

Energy Services **BULLETIN**

Western's monthly energy efficiency and renewable energy newsletter dedicated to customer activities and sharing information on energy services.

Western launches Web-based tool for IRP submission

The sometimes-daunting process of integrated resource plan (IRP) reporting is about to get easier for Western customers with the introduction of the new online IRP data collection program.

All Western firm power customers are required to comply with the planning and reporting requirements of the Energy Planning and Management Program (EPAMP). Earlier this year, Energy Services introduced online compliance training to assist customers in EPAMP compliance.

This reporting tool provides resource planners with an online, standardized form for compiling the information required by EPAMP. Submitting the annual report via the pre-approved format ensures that critical information does not get left out of the report. You can save and use a past report as the basis for the next report, and as a reference to train employees who are new to the reporting process.

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Western's new IRP data collection program will create a template customers can use for future reports, and for training other employees.

Convenient features

The IRP reporting service allows you to create, edit and submit both the annual and five-year plan IRP reports. There are formats for compiling Small Customer Plans (SCP), Minimum Investment Reports (MIR) and Energy Efficiency and/or Renewable Energy Reports (EE/RE) as well.

It is not necessary to complete the report in one sitting, as the system allows you to save your work and return later. Customers will be able to print hard copies of their reports, and "clone" previous reports for easy updating the next year. After you complete and submit the IRP, the appropriate Western regional representative will review it and notify you

by e-mail when the report has been approved.

Customers who have used Western's IRP reporting spreadsheets to prepare their reports will find the format very familiar. "It is virtually the same as the Excel spreadsheets," explained Energy Services Representative Mike Radecki, who worked with Western's IT department to develop the program.

He added that the format will be new to customers submitting alternative reports, so he recommends that anyone planning to use the system to submit a report this year set up an account now. The database will go live Western-wide by Oct. 1, 2009, and is already in use

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Web-based tool

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in the Upper Great Plains region. So far, eight customers have registered in the system, and five have submitted IRPs using the program.

Register now

Resource planning is enough work without the pressure of figuring out a new computer program at the same time, Radecki pointed out. "Customers who register for an account now will have time to play around with the system, ask questions and get comfortable with the interactive Web site without a deadline hanging over them."

The first step is to create an account on the secure Self Registration site. Customers who have already registered can manage their accounts from this Web site, too. The Self Registration site provides an online form to collect permanent customer information. For the system to work properly, you must associate your account with the proper representative and region. If there is any uncer-

tainty about which region holds your contract, contact Energy Services.

Once the request for an account has been submitted, a Western representative will review the request and respond by e-mail. Upon approval, you will receive a temporary password at the e-mail address used for registration. Use this password for your first access to the secure Web site. The system will prompt you to change this password at the next sign-in.

Because the data-collection system is a secure site, the password is good for only 90 days. However, all the data reported for a customer account remains in the database so you don't have to reenter it each time. "Customers are likely to access the site only a couple of times a year, and resource planning staff may change from year to year, so the temporary password saves the trouble of keeping track of one more password," explained Radecki.

Working the system

To sign in, enter your "User Name," the e-mail address supplied during the initial registration process. If it is the first time signing in, you will be prompted to change the temporary password.

If you've misplaced your password or 90 days have passed since you last signed-in, you will need to request a "password reset." Select the "Forgot your password?" link below the login boxes on the sign-in page. After you request a password reset, you will receive an e-mail with a temporary password which you will have to change on your next sign-in.

To make a change to an established account, use the Account

Management application. This application allows you to modify your basic information, request access to additional applications and manage or reset your password.

The e-mail address you use to register is the contact point for communication from Western about IRP reporting. Your business will receive notices about reporting deadlines, and notices approving or rejecting a report submittal at this e-mail. Ideally, the e-mail should belong to the person who is the point of contact on your power contract with Western. However, a generic office address may be used instead. There is a field on the registration page for secondary e-mail contacts, and that person will be cc'd on IRP-related communication. If it becomes necessary to use a different main e-mail address, please request a new account.

Get started today

While use of the online reporting system is not mandatory, Western encourages all customers to register and use it. Interactive Web tools have the potential to streamline our communication with customers and improve service for more applications than just IRP reporting. We don't want our customers to miss out on the benefits of the computer age!

Instructions to assist you in using the online data collection system will be mailed with the notice that your IRP is due. Documentation to help new users will also be available online. But you don't have to wait to log on to the Self Registration site, or contact your Energy Services Representative for help getting started. ⚡

Energy Services Bulletin

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The mention of any service, product, or technology does not constitute an endorsement of same and Western, the Department of Energy, or the United States Government cannot be held responsible or liable for use thereof.

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CREBs provide funding for utility renewable energy projects

Electric cooperatives and municipal utilities have until Aug. 4, 2009, to apply for the latest round of Clean Renewable Energy Bonds (CREBs), an allocation of \$1.6 billion to fund new renewable energy projects.

The American Recovery and Reinvestment Act of 2009 added that amount to the previous allocation of \$800 million set in the Energy Improvement and Extension Act of 2008 (Div. A, Sec. 107). The Database of State Incentives for Renewable Energy (DSIRE) offers a helpful summary of the program, along with explanations of the differences between “new” and “old” CREBs.

A little background

CREBs are to public power providers what the production tax credit (PTC) is to investor-owned utilities—the “leg up” that makes a project economically viable, and that encourages development in a marketplace dominated by conventional fuel resources.

Essentially, the bonds act as interest-free loans for institutions developing the projects. CREB borrowers pay no interest, and the bondholder—CREBs lender or purchaser—receives a tax-credit from the Federal government theoretically equal to the amount of interest the borrower would have paid. The U.S. Treasury Special Investments Branch posts the daily rates for CREBs and other tax credit bonds.

Prior to the CREB program, created by the Energy Policy Act of 2005, not-for profit cooperatives’ inability to take advantage of the PTC had hampered their efforts to develop



Great River Energy received CREB financing for a wind turbine and solar panels installed at its headquarters building in Maple Grove, Minn. (Photo by Great River Energy)

renewable energy. Since the start of the program, the new bonds have contributed to significant growth in renewable energy capacity owned by cooperatives. Figures from the National Rural Electric Cooperative Association indicate that cooperatives received \$313,712,810 in CREB allocations in 2006, and \$138,973,580 in 2007.

Eligibility requirements

Anyone who can borrow with tax-exempt debt can borrow with CREBs, as long as their projects qualify. The project owner must be a public power provider, a state or local government or a cooperative electric company. If you are not clear about your company’s status, check Section 217 of the Federal Power Act for a definition of terms.

CREBs must be spent on projects that generate electricity by a “clean process.” Types of projects that can be financed with New CREBs include:

- Wind energy facilities
- Closed-loop biomass facilities

- Open-loop biomass facilities
- Geothermal energy facilities
- Solar energy facilities
- Small irrigation power facilities
- Landfill gas facilities
- Trash combustion facilities
- Marine and hydrokinetic energy facilities
- Qualified hydropower facilities

Under ARRA, “functionally-related and subordinate” facilities, such as transmission lines and interconnection upgrades, are also eligible for CREB financing. Other changes for the “new” CREBs:

- The federal tax credit is reduced to 70 percent of the interest payment.
- The bond holder can transfer the tax credit to another party.
- Taxpayers can carry forward unused credits into future years.
- Bond proceeds must be used within three years or a request for an extension must be made.

See CREBs FUNDING page 8

Utilities Promote Solar Water Heating

By Jill Cliburn

Editor's note: Jill Cliburn has written and collaborated on many reports and guide-books on renewable energy development for the Public Renewables Partnership, of which Western is a member.

Historically, energy services program managers in Western states have tended to view solar water heating as one of those do-it-yourself projects that worked for a while and then quit. But thanks to reliable new components and systems, installer training and tax incentives, solar water heating is making a big comeback from Arizona and California, to Colorado and beyond.

Electric co-ops and public power systems may play a role, too, as they recognize that solar water heating can be cost-effective for the customer and for the utility. A new information service from U.S. Department of Energy and new program planning tools from National Rural Electric Cooperative Association's (NRECA) and other sources support rising utility interest in solar water heating options.

More than DSM

In most states, solar water heating is treated more as a demand-side management measure than as a solar resource. Solar water heating qualifies to help meet renewable portfolio standard (RPS) goals in Arizona, Nevada, North Carolina and Washington, D.C., but for most states and for utilities that do not have immediate RPS concerns, solar water heating has to be more than just a compliance strategy. For these utilities, the benefits of solar water heating may include:

1. Reducing the amount of energy (kWh) that they have to purchase from power suppliers
2. Reducing the demand (kW) at peak times (summer and winter peak demand), which often drive the utility's overall wholesale electricity costs
3. Offering customers a green option that often delivers significant bill savings and a strong return on investment

4. Offering a competitive strategy if customers might switch to solar from propane fuel or another costly fuel source

Comparing systems

In 2009, Energy Star began to include water-heating equipment in its line of branded products. The chart below shows that solar water heating is a strong contender on the Energy Star list of efficient water-heating options.

It is an especially good alternative to the "on demand" water heaters that save kilowatt-hours but drive utility peak loads sky-high. To qualify for Energy Star branding, the solar water-heating system has to meet at least half of total household water heating needs, it must be certified by the Solar Rating and Certification Corporation (SRCC), and it must pass the Energy Star review. Certified systems can meet these requirements in places as far north as Helena, Mont., or Fargo, N.D.

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Water Heater Comparison

Water Heater	Energy Savings vs. Minimum Standard	Expected Life and Savings Over Life	Comments
Super-insulated Storage Tank (electric or gas)	10% - 20%	8 – 10 Years Up to \$500	Did not win Energy Star certification due to relatively low energy-saving potential. Lowest first cost; electric model may be load-controlled. May also be used as a solar storage tank.
Tankless "On Demand" (gas or electric)	45 – 60%	20 Years Up to \$1,800	Instant hot water, but for a limited number of fixtures at a time. Electric model adds to peak demand and power quality problems for electric utilities.
Heat Pump with Storage Tank	65% compared to standard electric water heating	10 Years Up to \$900	Works best in mild climates. High first cost, but useful for big hot water users.
Solar with Electric Back-Up	70 – 90% compared to standard electric water heating	20 Years Up to \$2,200 or more	Tax credits and other incentives currently available. Different designs work well in many climates. Proper siting and installation are key. Propane- or fuel oil backup are generally more expensive to operate.

Sources: U.S. DOE, EPA Energy Star

Solat Water Heating

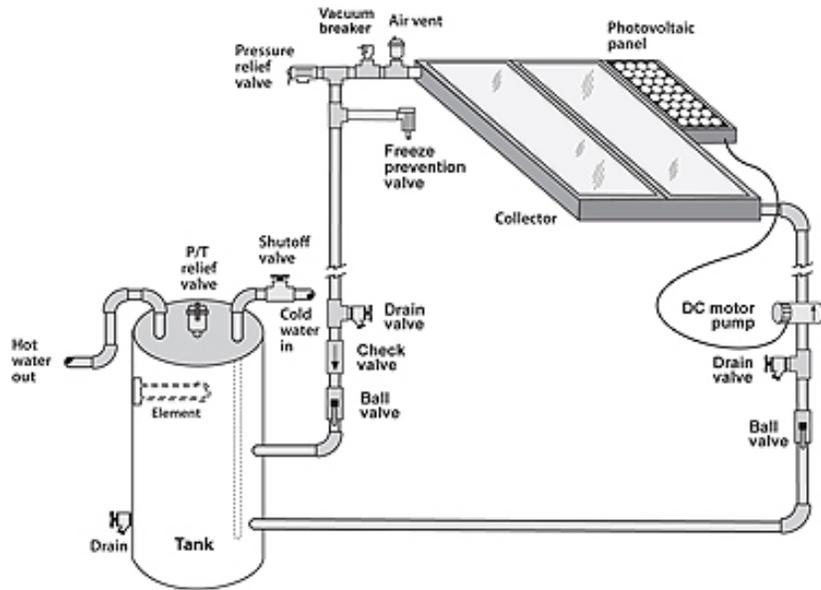
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Value to consumers

Still, electric co-ops and public power systems face challenges in providing quality assurance and effectively marketing their solar water-heating programs, so customers who would benefit most get a chance to participate. For example, in some communities, water conservation efforts have been so effective that small households would not see a return on their investment in solar water-heating for a very long time. In other communities, there could be lots of large families or public facilities and commercial customers that need lots of hot water, but solar dealers and trained installers might be hard to find.

Last year, NRECA's Cooperative Research Network (CRN) released a study on Solar Water Heating Best Practices and Economics for Electric Cooperatives by Cliburn and Associates, LLC (CRN Project 07-13), which gives practical tips for co-ops facing such challenges. It also includes a spreadsheet-based economic assessment tool. Co-ops are welcome to contact NRECA for that report. In Colorado, co-ops and public power utilities may benefit from similar tools, sponsored by the Colorado Governor's Energy Office, with outreach support from the Colorado Solar Energy Industries Association.

Another resource, available to all Western customers, is the U.S. DOE Utility Solar Water Heating program, (USH2O). This program supports networking among utilities, trade allies and stakeholders who are interested



The closed loop, anti-freeze solar water-heater is popular in colder climates because the antifreeze heat-transfer fluid in the collector acts as freeze protection. (Artwork by Florida Solar Energy Center)

in solar water heating. Sixty utilities, including co-ops and public power systems, are active in USH2O. They come from Sunbelt utilities, like Salt River Project and Silicon Valley Power, and also from northern locations, like Eugene, Ore., and Ontario, Canada. They share technical and marketing expertise and follow important policy development through the Web site and through free monthly conference calls.

Growing market

According to Larry Sherwood, who surveyed recent solar market developments for the Interstate Renewable Energy Council (IREC), these programs, coupled with Federal and state incentives, have had a huge impact on the solar water heating market in the past few years.

Solar water heating nationwide grew by 240 percent in 2006, when the Federal tax credit became avail-

able. This year, the cost-cap for the 30-percent Federal tax credit for solar water heating was removed, enlarging the total incentive for most customers, and the market is growing faster than ever. In 2008, Colorado saw more new solar water heating systems than California did, suggesting the combined strength of the Federal tax credits along with strong state-based promotion.

Several Colorado co-ops and municipal utilities have matched state-sponsored rebate funding for this technology. They are testing customer interest, and some, including United Power in Brighton, Colo., are tracking whether solar water-heating might also slow rising utility peak demand. For more information on the solar water heating load-impact and economics research, contact contractor Joe Bourg. ⚡

Want to know more?
Visit www.wapa.gov/es/pubs/esb/2009/jul/jul093.htm



TOPICS from the POWER LINE

Many decisions involved in HVAC design

Question:

A Colorado community is building six new elementary schools, using a prototypical design. They want to consider innovative HVAC design options. For the first time, air conditioning will be part of the system, but the system will need to be operated with existing staff. The system has to be simple (low-tech maintenance) and energy efficient. What should they consider?

Answer:

The terms “innovative” and “low-tech maintenance” can seem contradictory, but innovative can mean combining simple technologies for enhanced benefit. For instance, ducting building exhaust and fresh air intake through a heat recovery heat exchanger reduces heating and cooling costs, but requires only simple cleaning.

Choosing the system

Building energy management systems can be very user friendly if they are carefully planned out. Selecting the type of HVAC system is probably the most difficult decision to make, and depends heavily on the experience level of maintenance staff. Many school districts prefer to stick with HVAC systems they have used in the past, because they are familiar with troubleshooting and maintenance procedures.

The four-pipe fan coil systems,

with central mechanical rooms for the boiler and chiller, are the choice of many school districts—most of the system’s maintenance is on fans, pumps and filter change-outs. Ingenuity is needed in arranging equipment for easy maintenance and noise control.

Other school districts have gone with individual heating and cooling units for each classroom, with self-contained modules that can be removed and taken to a central repair shop. Neither of these approaches requires a high level of maintenance inside the building, and chiller and air-conditioner maintenance can even be contracted out.

Standardized central fan variable-air-volume systems, which supply varying amounts of heated or cooled air to satisfy temperature and fresh air needs are in use in some school districts. This system is more complicated to maintain on a daily basis.

A number of newer technologies being used in schools include ground source heat pumps, thermal storage and gas-driven chillers. Life-cycle cost analysis is the main method for deciding which system to use.

Do the maintenance

The adage “penny wise and pound foolish” too frequently applies to maintenance schedules. Routine maintenance often gets shortchanged as funds are allocated to items that directly impact education. As a

result, what is essentially preventative maintenance gets deferred, leading to indoor air quality (IAQ) problems or an emergency situation when the boiler or the heating system fails.

Dampers are the one component of the HVAC system that must be maintained. Fresh air, exhaust and return air dampers must be routinely checked for proper operation. A building lacking outside air cannot properly dilute indoor contamination. An outside air damper on an air handling unit that does not open or modulates to the improper position may not allow enough outside air into the building.

Lack of adequate fresh air leads to IAQ problems, but too much outside air creates excess heating and cooling loads. Changing filters on a regular basis greatly reduces the dirt and contamination that enter HVAC system components and then the air stream.

Boilers that are serviced annually provide more efficient heat. HVAC piping (i.e., steam, condensate, hot and chilled water piping) contains high concentrations of corrosion inhibitors to extend its usable life. The proper amount of outside air is an important part of HVAC design. Because most damper controllers can go out of calibration every few months, the entire HVAC system’s automatic temperature-control system should be checked and recalibrated

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Web site of the month:

DOE Recovery and Reinvestment www.energy.gov/recovery/index.htm

Ever since Feb. 17, when President Obama signed the American Recovery and Reinvestment Act of 2009 (ARRA), news about programs related to the energy industry has been rolling out at a head-spinning pace. To keep track of the latest developments—especially training and funding opportunities for power providers—why not go right to the source: DOE's Recovery and Reinvestment Web site.

Interactive features

The home page starts with an interactive list of the latest program news. Mousing over a number reveals the headline and a related picture, and clicking on the number takes you to the full press release.

Farther down the page, a bar graph shows how much of the funding for energy programs has been authorized, awarded and spent. The dollar amounts pop up when you roll the arrow over different-colored sections of the bars. Below the bar graph is a table that gives a breakdown of spending to date for specific projects in each category. Selecting the arrow to the left of the category opens a drop-down menu of projects.

The map of the United States at the bottom of the home page takes visitors to state pages. Here, you will find how much funding the state is receiving, along with news about programs in the state and, in some cases, a calendar for public meetings. There are also links to state energy offices, and energy-related agencies and resources.

Reports, announcements

An easy way to track major announcements, actions and spending since the Recovery Act began is to visit Communications, Plans and Reports. A bi-weekly report of press releases, press events, video and other communications is available in Excel spreadsheets.

The Formula Block Grant Allocation reports will be of particular interest to Western customers. Also in Excel format, these reports show the allocations by state and town for the Energy Efficiency and Conservation Block Grants (EECBG).

Weekly financial activity reports, Inspector General reports and communications from interested parties are also posted on this page. Get notified whenever DOE posts the communications, block grant and financial activity reports by signing up for the RSS feed.

Grants, incentives

Power providers and consumers both want to know what kind of financial help is available to them for investing in projects and improvements that will ultimately save energy and money. Funding Opportunities groups announcements by category: advanced research projects, electricity delivery and energy reliability, energy efficiency and renewable energy, fossil energy and science. Where available, reference numbers for searching Grants.gov follow each announce-

RECOVERY.GOV

Bookmark the DOE's Recovery and Reinvestment site to keep up with training and funding opportunities as they arise.

ment, most of which are linked directly to a description page.

There is no option on the Funding Opportunities page for searching by eligible applicant type, and there is no RSS feed for updates. However, most announcements go through Grants.gov, which provides RSS feeds and newsletters to potential applicants. You do not need to register in the system to receive the updates, but registration is required to apply for any grant.

The tax breaks in the Recovery Act target consumers, but knowing what kind equipment, systems and improvements are eligible can help utilities with program planning. Also, a bill stuffer based on this page would no doubt be greatly appreciated by members or customers.

FAQs, resources

First-time visitors to Recovery and Reinvestment may want to go straight to Ask an Expert: DOE Recovery Act Clearinghouse. This resource center will answer many of the usual questions about funding opportunities, employment and training and transparency and accountability.

Under Popular Topics, you will find links to the DOE EECBG and

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Want to know more?
Visit www.wapa.gov/es/pubs/esb/2009/jul/jul095.htm

Topics from the Power Line

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as prescribed by the installing contractor. Testing, adjusting and balancing should be performed as an annual check on the entire system to ensure it is maintaining design flow rates and set points.

Balancing not easy

Getting good energy conservation and good IAQ in the same building may seem like conflicting, even mutually exclusive goals. This is one of the challenges for innovative designers—how to minimize

energy consumption while maximizing IAQ. Finding that middle ground is now the Holy Grail for many HVAC manufacturers and designers, along with designing systems that are more easily accessible for cleaning and maintenance.

For leads on HVAC designers in your area that are innovative and work with schools, try contacting the Green Building Professionals Directory. ⚡

Web site of the month

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Weatherization Assistance programs, and to more information on tax breaks for residential and business consumers. This page also lists links to DOE program offices' Recovery sites.

Most importantly, the Clearinghouse provides contact information so you can submit a question by e-mail or talk to a representative at the DOE. In these interesting times for utilities, there is nothing like having an expert contact in high places to keep you in the know. ⚡

Want to know more?

Visit www.wapa.gov/es/pubs/2009/jul/jul094.htm

CREBs funding

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Tips for applying

The Internal Revenue Service (IRS) sets CREB application deadlines throughout the year, the current being Aug. 4. The application form is in Appendix A of IRS Notice 2009-33, which contains all the eligibility requirements participants must meet to be considered for an allocation.

The application must identify the project owner; describe the project, including location, regulatory approvals and financing plan; and specific dollar amount. Carefully follow the instructions in the notice to ensure that all the required information is in the application.

The Web site CREBs.org recom-

mends keeping projects small as small projects get first priority in funding. It is also important to note that the IRS will treat related projects as a single project. Public power providers, governmental entities and electric cooperatives are each reserved an equal share of the allocation. To submit the application, mail a hard copy in duplicate, accompanied by a copy of the application in electronic format on CD to:

Internal Revenue Service
TEB CREBs Allocations
1122 Town & Country Commons
St. Louis, MO 63017

Other resources

Each year, the IRS releases guidance on its Web site on how the program will operate, and to solicit

applications. Guidance specific to bond provisions in the ARRA are currently online. Or contact Zoran Stojanovic or Timothy Jones of the IRS Office of Associate Chief Counsel at 202-622-3980 for more information on CREBs. Questions on recent IRS Notice 2009-33 can be directed to Janae Lemley at 636-255-1202.

NRECA and American Public Power Association can provide guidance to their members. Western teamed up with those and other energy industry associations to sponsor the webinar, CREBS and PTC Update, on June 24. The Public Renewables Partnership has posted the presentations from the event on its Web site. ⚡

Want to know more?

Visit www.wapa.gov/es/pubs/esb/2009/jul/jul092.htm