

BULLETIN

The energy and planning resource for Western utilities

ENERGY SERVICES BULLETIN UNVEILS NEW FORMAT FOR NEW YEAR

Change your bookmarks! Starting in January 2014, we are unleashing the power of the Internet to bring our customers more timely—and more useful—news, as Energy Services Bulletin moves to a regularly updated blog format.

The new format combines the best features of the monthly newsletter and Breaking News, the blog Energy Services introduced four years ago. Energy Services Bulletin will continue to explore best practices for energy efficiency and renewable energy development. We will still highlight the programs and policies Western customers use to successfully plan and manage their energy resources.

Like Breaking News, however, the blog will have a continuous publishing schedule. Readers will now get news about training resources, industry events and funding opportunities when they can use it, not when it fits into a monthly window. The world of utility resource management is changing every day, and our goal is to keep our customers current with the latest developments.

SOME THINGS CHANGE

The monthly email that used to announce new stories will now recap highlights of the previous month. But readers can subscribe to the RSS feed and check in to see what's new throughout the month.

We believe readers will want to follow the blog because there will be more short, timely news items, along with the feature stories you expect from Energy Services Bulletin. These stories are a central reason for the change in format. Converting the newsletter to an electronic publication made it more accessible and sustainable. But sticking to the pre-Web, print-style schedule missed out on the most important feature of the digital age: instant publishing. We are excited about being able to provide our customers with utility industry news while it is still new.

Interactivity is another benefit of the blog format. Readers can now chime in with their own experiences, ideas and opinions. Those who have read Breaking News or other energy blogs will be familiar with this feature, but the opportunity to respond to feature stories is a first for our newsletter. All respectful, on-topic comments will be posted unedited. Check the comment policy to learn more about the guidelines.

SOME STAY THE SAME

Energy Services Bulletin subscribers will continue to receive an announcement the first of each month as they always have. (If you don't already receive the monthly email, subscribe now.)

The stories will still include links to businesses and individuals who are

happy to answer your questions in more detail. The link to the Energy Events calendar is still on the front page, and, readers who prefer a hard copy will still be able to download previous issues.

Like the monthly announcement, the printable copies will highlight the prior month's stories. Of course, if you want to turn a story about your utility into a bill stuffer or handout for member meetings, Energy Services is happy to set up a customized PDF for our customers. As always.

EVER EVOLVING

Finally, we will be taking advantage of another great feature of Internet publishing—interactivity. Not only are we eager to get your input on specific stories, we want to know what type of stories you find most valuable. We want to know if you are having a problem finding resources or contacts. We want your ideas, not only about the content you want to see in Energy Services Bulletin, but about the services we offer.

Actually, that part hasn't changed much at all. The mission of Energy Services is to give Western customers the tools they need to meet their energy planning and management goals. The best tools are developed through dialogue. Blogging is just one more way for Western and its customers to communicate.

So join in the conversation by visiting the new Energy Services Bulletin regularly to comment, debate and share your stories. You won't just be learning the latest industry news—you'll be shaping it. Keep in touch. ⚡

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SOUTH CANAL PROJECT ADDS SMALL HYDRO TO DELTA-MONTROSE PORTFOLIO

The newest power plant providing clean renewable energy to Delta-Montrose Electric Association (DMEA) was 100 years in the making, but well worth the wait.

The South Canal Hydroelectric Plant began generating power last summer and is expected to produce an estimated 27 million kilowatt-hours (kWh) of electricity. During its seven-month operating season, the facility will generate roughly the equivalent of the annual electricity use of 3,000 homes. The plant will also prevent about 275,000 tons in carbon dioxide (CO₂) emissions over the next 30 years. "And, it will save our members about \$2 million per year," added DMEA Communications Specialist Alex Shelley.

The fact that it took so long to build a project with so many benefits goes to show that in the power industry, timing is everything.

WATER-ENERGY CONNECTION

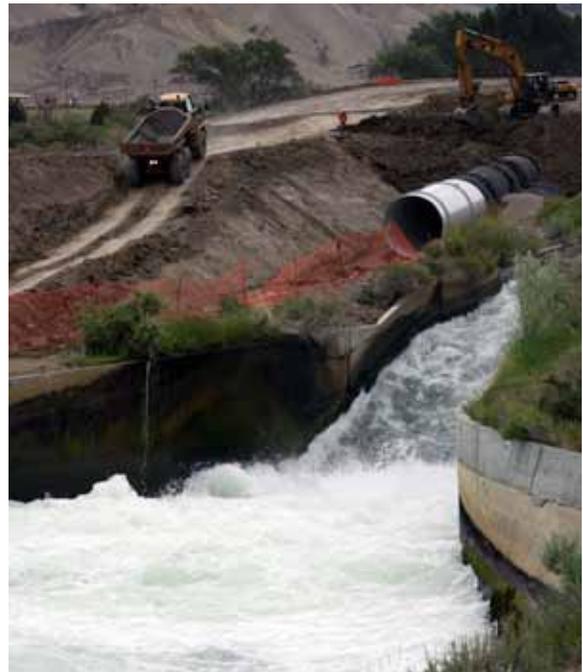
The South Canal draws water from the Gunnison River through the Gunnison Tunnel on Colorado's Western Slope to irrigate the Uncompahgre Valley before releasing the water to the Uncompahgre River. Built in 1909, the 5.8 mile-long Gunnison Tunnel, along with the canal is part of the Uncompahgre Irrigation Project. President William Howard Taft commit-

ted to several such reclamation projects in the West primarily for agricultural development, but electricity production was part of the vision too. The water falls 372 feet as it leaves the tunnel, creating the opportunity to generate electric power—enough to light every town and farmhouse in the Uncompahgre Valley, observed a New York Times reporter who attended the tunnel's 1909 opening ceremonies.

Over the ensuing decades, several attempts to harness that power were shelved due to the usual obstacles that beset renewable energy development. Low energy prices and concerns about the environmental impact of hydropower were most often the culprits in the latter years of the 20th century. A large facility in the 30- to 40-megawatt (MW) range was the last proposal that failed to gain traction. "It would have operated all year and changed the flow of the river, causing problems for irrigators," explained DMEA Renewable Energy Engineer Jim Heneghan.

TIMES ARE A-CHANGIN'

It took a new Colorado state law and rising electricity rates to bring attention back to the South Canal's energy potential. Colorado voters approved a renewable portfolio standard for investor-owned utilities in 2004, and subsequent updates to the law added requirements for public power providers. TriState Generation and Transmission Association, DMEA's wholesale cooperative, must provide at least 20 percent renewable energy to its Colorado members at wholesale. "The RPS only affected us indirectly, and we count renewable energy from TriState in



Construction crews place a penstock into the South Canal to convert water flowing through the Gunnison Tunnel irrigation system into 7 MW of electricity. (Photo by Delta-Montrose Energy Association)

our resource mix," explained Shelley.

However, State Bill 252, passed in 2013, called for distribution co-ops like DMEA to get 1 percent of their sales from distributed generation. Even before that legislation, an eminent rate hike by TriState had DMEA's board of directors looking into low-cost resource options. Thanks to a comprehensive integrated resource planning (IRP) process, the board saw the writing on the wall as far back as 2008, recalled Heneghan. "They issued a directive to get 5 megawatts of renewables into our portfolio," he said. "The IRP was critical in identifying small hydropower as the best option."

The South Canal offered the best resources, reviving the possibility that it could finally fulfill its destiny. "We announced the project at the Gunnison Tunnel 'Celebration of the Century'—its 100th anniversary—in 2009," said Shelley.

See SOUTH CANAL PROJECT, page 3

ENERGY SERVICES BULLETIN

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CHOOSE YOUR PARTNERS

For the hydroelectric project to succeed, DMEA had to gain the support of many stakeholders—growers, sportsmen and the general public. The Uncompahgre Valley Water Users Association (UVWUA), which manages the Uncompahgre Irrigation Project, was a natural partner. “The association holds the senior water-use rights for the project,” Shelley said. “Developing a secondary use for the water strengthens their rights and defrays some of their maintenance and operating costs.”

The partnership enlisted Mountain States Construction Company of Boise, Idaho, to build a generator that would not interfere with irrigation or impact water resources. The system is actually two separate power plants, a 4-MW unit just below the Gunnison Tunnel opening, and a 3.5-MW unit about half a mile downstream. A third site between the two could eventually be developed as a 900-kilowatt unit.

FISHING FOR SOLUTIONS

The facility’s modest size helped to ease public concerns about environmental impact—the water flowing through the canal follows the same course it has followed for 100 years. But balancing all the different interests and complying with the National Environmental Policy Act is never an easy process. “It takes commitment to work through everything,” acknowledged Shelley. “The public comment period helps to get all the issues on the table.”

Fishing, for example, turned out to be more of an issue than expected. Since fish from the Gunnison River inevitably detour through the tunnel, the South Canal has been a popular spot for generations of local fishermen. But it was necessary to place an electric gate at the tunnel entrance to keep large fish from swimming into the hydro units. “Even though fish are not ‘native’ to the manmade canal, a lot of groups and individuals were concerned about losing

their fishing hole,” said Shelley.

Heneghan pointed out that the canal was not designed for recreational purposes, and accidents—sometimes fatal—occur every year. Another reason to keep the fish from using the irrigation system to travel between rivers is that Gunnison River trout have become resistant to whirling disease. “It is more appropriate to keep them in their natural habitat,” Shelley explained.

Ultimately, DMEA worked with local benefactors to purchase a fishing spot along the Uncompahgre River as a replacement, a solution a UWUA spokesperson called a “win-win.”

INVESTING TO SAVE

To help finance the \$22 million project, DMEA secured a 21-year, low-interest New Clean Renewable Energy Bond from the National Rural Utilities Cooperative Finance Corporation. The member-owned, nonprofit co-op raises funds from the capital markets to supplement the loan programs for electric cooperatives.

The estimated \$2 million in savings from cheap hydropower will pay off the project in about 10 years, although direct payback wasn’t part of DMEA’s calculation, noted Heneghan. “With our wholesale rates scheduled to go up, the economics have only improved,” he said.

Electricity rates are not the only moving target influencing the future of small hydropower in Delta-Montrose territory. DMEA’s wholesale contract limits the co-op to owning no more than 5 percent of its power supply, a quantity based on sales. In 2016, that percentage will be recalculated and the board may be able to consider expanding to a third unit on the South Canal.

A few more years should not seem a long time to a community that waited 100 years to see a vision of clean energy reach its full potential. Especially when the community is already able to enjoy the benefits of the cheapest power its utility can find. ⚡



An electronic fish barrier at the entrance of the Gunnison Tunnel prevents large rainbow trout from swimming into the turbines. DMEA worked with a local benefactor to establish fishing access on the Uncompahgre River so local anglers can continue to enjoy their favorite sport.

HUNT FOR PROJECT FUNDING EASIER WITH ENERGY SERVICES

Money—where to get it, how best to spend it, where to find more—is a topic very much on people’s minds, whether their needs are personal or strictly business. Utilities face those same questions, but unlike individuals and other organizations, they can ask Energy Services for guidance. A large part of our service is networking with state and federal agencies, trade associations and nonprofits to track down funding opportunities Western customers can use to launch programs or upgrade facilities.

MAKEOVER TIME

Take the city of White, S.D., for example, and its 40-year-old community center. “We would like to get rid of the paneling, remodel the kitchen and reconfigure the office space,” explained Finance Officer Melanie Haber.

She added that the fluorescent lighting throughout the building is poor quality, especially in the big hall where most events are held. Replacing the five furnaces heating the multi-use facility with one central system and zoned controls could help to reduce operating costs and improve comfort. In short, “It needs a complete update, inside and out,” Haber admitted.

ONLY THE BEGINNING

The community center project is still in the planning stages, so Haber has only done preliminary research into funding sources. “We can’t apply for a grant until we have specifics about what we want to do to the building and what that is likely to cost,” she said.

Heartland Consumers Power District, the city’s wholesale cooperative, offers incentives for commercial lighting upgrades, heating and cooling system retrofits and efficient appliances. The systems that would be installed in the community center would be subject to Heartland’s as-yet-unpublished 2014 rebate menu, however.

The South Dakota Office of Economic Development might also



The city of White, S.D., is investigating grants available for upgrading its community center. Municipalities have many options for funding energy-efficiency retrofits to public buildings, but sometimes it is necessary to think outside the box. (Photo by the City of White, S.D.)

be a source of low-interest loans for the project, Haber noted. “We have reached out to the regional office, but again, we don’t know what programs the project might be eligible for until we have more details,” she said.

NO STONE UNTURNED

In addition to investigating loan and rebate programs, Haber also contacted Marsha Thomas, Western’s Upper Great Plains Energy Services representative for more ideas about potential funding sources. Thomas, in turn, decided to “crowdsource” Haber’s question with other Energy Services staff. “The great thing about having an Energy Services representative in each region is that we all bring a different background and perspective to the job,” said Thomas. “Any one of us can tap that collective experience to find answers for our customers.”

Energy Services Manager Ron Horstman observed that Haber is off to a solid start in her search for funding. “Check with your generation and transmission provider first,” he advised. “They understand your load in the context of the community and local climate, and they have a vested interest in helping their members manage their demand.”

Here are some other recommendations municipalities might consider for securing funding:

1. Assemble a list of stakeholders on the project and brainstorm with them to come up with a list of potential sources. Your colleagues and neighbors may surprise you with their resourcefulness and innovative thinking.
2. If the city participates in the American Public Power Association (APPA) Demonstration of Energy & Efficiency Developments (DEED) program, it may be eligible for a DEED scholarship or grant. Contact APPA for more information and eligibility requirements.
3. Don’t stop with your state’s economic development office. Check with the state energy office, parks and recreation department, education department and public health office to learn about their grant opportunities. Projects that address the goals of more than one state (or federal) agency often have a better chance of receiving funding.

See *PROJECT FUNDING*, page 8

REDUCING RESTAURANT ENERGY USE GOOD FOR CUSTOMER, UTILITY, COMMUNITY

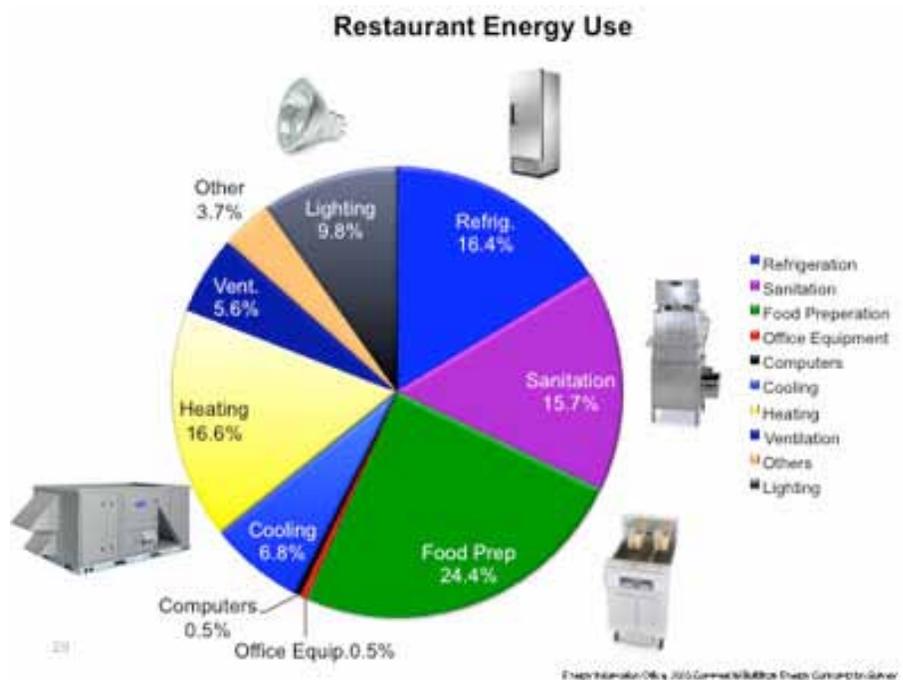
Whether it is a local diner that serves as the community's unofficial meeting hall, a five-star destination for "foodies" across the state or a significant industry in a resort town, almost every utility can count at least one restaurant among its commercial customers.

These businesses use five to seven times more energy per square foot than other commercial buildings. In its Guide for Restaurants, the Environmental Protection Agency (EPA) estimates that when a restaurant cuts its energy costs by 20 percent, its profits could increase by 30 percent or more. That's why Western customers like Salt River Project and Sacramento Municipal Utility District work with restaurants to increase their energy efficiency.

NOT THE USUAL SUSPECTS

Restaurants use the bulk of their energy during food preparation, so the lighting programs that help to reduce utility bills for offices and retail stores won't have the same impact for these customers. Take the average deep fryer, for example—it uses more than 18,000 kilowatt-hours and costs around \$1,800 per year to operate. Refrigeration and water heating are two more functions that consume large quantities of energy. Utilities with a lot of food service businesses in their territory might consider establishing an incentive program to encourage them to upgrade their equipment. Such programs would also benefit hotels, hospitals, grocery stores and residential institutions.

If you do not have enough restaurants and similar operations in your territory to warrant a targeted incentive program, you can still provide business owners with good advice and technical assistance. Start by sharing these five guidelines from the EPA for maximizing the efficiency of food prep equipment:



(Artwork by Sustainable Food Service)

1. Reduce idle time. Keeping equipment on when it isn't in use costs money and wastes energy. Implementing a startup and shut-down schedule for energy intensive equipment like broilers, fryers and ranges is a good first step toward managing energy use.
2. Maintain your equipment. Improper seals, leaks, dirty coils and faulty equipment all waste energy and money. Incorporating a regular cleaning and maintenance schedule for all equipment will significantly improve efficiency.
3. Calibrate your equipment. Perform a regular thermostat check to be sure that your freezers, refrigerators, appliances, dishwashers and hot water heaters are operating at their optimal temperatures.
4. Install variable speed controls on your exhaust hood to dramatically reduce the run time for fans.

5. Buy Energy Star-certified equipment when replacement becomes necessary. Fryers, steamers, convection ovens, griddles, broilers, combination ovens, ranges, reach-in refrigerators and freezers, walk-in refrigerators and freezers and ice machines are all available with an Energy Star certification.

Sending these tips as a bill stuffer to your restaurant and hospitality customers might even inspire them to think about making bigger investments in energy efficiency.

LOW-HANGING FRUIT ON MENU

Food preparation and storage may be the biggest source of energy savings for restaurants, but lighting and heating and cooling (HVAC) systems are still worth upgrading.

Common lighting measures include replacing T12 lamps and electronic

See RESTAURANT ENERGY USE, page 8

BLACK HILLS POWER RAISES ENERGY-EFFICIENCY AWARENESS WITH LED RETROFIT

The mercury in Rapid City, S.D., dipped to 5 degrees on Dec. 6, but inside the Canyon Lake Senior Citizens Center, the new light-emitting diode, or LED, lights shone brightly on those who braved the cold to attend Black Hills Power Energy Efficiency Awareness Day.

The event showcased the senior center's lighting retrofit project and gave Black Hills representatives a chance to talk to customers about energy efficiency. The free open house included presentations on the utility's Energy Efficiency Solutions Program, weatherization and other energy-saving tips and a lunch-and-learn session covering energy-efficient equipment and measures.

Residential customers learned how they could save money with demand controllers, electric heating and cooling options, water heating and heat pump servicing. "Most were asking general questions about energy-efficiency measures and looking for ideas they could put to work at home," said Black Hills Energy Services Manager Don Martinez.

Black Hills targeted commercial customers with information on custom energy-efficiency projects, geothermal heat pumps and lighting upgrades like the one at the senior center. "We wanted them to see what a cost-effective energy-efficiency measure looks like in action," Martinez explained.

BETTER LIGHT, LOWER BILLS

Like many public facilities these days, Canyon Lake is on a tight budget and the staff was looking for ways to cut operating costs. The old-fashioned light fixtures throughout the meeting rooms, cafeteria and kitchen, offices and gymnasium were not helping. "They were killing us," Center President Rudy Mooney stated bluntly, "and it wasn't just the electric bills, either. We had to call in a maintenance company three times a year to work on the lights

in the gym."

Replacing T-12 fluorescent lights and 500-watt (W) halide lamps with LED fixtures reduced the center's electric costs by one-third. "We went from 500 watts per light to 100 in the gym, and from 40 to 15 watts elsewhere," said Mooney. "That gave us a net savings of about \$600 per month, not counting maintenance fees for bulbs and ballasts."

Just as important, the retrofit maintained the lighting quality, observed Martinez. "The members felt in many cases that the new lights were superior to the old ones," he said. "They love that the gym lights turn on and off instantly without a warm-up period. Also, they are now able to turn off half of the lights during the day and take advantage of daylighting for dance classes."

ADVISE AND ASSIST

Mooney contacted Martinez shortly after the center received a \$50,000 grant from the Department of Housing and Urban Development to improve the facilities. "I've known Don for 30 years," said Mooney. "I knew he would have some good ideas for the project."

Martinez started by taking the lighting levels throughout the building, and then pointed the center's board of directors toward three vendors that had worked with Black Hills. "One bid was for more efficient fluorescents and two were for LED technology, so they had an idea what the potential for savings was," he said.

After reviewing the proposals with Martinez, the board chose LED technology with a three-year payback. Black Hills rebates contributed an additional \$9,000 to the project. "We're using that money to upgrade the flooring," said Mooney.



Members using the Lake Canyon Senior Center gym for daytime classes can turn off half of the new LED lights and take advantage of daylighting. With the old halide system, the lights were all off or all on. (Photo by Black Hills Power Corp.)

SUCCESS ALL AROUND

Mooney said that he appreciated the help Black Hills gave the center with the project and would be open to other energy-efficiency upgrades. "Everyone is trying to be 'green' these days," he observed. "But saving one-third on your electric bills is just common sense. It wasn't a hard decision."

The project was good for Black Hills, too, Martinez agreed, even though the weather refused to cooperate—a record-breaking blizzard on the original date forced them to reschedule the event. "It's one thing to tell people about the benefits of an energy-efficient application," Martinez admitted. "But it really makes a difference to them when they can walk around under the lights." ⚡

PUBLIC POWER UTILITIES URGED TO TAKE SEPA SOLAR RANKINGS SURVEY

Western and the Solar Electric Power Association, (SEPA) are inviting Western customers to participate in SEPA's seventh annual survey to provide data for the annual *Utility Solar Rankings Briefing*.

SEPA will release the results of the survey in April 2014, and follow that with its new Utility Solar Market Report in June 2014. Past reports have received significant coverage from media outlets such as the Wall Street Journal, Renewable Energy World, Transmission & Distribution World, and Reuters.

The annual survey collects utility data on solar electricity installations in the United States, both photovoltaic and concentrating solar power, on the customer and utility side of the meter. "The industry, utility resource planners and customers interested in solar need to know who is installing systems, in what quantities and at what cost," said Western Renewable Energy Program Manager Randy Manion. "This is essential market information for identifying strategies for expanding the use of solar."

Municipal and cooperative utilities are making an impact in solar development especially in terms of watts per customer. In 2012, seven of the top ten Watts-per-Customer rankings went to cooperative and public utilities ranging from 160 to 560 watts per customer.

Each year, SEPA also announces the top ten annual and cumulative solar megawatt (MW) and Watts-per-Customer awards at its Utility Solar Conference. Last year Sacramento Municipal Utility District (SMUD) placed ninth among utilities overall for Annual Solar MW and received first place for Municipal Annual Solar MW. SMUD integrated 66 MW of solar, mostly through the build-out of 54 MW of centralized projects in the feed-in tariff program the utility launched in 2010. Imperial Irrigation District (IID), another Western customer, claimed the seventh spot for Annual Watts per Customer with 190 W per customer account. IID integrated the 23-MW Imperial Valley Solar Project, the ninth largest solar project built in 2012.

Salt River Project in Arizona and Los Angeles Department of Water and

Power also saw notable solar activity in 2012, with annual solar rankings of 17th and 18th respectively. Overall, municipal utilities integrated 138 MW of solar last year, and 20 integrated 1 MW or more each.

Cooperative utilities made a strong showing as well, integrating a total of 36 MW of solar, including eight that integrated 1 MW or more. Kauai Island Utility Cooperative occupied the number two spot with 282 watts per customer added in 2012, up from 12th place in the previous year. Most of the solar integration came from the newly built 6-MW Port Allen Solar facility, the largest solar facility in Hawaii.

The deadline for completing the survey is Feb. 4, 2014, however, early submissions are appreciated. If you prefer to fill out the survey as a Word document, contact Miriam Makhyouan at 202-379-1615. Those submitting by the deadline will receive complimentary summary reports. ⚡

RING OUT THE OLD!

Change your Energy Services Bulletin bookmark to esnews.wapa.gov. Contact us at energyservices@wapa.gov with any questions.

Happy 2014 from Energy Services.



Project funding *from page 4*

4. County governments also offer economic development grants or loans, or serve as pass-through agencies for federal monies. Private businesses and nonprofit agencies frequently collaborate with counties to set up revolving loan funds for projects that benefit communities.
5. Inquire with your local and state chamber of commerce about grant opportunities they may offer or be aware of.
6. Hire a grant writer. This professional knows how to speak the language of funders and how to highlight the facets of the project that appeal to them. Grant writers who specialize in a specific field or type of project also keep up with the funding agencies and opportunities

pertaining to their specialties.

7. Seek donations from individuals or service clubs in the community. Supporting energy efficiency in public buildings today can help keep taxes and fees down tomorrow. Donating also gives residents ownership in the success of the project and a feeling of civic pride.

Ultimately, more projects are hobbled by a lack of imagination than a lack of funding, Horstman insisted. "Make the effort to think outside the box, and you may discover financing options that would never have occurred to you otherwise," he said. "You may even improve on the efficiency and functionality of your original plan if you stay open to creative thinking."

GOOD LUCK!

Energy Services wishes White, S.D., and all our customers the best of luck in developing the modern, efficient facilities their communities need to remain vibrant and healthy. More than that, we are always sharing ideas to accomplish that goal through our website, blog and our representatives.

Most of all, we urge you, our customers, to share your experiences with each other. Contact your peers directly through Energy Services Bulletin stories, send them to the editor or give us your two cents' worth in the comments below. ⚡

Restaurant energy use *from page 5*

ballasts with T8 lamps and magnetic ballasts. Replacing exit and incandescent or neon signage with LED signage, and installing occupancy sensors for low traffic areas can also make a difference on electricity bills.

Just like kitchen appliances, HVAC equipment performs better with regular cleaning and maintenance. Programmable thermostats are another inexpensive way to improve HVAC efficiency. When it is time to replace the HVAC system, encourage the building owner to invest in an Energy Star HVAC

system for significant savings over the life of the equipment. No matter who is paying the utility bills, keeping operating costs down is good for business.

Restaurants are big water users, too, which is why several California utilities, including the City of Palo Alto Utilities, offer incentives for reduced water use fixtures. Sustainable Food Service recommends installing aerators and especially pre-rinse spray valves as a low-cost way to reduce water use for dishwashing.

HELP FOR THE LITTLE GUY

One more reason for utilities to take an interest in restaurant energy use is that many are small, locally owned establishments. By helping these businesses to keep their operating costs down, power providers are supporting their communities. Check out these resources from the U.S. Small Business Administration for more ideas on serving up energy savings for restaurants. Your customers—and community—will thank you. ⚡