



Oregon Association of Professional Energy Managers

Mission Statement: To advance the understanding and practice of sound energy and resource management principles, and to provide a network among business, government, and utilities for information, education, and leadership.

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SPRING FORUM – FIND OUT ABOUT “BIOMASS UTILIZATION” AT THE SUMMER FORUM!

Please join us on Friday, June 15, 2005 at the McMenamins Old St. Francis School in Bend, as we bring together an excellent mix of speakers to give you the inside scoop on "Biomass Utilization". This is a great opportunity to network with other professionals and to keep up-to-date on energy management trends and issues. To register online go to <http://www.regonline.com/124810> and follow the easy instructions.

Plan to stay the weekend in Central Oregon, either at the McMenamins Old St. Francis School, or one of the other Bend establishments. Also while in Bend, consider a raft trip on the Deschutes river.

UPDATED WEBSITE COMING SOON!

The Oregon APEM website is being overhauled and updated. In the coming weeks a new website with all new graphics, layout and copy will be unveiled. The website will be easier to read and will be easier to navigate. Oregon APEM members have repeatedly asked for the presentations from the forums to be posted to the website. You ask and we deliver. All forum presentations going back to 2004 will be available on the website. More features will be added over the coming months such as posting our quarterly newsletter. We are also exploring allowing members to join and renew their memberships online, as well as paying for and registering for forums. Stay tuned as the new and improved website is launched. An email will be sent out soon announcing the new website and the new website address.



Oregon Association of Professional Energy Managers

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PRESIDENT'S CORNER – SPRING 2007



My how time flies! It seems like we just finished our Spring Forum and here we are getting ready for the Summer Forum. For those who were able to attend, I hope the Spring Forum on lighting efficiency was as informative for you as it was for me. Emerging technologies are always fun to learn about. We can learn about what works, what doesn't, and then decide for ourselves if

and/or how we wish to incorporate what we've learned into building designs.

My most recent exposure with LEDs was this past Christmas. I'm a bit of a Christmas fiend so my house has always been covered with lights. However, I live in a relatively small community and have a bit of a reputation for conservation. It felt a bit hypocritical to be burning 1500w/hr each evening with traditional c-7s while extolling the virtues of turning lights off in our local schools. However, thanks to Costco, the years of hypocrisy ended this past Christmas. At Costco I found 100-light strings that used a mere 4w per string. My house ended up w/12 strings of lamps, using less total electricity than my 60w porch light! And...they looked great! And, my reputation was intact (many of the neighbors commented...). Thanks to Kelly, Reid and Glen for your excellent presentations!

As I mentioned at the Spring Forum, Oregon APEM has been extremely beneficial to the work I do for the Gresham-Barlow School District. Each board member would agree to similar impacts for the work they do. To that end the board determined to focus a bit more this year on outreach than we have in the past. As of this writing we have two outreach opportunities scheduled, both of which will have occurred by the time this is published. I'll keep you posted on how they went. One of the opportunities involves Oregon APEM acting as a vendor at the 2007 Oregon School Facility Manager's Association annual conference. This event is well attended by school facility managers state wide. If even a handful join and can take information on helpful practices and procedures back to their districts then we feel we will have accomplished our mission.

Finally, we are extremely interested in making sure we're meeting the needs of our members. While attendance at forums is one indicator, we're hoping you will take advantage of the opportunity to fill out our survey when you get a chance (we distributed one at our last forum and intend to at future ones). We exist for your benefit!

Don't forget the summer forum in Bend on June 15!

Dave Cone

2007 Oregon APEM President

Building Operators Certification Level I Courses Coming Up

BOC is a professional development program created by The Northwest Energy Efficiency Council (NEEC), and delivered in Oregon by NEEI. It is designed for operations and maintenance staff working in public or private commercial buildings. It certifies individuals in energy and resource-efficient operation of building systems at two levels:

Level I - Building System Maintenance and Level II - Equipment Troubleshooting and Maintenance.
2 Locations with distance learning IP video held at both sights for Level I:

Lane Community College 4000 East 30th Avenue, Eugene, OR
Southern Oregon University Hannon Library, Ashland, OR

SCHEDULE: The classes will be held from 8 AM to 5 PM originating at:

June 20, 2007 BOC 101 - Building Systems Overview Hannon
June 27, 2007 BOC 107 - Facility Electrical Systems LCC
July 18, 2007 BOC 102 - Energy Conservation Techniques LCC
July 24 & 25, 2007 BOC 103 - HVAC Systems and Controls Hannon
August 8, 2007 BOC 104 - Efficient Lighting Fundamentals LCC
August 15, 2007 BOC 105 - Maintenance and Related Codes LCC
August 29, 2007 BOC 106 - Indoor Air Quality LCC

FOR MORE INFORMATION CALL:

Erik Westerholm at 1-800-769-9687 or 1-541-463-3154

E-MAIL: westerholme@lanecc.edu

2007 APEM SPRING FORUM RE-CAP



Richard Jackson-Gistelli and Heath Kearns registering with APEM Board Member David Christie for the Spring Forum.

The March 16th Oregon APEM forum was held at Eugene Water and Electric Board, and was a perfect sunny northwest day along the beautiful Willamette River. The focus of the forum was on new lighting technologies and drew forty two attendees. Presenters were Kelly Gordon of Pacific Northwest National Laboratories, veteran presenter Reid Hart of EWEB, and Glen Whitehead of Ecos Consulting.

Kelly Gordon began the morning with an impressive presentation on LED lighting. She dispelled some of the myths such as “LED’s emit no heat, and that all LED’s are white light sources.” Kelly also let us know of some revolutionary LED applications now on the market, such as LED handrail lights and an LED light by Lucere for under cabinet use, a 3.5 watt post top LED, and a 19 watt desktop lamp by Lucesco. As well Kelly let us know about some very wonderful slippers and my favorite new LED. These are no ordinary slippers as they have LED’s in the toes that come on when you step into them for those night time sleep walks and are made by Bright Feet. Where do I get a pair of those Kelly?

Energy Management Certification Course Coming Up

EMC is an advanced certification program that requires the student to implement an energy-saving project, and measure the results. This 11 day program goes beyond the fundamentals and teaches a broad spectrum of energy management principles and techniques. Topics include building energy use, glazing, insulation, building envelope, heating/cooling, secondary HVAC, controls, central plant equipment, energy auditing, operation and maintenance. Each topic is covered by a discipline expert.

Date, Location and Cost:

July 9 – 20 at University of Oregon in Eugene. All participants are required to stay in-residence on campus for the classroom portion of the program. The EMC costs \$4,500 which includes, the course and all course materials, room and board, follow up assistance during the project implementation phase of the program, and an equipment lending program. Check with your local utility for scholarship assistance or call NEEI (1-800-769-9687) for more information.

The veteran Reid Hart stepped up to the podium with a presentation about EWEB’s lighting programs. Reid filled us in on incentives and rebates that EWEB is doing for specialized CFL fixtures for both single-family and multi-family projects, as well as the Energy Smart Design program for commercial buildings. EWEB is promoting High Performance T-8 technology and when this is coupled with BETC, Business Energy Tax Credit, produces a real nice cash flow picture for their clients. When the acknowledgement of an average 3% productivity gain that is often seen is added to the cash flow picture, these projects are greatly appreciated.

Glen Whitehead finished out the afternoon with a presentation on Energy Star Residential Lighting Applications. Glen explained to us what Energy Star meant and what is accepted under the Energy Star Lighting Specifications. Glen said that lighting accounts for up to 10% of residential electricity use which equals about \$11 Billion per year in power bills. So doing lighting is a nice easy reduction of some significant energy use. Much of this energy savings can be secured for the life of the home by using dedicated pin based fixtures. We were fortunate enough to witness the dramatic improvements that CFL dimming technology has made in the last five years.

Oregon APEM thanks all the presenters, attendees, and anyone who made the Spring Forum a ringing success. Don’t miss the next forum on June 15 at the St. Francis School in Bend, it will be on Biomass Utilization and is sure to be a success. We’ll see you there!

LANE COMMUNITY COLLEGE GRADS



Rob Currier is a Florida native who moved to the Pacific Northwest for the outdoors. He soon realized he had arrived in the nation’s hotbed for energy efficiency. By adding his LCC Energy Management degree to his bachelors in Environmental Economics from the University of Florida, Rob hopes to contribute to the region’s energy conservation goals. Rob has interned at Emerald PUD for nearly a year in their

Commercial Energy Services department. This position has given Rob experience with energy auditing, calculations, report writing, and presenting energy savings proposals to EPUD customers. Rob would like to continue work at a public utility in commercial energy conservation while pursuing his interest in commercial green building. His long-term goal is to be involved with regional power planning. Rob joined the Oregon APEM Board of Directors in 2007 as a student representative.

rcurrier@gmail.com



Ross Notebaart is currently enrolled in Lane Community College's Energy Management Program and will be graduating from the program this spring. For the past year, he has been an intern at the Eugene Water & Electric Board (EWEB) in their Commercial Energy Services division. This internship has allowed Ross to take the theoretical knowledge from the program and pragmatically apply it to energy conservation. It has also allowed him

to gain hands on experience in conducting building audits, energy savings calculations, building performance simulation through the eQuest program and recommending energy efficient upgrades. Ross has been an Oregon APEM member for less than a year now. The most beneficial aspect of this organization for Ross is being able to tap into the knowledge and resources of its members.
rossnotebaart@hotmail.com



Zed Langston, a native Oregonian, was born in Eugene. He is a second year student in the LCC Energy Management Program and expects to intern during Fall Term 2007. He plans to work in Las Vegas after graduation for about six months. After that time, he intends to return to Oregon and seek employment. zedlangston@Gmail.com



Allison Christensen Lane Community College Energy Management Student graduating Spring 2007. I have some interest in all aspects of what I am learning. Before I started attending Lane I volunteered with Tualitin's watershed council and with Yachat's Youth and Family Activities community education in Yachat's. I enjoy the Northwest and I would like working in places throughout the West. I specifically have an interest in

educational programs coordination. alichristensen@gmail.com



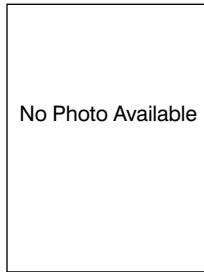
Chris Fuller is a native of the Pacific Northwest and will be a graduate of the LCC Energy Management Program in June of 2007. Chris completed an internship with McMinnville Water & Light, in the Conservation Department during the summer of 2006. At McMinnville Water & Light Chris preformed residential audits, processed rebates, and inspected conservation installations and measures. Chris's Goal is

to stay in the Northwest and find employment in the residential conservation sector, and he is also interested in promoting conservation education. chrisfuller01@hotmail.com



Talitha Bridges was born in England, grew up in Southern California, and for the past nine years has been happy to call Oregon home. Talitha will be a graduate of the LCC Energy Management Program in September of this year. Talitha has worked in the LCC Recycling Department and was a volunteer with the Water Conservation Retrofits at Lane Community College. Talitha's goals are to find a position in Resource Conservation

Management or Resource Conservation Education. She is excited about and interested in teaching energy conservation and implementing energy efficient methods.
tillybridges@yahoo.com



Pam Bielefeld will have completed both the Renewable Energy classes and the Energy Management classes at LCC this June. In July 2006, she began work as Energy Intern in the SB1149 department at Willamette Education Service District (WESD) in Salem. She attends classes at LCC two days per week and works the remaining three days for WESD. Pam's work has included: determination of eligibility for SB1149 funding

for schools in 84 districts; historical utility data entry into the proprietary database and research of possible data anomalies; support for the several project managers at WESD, including EUI charts and BETC applications. staragal@hotmail.com



Oregonian **Ry Heller** is graduating this spring with a degree in Energy Management; he will return next year to obtain a Renewable Energy degree. Ry is also studying drafting techniques using AutoCAD. He has participated in 3 internships: At Marshall's Heating and Cooling, he conducted HVAC pressure diagnostics using a blower door; at Salem-Keiser school district, he worked with Davd Furr, using Utility Manager and Data

Loggers, analyzing energy use, and discovering inefficiencies; at Solar Energy Design Co., Ry installed photovoltaic panels. Previously he worked in residential construction using alternative materials and custom designs. He is interested fusing energy efficient/renewable energy methods and technologies with building designs to create sustainable, affordable homes and communities.
ry.heller@gmail.com



My name is **William "Brian" Stephens**; I am married going on 17 years, father of 4, and foster parent of over 40 children in the last 4 years. My interests are in commercial energy management. I have a wide variety of experience, ranging from commercial truck driving, electrician, to commercial lighting & HVAC energy management. After 7 years of schooling I am looking forward to putting my knowledge to practical use. I have a good

knowledge of excel, Microsoft Word, and eQuest. I would prefer to stay in the Oregon area, but I am not opposed to moving if the need arises. wbjcs54@msn.com

ASK THE ENERGY PERSON

Dear Energy Expert,

I recently viewed a movie entitled "An Inconvenient Truth." This movie recounts the potential disasters that will befall mankind as a result of mankind's mismanagement of the planet's natural resources. How likely do you think it is that the dire predictions in this movie will come true? Also, how likely is it that the predicted global warming is a direct result of man's activities on this planet?

Signed

Concerned (and maybe a bit scared)

Dear Scared,

As with most questions received by the Energy Person, it was important for the Energy Person to do some research on this rather delicate topic before responding with a thoughtful and potentially brilliant answer. For this writer an inconvenient truth is something along the lines of "ahem, I uh believe, uh, your uh zipper needs attention," or, "sorry honey but there's no milk for the cereal this morning." Not, "THE POLAR ICECAPS ARE GOING TO MELT AND WE'RE ALL GOING TO DIE!" For some, granted, that would be a mere inconvenient truth (let's say, for example, those whose lives do not directly depend on the existence of polar ice caps). However, for many of us, the fact that "THE POLAR ICE CAPS ARE GOING TO MELT AND WE'RE ALL GOING TO DIE" can have a bit of a sobering effect. I for one, while wishing to be careful to not appear alarmist or over reactive, share the concern of many that THE POLAR ICE CAPS ARE GOING TO MELT AND WE'RE ALL GOING TO DIE!

Having said that, the Energy Person wishes to look objectively at the data and present what he believes to be an educated and intelligent response to your first question, which I believe was, "ARE THE POLAR ICE CAPS GOING TO MELT AND ARE WE ALL GOING TO DIE?", or something like that.

In his movie "An Inconvenient Truth" Al Gore cautions that polar bears are quickly losing their habitat. Obviously Mr. Gore hasn't been to the zoo lately. Each year they seem to be EXPANDING the polar bear habitat. What do you have to say to that Mr. Gore? Hm-m-m-m-m? Also, if you may have noticed, Mr. Gore and his friends seemed to have taken all of their temperature readings OUTSIDE! How scientific is that? How many of us actually spend our time out there? In the summer its too dang warm and in the winter its too dang cold. Being the adapters we are, most of us spend our time in environments that have temperatures that haven't changed significantly in years. How do you explain that Mr. Gore? How's that for "an inconvenient truth?"

Also, Mr. Gore, who seems to have an affinity for the cute polar bear, never mentions the fact that most of them drink Coke. As we all know, Coke is a beverage best consumed at 38-40°f. How do you explain those kinds of temperatures in the Arctic regions? Obviously the polar bears have contracted with an outside firm to raise the temperature of the Arctic to serve their own selfish purposes. It seems we have yet another "inconvenient truth" Mr. Gore.

One "inconvenient truth" after another, tsk tsk.

Mr. Gore, in his alarmist movie, would also have you believe that your chances of contracting Dengue Fever will increase over time as our current climate warms up, making it more attractive to Dengue's and their ilk. Well Mr. Gore, I personally have never seen a Dengue and neither have any of my friends. But suppose we do? Do you, Mr. Gore, think we would sit idly by while they try to foist their fever upon us? Mr. Gore, I think you underestimate us!

And, don't even get me started about the "greenhouse gas" thing. I think we all know, Mr. Gore, that plants give off oxygen, NOT carbon dioxide. So what do you think you would expect to find if you walked into a greenhouse with a gas meter Mr. Gore (aside from the air around the bean plants...)? Again, another case of science and data being misused in order to mislead the unsuspecting for selfish purposes.

Finally, Mr. Gore tells us that our planet's air contains more CO2 now than any time in the past 650,000 years! Please Mr. Gore. Isn't that a bit of a stretch? How many cave drawings have you seen that contain references to CO2 meters? Did Moses happen to mention anything about CO2 meters in his writings? While I won't go so far as to say you're making this one up, how do you explain that one reading June back in 647,993 BC? It seems you've conveniently forgotten that one!

So, while I share your concern that THE POLAR ICECAPS ARE GOING TO MELT AND WE'RE ALL GOING TO DIE, as you can see, given the real facts, there is no reason to be scared or even concerned about global warming whatsoever.

Energy Benchmarking & Assessment Tools Webinar

Description: This session will introduce participants to two important data collection tools for developing a SEMP. Topics include an overview of energy accounting, its value for benchmarking and ongoing monitoring, and assessment tools for understanding energy-related business practices. Recognition opportunities through ENERGY STAR will be discussed.

Date: 6/27/2007 12:00 PM – 1:00 PM

Contact: Anna Siebenborn

Email: asiebenborn@charter.net

Phone: 503-998-8394

ENERGY TRUST HAS FUNDS TO MAKE GREEN PROJECTS GREENER



Opsis Architecture's LEED® Gold certified building in Northwest Portland received Energy Trust incentives and Oregon Business Energy Tax Credits for incorporating energy efficiency measures and a solar electric system.

There's never been a better time to invest in energy efficient equipment, processes and construction. Energy Trust of Oregon, Inc., has \$16.2 available for energy studies and cash incentives for energy efficient measures in 2007, and funding will remain steady into the future.

Energy Trust's Business Energy Solutions program offers incentives and technical assistance for energy efficiency upgrades in new construction and major renovation projects, existing buildings and industrial and manufacturing operations. Since programs began in 2002, Energy Trust has invested more than \$92 to help make Oregon businesses and institutions use energy wisely.

"We're serving more customers than ever with our commercial and industrial programs and we're actively seeking new projects," said Greg Stiles, senior business section manager for Energy Trust. "Our programs are fully funded and we're looking to trade allies and past participants to continue to tap our incentives for cost-effective energy efficiency projects."

Commercial lighting has been a particular bright spot for Business Energy Solutions. "Lighting upgrades account for 40 to 60 percent of the savings gains for the program," said Stiles. "They are typically the most affordable upgrades available for most businesses and offer an attractive return on investment. Lighting is a great first step for a facility's energy management plan."

The process is a simple one, which makes participation easy. Lighting trade allies submit proposed projects during the first week of every month and receive approval in just a week. After implementing a successful lighting project, many participants decide to tackle other measures, such as HVAC upgrades to reduce their energy consumption even further. While participants are initially driven to make lighting upgrades to save energy, many of them see equal value in non-energy benefits such as morale, productivity and safety improvements, as well as enhanced light quality and comfort.

Gas-fired high efficiency condensing boilers are an increasingly popular solution for space and water heating in commercial buildings. With new models performing at well over 90 percent efficiency, the initial investment is repaid quickly through energy savings. Adding direct digital controls to this state-of-the-art equipment can dramatically improve thermal comfort while lowering natural gas consumption as much as 35 percent. This equipment is so efficient that a facility can often reduce the number of boilers required to meet demand, providing the extra benefit of more space in mechanical areas and reduced maintenance.

"Facility managers are doing a great job of educating owners and developers about the benefits of investing in energy efficiency," said Stiles. According to Stiles, reducing energy use by 30 percent can lower operating costs by \$25,000 per year for every 50,000 square feet of standard office space. In an office property, energy is typically the single largest operating expense, so reducing energy consumption increases net operating income and building asset value.

Energy Trust is funded through a public purpose charge paid by Oregon customers of Pacific Power, Portland General Electric, NW Natural and Cascade Natural Gas. "This is money that customers are investing in our state's energy future," said Stiles. "We want customers to take advantage of Energy Trust programs so they get the benefit of this investment."

With robust funding availability, Energy Trust program staff is actively seeking new building, existing building and production efficiency projects. Energy Trust now offers incentives for commercial solar systems up to 50 kilowatts, which is stimulating increased interest in solar in the business sector. "The message to trade allies is, bring us as many projects as you can. We're creating new business for trade allies in Oregon by helping more customers take advantage of Energy Trust programs," said Stiles.

Energy Trust of Oregon, Inc., is a nonprofit organization dedicated to changing how Oregonians use energy by promoting energy efficiency and clean renewable energy for Oregon customers of Portland General Electric, Pacific Power, NW Natural and Cascade Natural Gas. For more information, visit the Energy Trust website, www.energytrust.org, or call 1-866-ENTRUST (368-7878).

SCHOOL DISTRICTS URGED TO LOOK BEYOND SHORT-TERM 'FIX'

School districts statewide are learning the hard way that the short-term fix may be the most expensive choice in the long run.

Several school districts throughout the state already have learned this lesson first hand. One Oregon school district is having roof-top unit failures after just three years of use and another wants to replace its roof-top units only seven years after converting from a central system. Some owners have experienced roof-top unit failures within the first year of operation.

The compressor is 2/3 of the entire unit cost. Hence, once the compressor fails you might as well replace the entire unit.

Facilities that are served by RTU's have a lot of equipment to maintain. Consider a large middle or high school with 90 zones and that is served by 90 RTU's. This means 90 compressors, 90 fire boxes, 90 sets of OSA dampers, RA dampers filters, and actuators. It has been estimated that this can increase the maintenance obligation by a factor of 3. With dwindling budgets, schools are having a harder time maintaining these systems.

The Oregon Department of Energy has calculated the initial cost of central HVAC for a typical school building in Oregon to be approximately \$20 per square foot. A boiler is expected to last 30 to 50 years. Many older Oregon schools have boilers that are 70 years old.

Roof-top units, on the other hand, have a much lower initial price tag of \$8 per square foot. While initially less expensive, roof-top units life expectancy is 8 to 10 years. This means the total capital cost to a school district installing roof-top units is \$24 per square foot in 30 years and \$40 per square foot in 50 years.

If a school district needs guidance on this issue, the Department of Energy can assist. Members of the Department's Schools Team are available to present information on the roof-top units/central HVAC system issue to school facility and business managers, school board members, and superintendents. Staff can also explain how school districts can get financial assistance with the Business Energy Tax Credit Pass-through Option and Energy Loan Programs.

To contact the Department of Energy Schools Team, call 1-800-221-8035 (toll-free) or (503) 378-4040 in Salem.

	CENTRAL HVAC	ROOF-TOP UNITS
PROs	Long lasting (30 to 50 years)	Initial cost low (\$8/sq. ft.)
	Easy to maintain (2 fans, boiler, chiller)	System failure will affect small group of student/staff
	Lower utility bills (less than \$1/sq. ft.)	
	Easy to access	
CONs	Initial cost high (\$20/sq. ft.)	Short Life (8 to 10 years)
	System failure will affect small group of student/staff	Difficult to maintain (multiple fans, equipment, etc.)
		Higher utility bills (more than \$1/sq. ft.)
		Difficult to access during inclement weather - worker safety issue
		Units are exposed to weather
		Units are unsightly
		Air intakes close to roof-top level may draw in roofing material, off-gas and mold spores

BOMA Energy Efficiency Program: Low-Cost Operational Adjustments to Improve Energy Performance

Description: No- and Low-Cost Operational Adjustments To Improve Energy Performance will present best practices for operations and maintenance to improve the energy efficiency of buildings without capital expenditures.

Date & Location: 6/6/2007 11:00 AM – 1:00 PM
World Trade Center, 121 SW Salmon, Portland, OR
Contact: BOMA Portland
Phone: 503-228-9214

Lighting Retrofits – Interior and Exterior

A Portland General Electric Educational Seminar

Description: This free half-day seminar is about practical guidelines and basic principles for lighting retrofit projects in commercial and industrial buildings and surrounding areas. Attendees also get useful information about current trends and research. Free to PGE customers.

Date & Location: 6/7/2007 7:30 AM – 12:00 PM
World Trade Center, 121 SW Salmon, Portland, OR
Contact: Portland General Electric
Email: PGE.Seminars@pgn.com
Phone: 503-464-8020



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