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**The solution on the horizon**

JOIN THE  
AMERICAN SOLAR ENERGY SOCIETY  
[WWW.ASES.ORG](http://WWW.ASES.ORG)

**Zero Energy Buildings (ZEBs)**

The DOE recently announced some \$18M in support of several companies and organizations to develop Net-Zero Energy (Commercial) Buildings. There have been attempts before to develop such optimized buildings, where there is no net demand for energy on an annual basis, as from a utility.

The very first issue of *RE News* [pre-dating the Olympic version] in 2000 highlighted the Lewis Environmental Education Building at Oberlin College in Ohio...triple pane windows, The Living Machine for gray water system treatment, efficient

heating, solar energy systems, etc. The developers of the \$5M+ building fell short of their goal for net zero energy, as flaws in the heating system specification lead to greater energy demand than expected.

**Olympic Energy Systems** and the local **Structures To Go** have a different (simpler and less expensive) way to achieve Zero Energy Buildings, following 3 basic principles:

- Appropriate Size (Small)
- Efficient Components (SIPs)
- Solar Energy (PV Electric)

An 8 x 12 office built using 4 inch nominal Structural Insulated Panels (SIPs) and 1200 Watts of net-metered solar power (say, a 2 x 6 PV array), for a cost of \$16,000, is a Zero Energy Building. The amortized cost over the PV service life of 25 years is \$50 per month—the best rent you'll get anywhere.

Where are we going with this ZEB concept? At the current and projected cost of solar energy systems, especially PV, with rising energy costs, and with aging conventionally built homes and small businesses, there is a compelling need for affordable space. That space can be used for office, workshop, studio, or many other uses. Total immunity against energy price trends is real security. Buying locally made SIP panels goes to support a sustainable community. Studies have shown that building a separate building for more space is more cost effective than remodeling existing structures. Such existing structures will become more difficult to heat...

See a **ZEB** Office on the Front Page...

**North Olympic Peninsula News**



**A Good Sign—** Seeing this in your trek through town is a good sign.

People For Local Power succeeded in putting the Jefferson County PUD/ Electricity issue on the ballot this fall!



Port Townsend in Jefferson County in the State of Washington

Volume 8, Issue 1  
Special Issue  
Fall 2008

Olympic **RE News**

**Renewable Energy** *Olympic Energy Systems, Inc. 907 - 19th Street Port Townsend, WA 98368 (360) 301-5133*

- Solar Electric*
- Solar Thermal*
- Wind*
- Hydro*
- Ocean*
- Geothermal*
- Biomass/fuels*
- Efficiency*

**'OPS Manual' Available! (Olympic Peninsula Solar Manual)**

The OPS Manual is part of the ongoing public education & solar energy industry building goals of a local energy company.

The industrial age of the past three hundred years is identifiable by its growth in human population and standards of living, marked by consumption of vast amounts of stored fossil fuel energy and other resources of the earth, often characterized by enormous waste. We have been spending our energy savings.

The post-industrial age is identifiable for its explosive growth in technology and reliance on renewable energy and lower overall energy consumption per capita. We will have little choice but to begin to spend our energy income from the sun.

As the world transitions from the industrial age to the post-industrial age, questions begin to arise as to how a more sus-

tainable and healthy world will be achieved and who will manage it. Indeed, we are all involved in the transition, and we all will have opportunities to contribute, but what are the governing principles? What is the basic structure and strategy for moving ahead in a fair and judicious manner, with protection for the remaining resources of the earth?

The answers are already emerging, as free market capitalism is embraced on a supranational scale, with globalization of commerce and ideas becoming more and more under the control of corporations. Nationalism is giving way to corporatism. Can we maintain democracy with this reality?

The manual's Abstract asks these important questions. The manual seeks to express the importance of a wider perspective on energy and education with these objectives:

- Reduce Energy Consumption
- Finance RE with efficiency



Learn to be Energy Managers  
Develop an Energy Plan  
Consider Embodied Energy  
Build Solar Energy Industry  
Invigorate Populism

The manual shares information on the process of developing solar energy systems— PLANNING, SPECIFICATION, INSTALLATION, and the awaited COMMISSIONING. Economics, Cost Modeling, Lessons Learned, Strategies, and References to websites and a growing list of contractors now in the solar business are provided.

More information is available at the Olympic Energy Systems website:

[www.olympicenergysystems.com](http://www.olympicenergysystems.com)

**HANDY ENERGY TIDBITS**

- **1 KWh = 3,413 BTUs**  
A unit of energy, or power over time  
1 BTU = Heat 1 lb H<sub>2</sub>O 1 deg F
- **85,000 BTUs/gallon**  
Propane; 115,000 BTUs in Fuel Oil
- **3.2M BTUs per m<sup>2</sup>**  
per year collectable in the Pacific Northwest (1000 Watts/m<sup>2</sup> in the sun's rays)

**Inside this issue:**

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**News and Announcements**

WHAT	WHEN	WHERE
Energy Efficiency Expo	October 2008	Lynnwood, WA
ASES National Solar Tour	SAT OCT 4, 2008 10–4 pm	USA—see <a href="http://www.ases.org">www.ases.org</a>
Community Solar Seminar	October 31, 2008	Ellensburg, WA

## WHO WE ARE—Olympic Energy Systems, Inc.

Olympic Energy Systems, Inc. was founded by an electrical engineer in 2001 as a renewable energy consulting firm specializing in solar photovoltaic design. The company can assist in the application of a variety of alternative and clean energy technologies—solar, wind, micro-hydro, fuels, energy efficiency and energy management. Company goals are common to all clients:

**Optimum Performance**

**Positive Economic Return**

**True Sustainability**

Company operations are located in Port Townsend, Washington and primarily serve the North Olympic Peninsula and other portions of the state. Olympic Energy Systems uses local licensed contractors for installation. Fees are paid only upon successful project completion, which reduces the inherent risks of high tech solar to the clients.

The founder and former Boeing engineer, Jonathan Clemens, relocated from Texas, where he was involved in renewable energy activities. Serving on the board of the Texas Solar Energy

Society (TxSES) proved a valuable experience for him. TxSES and the Texas Renewable Energy Industries Association (TREIA) hosts the annual Renewable Energy Roundup and Sustainability Fair in Fredericksburg, TX, where Jonathan has spoken about the Economics of Energy.

FREE Site, Cost, and Economic Assessments. Let our **System Architects** help you. For more information, contact:

Olympic Energy Systems, Inc.  
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*Community Solutions*—Jonathan visits Hull, MA (near Hingham, south of Boston), with its own wind turbine [see background].

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A network of experience and licensed professionals who install solar energy systems. Recent additions include: Jarmuth Electric, Current Electric, H2O Plumbing Contractors, Extra Mile Tech & Electric, Northwest Gas Supply & Plumbing, Precision Plumbing, and more every month.

Check out the great workshops at Solar Energy International's website:  
[www.solarenergy.org](http://www.solarenergy.org)

The San Juan Series occurs in Spring and Fall annually.

See next page for snapshots of recent projects...

Two can travel round trip cross country with a Sleeper room and meals included for about \$1500—on Amtrak!

Sincerely, Editor

## BOOK REVIEW—"The Citizen-Powered Energy Handbook" by Greg Pahl

The book addresses the topics of the day:

Peak Oil  
Natural Gas Crisis  
Global Warming  
The Long Emergency (precipitated by Peak Oil)  
Relocalization Movement  
Energy Cooperatives  
And more...

You will find these interesting chapters:

1) Our Energy Choices (Just The Beginning, Energy Survival Plan, Our Energy Di-

lemma, Our Energy Options, Renewables, Other Strategies, Conservation)  
2—7) Solar Energy, Wind Power, Water Power, Biomass, Liquid Bio-fuels, Geothermal  
8) The Community Solution (The Big Picture, Community-Supported Energy, Groups That Get It, Barriers to Progress, Changing the Model, Changing the Debate, The Wrong Solution, Security and Opportunity)

To avoid yet another corporate dependency or tyranny, renewable energy needs:

- Strong Community Support
- Local Ownership

Read about the Post Carbon Institute, the Community Solutions organization (in Yellow Springs, Ohio) and its Agraria program, and more. A good reference and a good summary of the state of the art in solar.

Another book worth reading is US Rep. Jay Inslee's "Apollo's Fire", which details a lot of technology and businesses attacking head-on the challenge of producing clean renewable energy. Still, it is not quite the prescription for another "Apollo Program" for energy.

That's right, discrimination is the practice of the NPBA (North Peninsula Building Association), because its current president, Kevin Russell, has a beef with a local SIP entrepreneur, whose SIP products are supported by another company, Olympic Energy Systems.

Kevin Russell should resign as the President of the North Peninsula Building Association. His demonstrated lack of professionalism and zeal for anti-competitive practices are leading the association down a dark road.

was to have no booth at the Expo!

If seven years in the local renewable energy business and a co-organizer role in the 2001 through 2003 Olympic Energy Expo can't get you into a new energy expo, then what can...

- A) Connections?
- B) Membership in the NPBA?
- C) Non-association with a local Structural Insulated Panel (SIP) manufacturer?

Answer: C.

## Editorial—The NPBA Fiasco (Energy Expo 08)

When Olympic Energy Systems applied in January 2008 for an exhibitor booth at the NPBA's Home Remodel & Energy Expo held in March 2008, a gracious "welcome" was kind of expected.

A follow-on phone call in mid-February was met with a cold "never heard of you", later told that entry on a Waiting List was made.

Later still, despite space in an outdoor area (at the Sequim High School), the NPBA representative told the President of Olympic Energy Systems that the company

## Solar Energy Projects in 2008



The SWISH—Solar Wall Interface Space Heater. Works on the principle of thermosiphoning, heating in the cool months and cooling in the warmer months (with venting).



Greenspace completes another installation. This system in Port Angeles cost a record low of \$6.50 per watt.



Another row of PV panels was added below this array, for a total of 3200 watts, in this grid-tied battery backed up solar electric system in Sequim, WA.



This building, a pop-up, can be assembled and in working order in a half hour. Intended for Emergency Management, it is quickly deployable.



The Heliodyne dual flat plate collector installation went in shortly after this new building was framed and shelled. The preheat system will save hundreds of dollars per year. Port Angeles, WA.



30 evacuated tube solar hot water collector for a preheat system in Sequim. Nearby is 3200 watts of PV power.



This is one of the last Heliodyne external heat exchanger systems with Solar pumping. Olympic Hills Lodge, Port Angeles.



Bainbridge Island is home to this Heliodyne dual flat plate collector system. Heliodyne redesigned their Solar DC pumped external heat exchanger system, opting for a simpler AC pumped system. Works well, providing 80 gallons of preheated domestic hot water.



4000 Watts of grid-tied PV and a Heliodyne dual flat plate collector solar hot water preheat system. Bremerton.



A visit to this 10 KW Bergey site near Ellensburg is a precursor to wind monitoring projects near the San Juan Islands.



A SIP panel playhouse will be receiving a solar electric system for lighting and modest utility use.

A new debris gate atop a 440 foot head hydro power system will help maintain a continuous 40 KW year

Also, a barn lighting system in Chimacum, and more.



These 1600 Watts perform for a grid-tied battery backed up system west of Port Angeles.