5662.

Participants can earn AIA/CES credits by attending this conference.

Let's review the very interesting past two decades of solar and look ahead to twenty even sunnier years!

SEAO would like to thank the following for helping us celebrate our 20th annual conference!

Contributing Sponsors

- Portland General Electric
- US Department of Energy
- Oregon Office of Energy
- City of Portland Energy Office
- Emerald People's Utility District

Sponsors

- AIA/Portland
- Appropriate Technology Group
- Atmosphere Alliance
- Citizens Utility Board
- Earth and Spirit Council
- Environmental Building Supplies
- Fair and Clean Energy Coalition
- Oregon Green Energy Coalition
- Renewable NW Project

“With the unselfish use of technology, it is now possible to take care of all humanity at a higher standard of living than any have ever experienced and do so on a sustaining basis by employing only our daily energy income from Sun and gravity”

**R. Buckminster Fuller,
from Humanity's
‘Critical Path’**

“The time to repair the roof is when the sun is shining.”

John F. Kennedy

“Concern should drive us into action and not into depression.”

-- Karen Horney

SOLWEST '99 A HUGE SUCCESS!

By Frank Vignola



The Eastern Oregon Renewable Energy Fair held in John Day on July 24 and 25, 1999 was a huge success! Jennifer Barker and EO-Renew put on quite the show for Grant County and demonstrated how to produce an exciting renewable energy fair. Thank you Jennifer and the staff of volunteers for all your hard work.

Approximately 1,000 people attended the fair from 12 states and as far away as Mexico and Canada. This is quite a showing considering this was a first time event. The Fri-

day night pre-fair dinner was attended by approximately 100 volunteers and exhibitors.

Over 50 exhibitors and vendors attended the fair. In addition 30 free workshops were presented. The workshops were well attended and judging from the questions asked, the people were very interested and enthusiastic about solar and renewable technologies. The lack of reliable information and access to the technologies were the biggest concerns expressed.

Home Power had their typical booth with chairs to sit on in the shade where people could ask questions and get informed answers. Bob Maynard of Energy Outfitters drove his PV power truck to the fair.

Many people walked away with solar panels purchased at the fair. Here one person purchases some panels while another potential customer waits and listens.



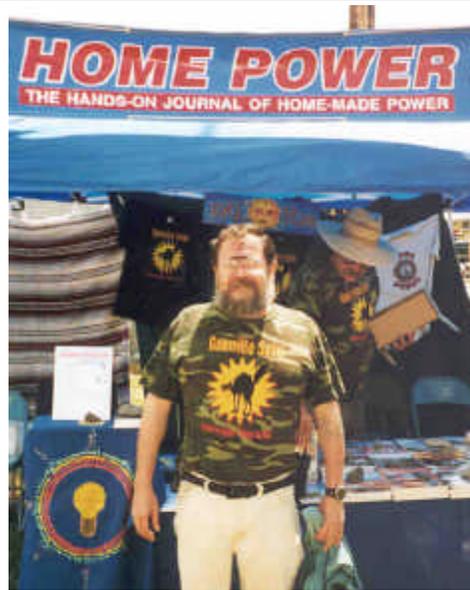
Water heating is still one of the most economical applications of solar energy. Here, Mr. Sun's sign and water heating system attracts the attention of a fair attendee.



This solar bus, drive by exhibitors from Sunlight Solar Systems attracted many visitors during the fair. The displays included wind as well as solar equipment. If you get a chance visit their new showroom in Redmond, Oregon.



The Idaho Power PV water pumping demonstration was popular at the fair. This young man was one of many who were fascinated watch the sun pump water.



This member of the gorilla solar movement was spotted at the SolWest fair. By the end of the fair, there were many more fairgoers sporting this T-shirt.

“SOL BROTHERS” SOLAR POWERED TRAVELS



The Sol Brothers stop to refuel under the hot eastern Oregon sun.

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decided that night to make a 300 mile trip from my house in Bonanza to John Day solely on solar electric power. Here is a rundown of the highlights of the trip.

On July 15th Bob and I were joined by Gene Hitney of Hitney Solar out of

Chino Valley Arizona who supplied the 3500 watt, 120 volt array as well as a chase truck to haul it. Bob decided to call our merry troupe “The Sol Brothers” and it stuck for the rest of the trip. With a full charge we left Bonanza on the 15th and headed east on Rt 140.

At a steady speed of 35 to 40 mph we climbed to the 5100 foot summit of Bly mountain. By the time we had traveled east of the town of Bly we had used 10.08 kwh's and traveled 41.5 miles. The batteries were pretty flat but we felt it wasn't bad considering we had new batteries with less than 8 cycles and the truck weighed in at 4250 lbs. After 45 minutes of wiring and setup we had the array connected and charging at better than 20 amps at 123 volts. Our Seimens SP75's and SR100's continued to produce quite well at elevated temperatures throughout the rest of the day.

Bob defaulted to being chief cook and bottle washer and prepared a great meal using our Solar Chef oven. We then downloaded a digital photo using our solar powered cell phones and a laptop computer. As we waited for the batteries to charge we sipped cold beer straight from the Sun Frost reefer we carried on the back of the electric truck. Naturally the 12vdc was supplied by photovoltaic panels. Next morning we finally pulled a full

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“SOL BROTHERS” SOLAR POWERED TRAVELS



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charge and headed for Lakeview. Driving 42.3 miles and using 9.91 kwh's we arrived in less than one hour and twenty minutes driving time. We had driven at the same speed and traveled the same terrain yet used less power and driven further than the previous day. The more we cycled the 20 Trojan T-125's the more power they stored.

With truck, array and all other solar equipment operating flawlessly we proceeded north to Lake Abert driving 36 miles on 7.07 kwh's. Another charge and we reached Great Basin Ag station just south of Riley traveling 64 miles on 12.80 kwh's. Another charge and 39 miles to Burns on 7.58 kwh's.

Now we met our first real challenge. Burns was cloudy and rainy and we had a long climb up Rt 395 to Silvies ahead of us. Again the performance of the

Seimens panels was great. In spite of the weather we recharged, climbed the mountain and reached the Grant County line. We drove 28 miles on 6.52 kwh's and the batteries were very flat. We felt pretty good about this knowing we had driven on “cloud power”. This is an answer to those who ask “do solar panels still work in cloudy weather”?

We were quite flat though and in fact we resorted to charging from our Exeltec inverter, that was connected to 4 T-105's and two Seimens SP75's. This gave us just over 1/3 kwh and allowed us to travel another 2 miles to reach a better camping and charging spot. Part of this power was due to the voltage

recovery as the batteries rested, but not much. We had already used up allot of the “rest recovery power”.

The next day was bright and sunny and we recharged by 4 P.M. John Day was only 40.4 miles and 6.84 kwh's further north. By 5 P.M. we were in John Day with power to spare and a day earlier than expected. The last 11-12 miles was straight down hill and would have been a great test of regen braking.

We had a great time at Sol West and would like to take this opportunity to thank Jennifer Barker and all the volunteers who made it a success. Bob and I have some plans in the works to make the trip next year only this time on fuel cell power and ask others who may want to come along to prep an "alternative energy rig" and make history. If you haven't already, access Sol West's web page and check out our "Sol Brothers" photo and text at www.eoni.com/~solwest.

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