

# EFFICIENCY

News From BPA—Your Northwest Energy Partner

## Mike Weedall New Energy Efficiency VP

Mike Weedall is the new Vice-President of BPA's Energy Efficiency organization. Weedall is not new to BPA and has a long-standing association with many energy professionals in the region. See the sidebar at the right "Voices from Mike Weedall's Past" for comments from a few of those individuals.

Here's where Weedall has been over the past 23 years . . .

- Manager, Energy Services & Electric Transportation- Sacramento Municipal Utility District (1993 - 2001)
- Director, Energy Management Services - Green Mountain Power Corporation, VT (1990-1993)
- Principal and Founder - Pacific Energy Associates (1985-1990)
- Program Manager, Conservation Finance - Bonneville Power Administration (1981-1985)
- Program Manager, Finance and Incentive Programs, and Special Assistant for Tax Policy to Deputy Assistant Secretary for Conservation - U.S. Department of Energy (1980-1981)

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### Voices from Mike Weedall's past . . .



**Cal Shirly, Snohomish PUD:** "One way to characterize Mike is visionary. He's a good strategist. He's been a great contributor to a lot of innovations realized at SMUD. Mike has a good longitudinal view of energy efficiency. His appointment will supplement a lot of credibility of BPA. He understands the utility perspective."

**Tom Foley, Member of the Board of the Energy Trust of Oregon, and energy consultant:** "I remember Mike from way back when I was with the NWPPC and he was with BPA when we were both starting out. I

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### Metering Equipment Assists with Energy Conservation Projects

BPA's Energy Efficiency group (EE) wants to share their metering experience in support of utility conservation programs. There are many metering tools available in the market. The intent of the EE effort is to demonstrate applications, equipment functionality and approximate cost. It is not a comprehensive summary of available products, nor is it an endorsement for specific products or vendors. The equipment described in this article or on the EE website (<http://www.bpa.gov/Energy/N/index.shtml>) has been generally used by EE staff.

EE has some equipment available for loan to utilities and end users. Please contact your EE Representative (see list on page 8) to learn more about what meters are available and how to make a request.

#### On/Off Run-Time Loggers

These are stand-alone devices usually powered by an internal battery that track total run time of a load, usually in hours, and in many cases track

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# ★ ★ ★ GALAXY OF STARS ★ ★ ★



Above: This 2 kW grid-tied solar system was purchased from Western SUN, the utility buyers cooperative. The system was installed by GSA, BPA, and DOE personnel, under the direction of Mike Nelson, director of WSUN, on the roof of the child care center at the GSA regional headquarters complex in Auburn, WA in June 2001. L to R: Robert Hart, GSA; Rick Jones, BPA/NSRI; Mike Nelson, Western Sun; Cheri Sayer, DOE; Michael Huber, BPA; and Maurice Grylls, GSA. Photo by Michael Okoro, GSA .



Above: The General Services Administration (GSA) Wenatchee, WA, federal building solar-electric system is a 10 kW 208 Volt three-phase system. It feeds directly into the grid of the Chelan County PUD. The six arrays are visible from the street. L to R: Rick Jones, BPA/NSRI; Chris Helmer, GSA; Michael Okoro, GSA; Darren Lenderink, GSA; Mushroom Montoya, GSA; Jerry Martin, GSA; Michael Huber, BPA; and Jim Clark, GSA.



Below: Left to right: Newt Loken , Solar Assist; Joe Savage, Emerald PUD; and Rich Walker, Elmira High School Vo-Tech Instructor, stand in front of a Trace Inverter at Elmira High School. The inverter is part of a 600 W photovoltaic system installed at the high school with the help of Emerald PUD, Western Sun, BPA, USDOE, and Frank Vignola of the Solar Monitoring Lab at the University of Oregon.



## Weatherization Day 2001



Above: BPA's Gene Ferguson (Left) and Governor Gary Locke talk to Washington children about energy efficiency. Left: Blower door test.

Washington Governor Gary Locke proclaimed October 30 Weatherization Day 2001. He and other public officials joined

children and other residents of an low-income apartment complex in Kent, WA, to celebrate the 25<sup>th</sup> anniversary of Washington's weatherization program. The apartment complex is in the midst of a weatherization retrofit. The governor spoke to the children about the importance of energy efficiency. Work crews then demonstrated the diagnostic equipment and techniques they use to make houses, apartments, and manufactured homes more energy-efficient.



Clearwater Power, Lewiston, ID, opened an EnergySTORE in its lobby offering compact fluorescent lights, water heater wraps, and fluorescent torchieres. The store sold 17,511 ENERGY STAR® CFL's in September using C&RD funds to subsidize the prices. Pictured: Sandy Scheffert, Clearwater's Energy Conservation Representative.

### Scappoose Students Study Energy Efficiency

Ken Corliss and Sherry Welter of Columbia River PUD, St. Helens, OR, visited Petersen Elementary in Scappoose in November to talk to students about energy efficiency and safety issues.

Fourth grade teacher Pattie Rosenthal has made it a point to educate her students about energy. Ken Corliss said, "Pattie has done a great job teaching them of the environmental issues and making of electricity."

Pattie is one of nearly one-hundred teachers to-date who have completed and returned the Energy Efficiency Web Links



Mike Judah, Principal at Petersen Elementary, Scappoose, OR, discusses energy efficiency and environmental issues with Pattie Rosenthal's students.

Survey that was mailed in early October. Teachers who return surveys are mailed a thank-you gift which includes CDs

containing energy education lesson plans and links, a compact fluorescent bulb, and other items. The purpose of the survey is to make teachers aware of the six best web links for teaching energy efficiency. BPA teacher interns selected the links. The survey will continue through 2002. Call your Energy Efficiency Representative for information on how to get teacher survey cards.



Left: Students created colorful salmon as part of their energy/environmental lessons.

### CFL Meter Exhibits Available

BPA's CFL exhibit was displayed at the Bangor Submarine Base in Washington during their Energy Awareness Week (October 22 - 26). Two of the CFL meter exhibits were loaned to the naval base along with brochures and helpful hints about the use of CFLs. The meter exhibit was popular because it helps the public visualize the decrease in the amount of energy required to light a CFL versus an incandescent lamp. The CFL meter exhibits are now available for BPA's utility customers to borrow and use as part of any displays they may be planning. Utilities can reserve them through their Energy Efficiency Representative.

-- Don Davey



When the City of Ellensburg, WA, sponsored "Torchiere Turn-In Day" on November 10, customers turned in 43 halogen torchieres. In return, they received a \$15 coupon towards the purchase of a new ENERGY STAR® torchiere. Pictured: Clay McMechan (left), City of Ellensburg, Chad Cabins (right), ENERGY STAR® representative for the Ellensburg area.



Teacher Pattie Rosenthal.

## Low-cost Farm Energy Efficiency Tips:

- Replace a motor needing rewinding with a new energy efficient motor. Rewinding a motor will typically reduce the efficiency of the motor by about 2 percent. After rewinding, a standard 100 hp motor with an original efficiency of 91 percent would operate at about 89 percent efficiency. With a new motor with an efficiency of 94 percent and at a cost of \$0.05/kWh, expect savings of about \$447 per year for 2000 hours of operation.
- Insulate hot water line runs. A typical non-insulated hot water pipe will lose four times the amount of heat compared to a pipe with one inch of insulation.
- Don't throttle an irrigation pump. The most efficient operation for an irrigation pump is at full flow. If a pump is designed to operate two pivots, but only one pivot often is operating, consider installing a smaller pump in parallel with the existing pump.
- Use fluorescent lighting in place of incandescent. Energy efficient T-8 lighting can replace the typical 4 ft. and 8 ft. lamps and compact fluorescent lamps can replace most incandescent. Fluorescent lighting will use about 4 times less energy than incandescent.
- Replace worn sprinkler nozzles; fix sprinkler system leaks.
- Farmyard area night lights are generally on a photocell. Install an override manual switch at a convenient location, such as inside the farmhouse. Adding the manual switch may require replacing the utility-owned night light with your own. This purchase will probably pay for itself within a year or two.
- In a heated shop, install a switch for the heating system on the large shop doors to make sure the heat is off when the doors are up.
- If a shop has a significant amount of natural lighting, install a photocell to turn off lights in naturally lit areas. This usually requires rewiring to group the proper lamps.

-- Dick Stroh



*Dennis Rea (left) who owns a farm about 5 miles east of Milton-Freewater, OR, discusses irrigation system efficiencies with BPA's Dick Stroh.*

For more farm tips, visit: [www.bpa.gov/Energy/N/news/ccc/tips.shtml#farm](http://www.bpa.gov/Energy/N/news/ccc/tips.shtml#farm)

## Rebate Business Brisk at CRPUD

Columbia River PUD began an appliance rebate program in November and three weeks later had 50 customers signed up for rebates. That was before the newspaper ad ran –the rebate business is very brisk now, according to Ken Corliss of the CRPUD Energy Services Department.

Under the program, customers can buy an ENERGY STAR® labeled clothes washer, dishwasher, or refrigerator and collect a rebate. If the customer purchases a qualified new appliance AND recycles their old appliance, the rebate increases. A CRPUD-approved recycler picks up the old appliance. Customers can also turn in an old refrigerator or freezer and earn a \$50 rebate. Removing an old refrigerator or freezer from service can reduce their electric bill by \$40-\$80 per year, and it reduces load on the CRPUD system. For buying a new ENERGY STAR® labeled appliance and recycling the old, customers receive . . .

	New Appliance Only	New Appliance & Recycling
Clothes washer, electric water heater	\$75	\$125
Clothes washer, non-electric water heater	\$25	\$50
Dishwasher	\$25	\$25
Refrigerator -- located in kitchen	\$25	\$125

## Demand Exchange Wins Top Honors

BPA's Demand Exchange Program (DEMEX) earned the 2001 Demand Response Achievement Award given at the Peak Load Management Alliance (PLMA) Conference in November. The objective of the DEMEX is to balance the power purchase price risk with options to meet the demands for power. DEMEX quickly and cost effectively facilitates voluntary peak load reductions using the Internet. BPA posts an offer to purchase curtailment when the wholesale market reaches a specified trigger level. The energy user goes to a website to evaluate the offer and can submit a pledge if desired.



*John Hairston*

By August 2001, the DEMEX had achieved 10,000 megawatt-hours of voluntary load curtailments and realized \$2 million in savings. As a result of the DEMEX's success, utilities such as Snohomish PUD, PacifiCorp, Sacramento Municipal Utility District, and San Diego Gas & Electric all have begun to run voluntary curtailment programs.

-- For information on how you can participate, call John Hairston at (503)230-5262.

## Energy Auditor and Inspector Training.

The Northwest Public Power Association (NWPPA) has received a number of requests to run another series of auditor and inspector training courses. Roger Ebbage, with the Northwest Energy Education Institute, will teach the classes .

- Residential Energy Auditor Certification - January 7-11, 2002
- Residential Inspector Certification - January 14-16, 2002

Classes will be held in Portland, OR, at the Oregon Institute of Technologies Metro Center Location in Clackamas. For more information visit their website at [www.nwppa.org](http://www.nwppa.org) or contact Charlie Roe at NWPPA, (360) 254-0109.

Congratulations to . . .

**Ferry County PUD (WA)  
and  
Springfield Utility Board  
(OR)**

**The first utilities to use the C&RD  
software to submit an annual  
report!**

## Recommended Website

While there are many websites out there that offer tips and information for the residential end-use consumer, the *ENERGY STAR*® website at <http://www.epa.gov/hhiptool/> is one of the best. This website offers a variety of online tools help consumers save energy and money when remodeling, repairing or improving their home. Among the tools is the Energy Yardstick, which helps consumers find out how well their home's energy use compares to other homes. Check it out.

-- Doug Untalan



A number of regional utilities, associations, and BPA are sponsoring *Harvesting Clean Energy for Rural Development II: Farming for Energy*

*Independence* on February 26-27, 2002. The conference will be held at the Pasco, WA, Doubletree Hotel.

The focus of the conference is economic opportunities for farmers to harvest new revenues and create vital rural jobs from a new "agricultural commodity" -- clean energy.

*For more information, contact Laura Aymond, NW Cooperative Development Center, (360) 943-4241; [ljaymond@qwest.net](mailto:ljaymond@qwest.net)*

## Distributed Energy Project

In the first phase of a project with BPA, Celerity Energy, Portland, OR., will identify distributed energy resources in the Northwest. Sixth Dimension, Fort Collins, CO, will provide the communications, control and coordination (network) technology to be used for scheduling, wholesale sales and other energy related business. The Pacific Northwest Laboratory, Richland, WA, will provide unique modeling and analysis of EnergyWeb resources.

"Distributed energy resources offer a terrific opportunity to alleviate a range of issues in the Northwest," said Dennis Quinn, Celerity. "Individually these resources offer little benefit in the context of new energy markets. By networking the resources into usable blocks of power, BPA and its customers gain a new resource to meet peak demands and increase system benefits." In phase two of the project, networked blocks of power will be aggregated in Northwest locations. The project will network resources at selected commercial, institutional and small industries and will target resource opportunities of 500 kilowatts or more. Smaller resources may be included, depending on the type of application and technology.

Visit the EnergyWeb page at <http://www.bpa.gov/Energy/N/tech/energyweb/> for more information.

-- Terry Oliver

**Visit Energy Efficiency's website at:  
<http://www.bpa.gov/Energy/N/index.shtml>**

## Metering continued from page 1

the time of use (TOU) of the operation. The most common applications are to log run time of a lighting system or an electric motor. Another application involves the use of a

## Weedall continued from page 1

- Presidential Management Intern - U.S. Department of Energy (1978-1980)

In addition to the above, Weedall served a brief stint this summer and fall with the California Power Authority. He has served on several boards, including the National Low-Income Consortium, the California Electric Transportation Coalition and the Consortium for Energy Efficiency.

Weedall grew up in southeastern Massachusetts. He has a master's in Public Administration from the University of Arizona, Tucson (1978) and a B.A. in Liberal Arts from Northeastern University, Boston (1972). In 1972 he was picked for the presidential management intern program and his host agency was the newly created U.S. Department of Energy. He rotated through different assignments in Washington, D.C., over the next two years. "During that time I discovered the world of conservation work and energy efficiency and fell in love with it," Weedall said.

John Pynch, a 26-year veteran of BPA and 14 years in Energy Efficiency, served for 18 months as Acting Vice-President prior to Weedall's selection. That experience will not go to waste. Weedall said, "During the coming months of my transition, John and I will partner to manage the Energy Efficiency group. I praise John for the job he has done over the past 18 months, and the value he brings to me and the entire group going forward. We are lucky to have him as a member of our team."

-- Jean Oates and Jack Odgaard

## Voices continued from page 1

*grew up in Rhode Island, and Mike had played tennis for Providence College—so there was a connection. The Energy Trust was very close to offering Mike a job before BPA snatched him out from under them."*

**Fred Gordon, Pacific Energy Associates:** "I've known Mike in his roles as a BPA employee, partner in a private firm, and as conservation director at two different utilities. He sees things from the business side, and the government, and the utility side. Through all of this I've found him to be immensely practical. He's a long-term thinker, but he knows how to create consensus and how to deal with things that work. He knows how to encourage energy efficiency initiatives that actually work."

standard split core current transformer (CT) that monitors current in an ON/Off mode. None of these provide power (kW) or energy (kWh) measurements, simply hours of operation. They can be quite effective in assisting in energy savings calculations from systems with relatively constant power consumption, such as, lighting systems, constant speed pumping and fans/blowers, and refrigerators. However, the actual power draw (kW) of the device needs to be measured or conservatively estimated in order to generate a reasonable energy analysis.

The lighting logger works by triggering the "On" status via a photometric sensor. The sensitivity of the sensor is user adjusted to accommodate a "bright" or "dim" light source. In order to reduce interference from other lighting, such as daylight, it is best to place the lighting logger close to the subject lamp.

The motor logger works by triggering the "On" status via an external magnetic field, i.e., the field generated when the motor operates. The minimum magnetic field required to trigger "On" is 40 mGauss, which equates to ~1 Amp of AC current, regardless of voltage, when the logger is right next to the insulated conductor. As the logger is moved away from the conductor, a larger amount of current is required to turn it "On". This is an important feature as the motor logger can be used to monitor any load that has sufficient current and, thus, magnetic field, to trigger it "On". Examples include: electric forced air furnace, hot water heater, range, etc.

The CT logger, as its name implies, uses a Current Transducer (CT) on the power conductor to the subject load to trigger the "On" status. The logger does not record current or energy, simply records "On" hours of the load. The CT can measure on status to as low as 0.25 A. The CT logger is more expensive than the other loggers.

Most of these loggers require a data extraction link (laptop, software, communication cable, or PDA with communication cable). In many cases, the run time data is available in time of use (TOU) records and can graphically show when the device operates.

For vendor information on these data loggers, or for information on the equipment listed below, check out the EE website previously provided.

- Hand-Held Power Meters
- 120 VAC Plug Power Meters
- Poly-Phase Interval Recording Power Meters

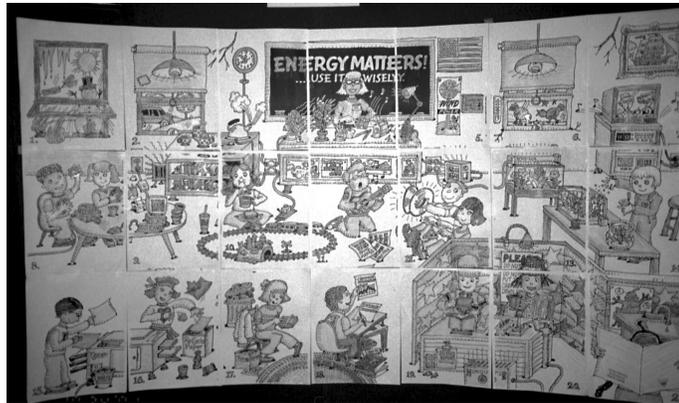
If you would like information about other types of meters, please contact Tony Koch at (206)220-6777.

-- Tony Koch

Right: David Kearns from the BPA Seattle office Community Conservation Challenge Team and Debbie Knipshield of Mason County



PUD #1, Shelton, WA, insert compact fluorescent coupons into customer bills. It was a cooperative effort: the CCC team helped Mason stuff CFL coupons; in turn, the following month Mason stuffed their bills with CCC pledge cards.



Above: As part of the Community Conservation Challenge, "Classroom-in-a-Box" was offered to utilities in October. The mural pictured is made up of individual coloring sheets that were included in the box. Over 1,000 boxes were requested by utilities. The lesson plans (suitable for 4th-5th graders) and benchmarks can be found at <http://www.bpa.gov/energy/news/ccc/schools.shtml>

## Community Conservation Challenge Ends

Between September and December Northwest residents participated in the Community Conservation Challenge. The CCC sponsored numerous activities to raise consumer awareness for the need to be energy efficient.

- Over 15,000 Northwest residents signed a pledge to conserve electric energy and entered the CCC contest to win an energy efficient Honda Insight.
- Thousands of fourth graders received the Classroom-in-a-Box, lessons on energy efficiency.
- Individuals, businesses and communities from the Northwest who took exceptional measures to conserve energy and influenced others to do the same were nominated by friends and utility staff. Over a dozen Energy Conservation Champions were recognized with a letter and a Certificate of Recognition.

Energy Efficiency staff asked utility representatives to give their opinions on CCC activities. Dale Anderson at Big Bend Electric Cooperative said, "The Classroom-in-a-Box gave me the opportunity to meet with teachers and they were very excited about it." Karrie Utz, Town of Coulee Dam, said, "Teachers were very excited about it and plan to use it again next year." Terry Huber at Town of Steilacoom, said an October presentation of materials to teachers was too late. "Teachers set their curriculum before the school year and have a game plan, so get to them early." Speaking about future activities similar to the CCC goals in general, Huber stated, "I think I'd like to see a consistent effort toward conservation. Keep it out in front of people on a consistent basis. We don't ebb and flow on recycling, and conservation must be the same: don't keep starting and stopping."

--Becky Clark

## Clark County Weatherization Day

In conjunction with the Clark County Department of Community Services - Housing Preservation Program (Department), Clark Public Utilities, the Northwest Energy Alliance, and BPA sponsored a National Weatherization Day and "Change a Light, Change the World" event on October 30 at a low-income housing complex in Vancouver, WA.

The event featured demonstrations of weatherization measures, distribution of compact fluorescent light bulbs to residents of the complex, energy conservation education, and education for children.

Clark Public Utilities and the Department have worked together for over 10 years to provide low-income weatherization services to Clark County residents. The PUD recently increased its 5-year commitment to the Department from \$200,000 to \$400,000 annually.

Fred Tulp of Clark Public Utilities replaces a pair of incandescent bulbs with compact fluorescent bulbs during Weatherization Day.



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