



Energy Edge

A NEWSLETTER FOR MEMPHIS LIGHT, GAS AND WATER DIVISION GENERAL POWER CUSTOMERS
APRIL 2010

Test Your Business Energy Smarts!

Smart business means efficient business, and energy is one of the few areas where you can cut costs without sacrificing customer service or product integrity.



Test your energy efficiency knowledge by taking this short quiz, and pick up some smart energy efficiency tips that can improve your bottom line.

1. **True or false? Computers, monitors, and other office equipment will use less energy and last longer if they're left running all the time.**
2. **True or false? When leaving a room for a short period, it's better to leave lights on than to turn them off.**

Answers are found on page 6. We'll post new questions each month. Feel free to share the information with your employees so they can better understand the importance of energy efficiency to your business' profitability.

TVA, MLGW launch energy efficiency incentive program for businesses

Commercial Energy Efficiency Advice and Incentives targets customers with electric demand of 50 kW +

Looking for information and financial incentives to help make facility energy improvements? TVA's Commercial Energy Efficiency Advice and Incentives (CEAI) program is now available to MLGW customers.

CEAI provides review, advice and incentives for businesses and organizations that make energy improvements to existing facilities' interior lighting and HVAC systems that help reduce TVA's electric peak. A one-time incentive of \$200 is paid per kilowatt (kW) reduced during TVA's summer peak, as part of the federal power generator's initiative to cut electric demand by 1,400 MW by 2012. Projects must have 5 kW or greater demand reduction potential to qualify for incentives.

To be eligible, a commercial customer must have an electric demand of 50 kW or larger, must be in good standing (timely MLGW payments and not at risk of closing) and must have either at least 13 months of billing history at the facility or, if new to the

MLGW Rates

MLGW's current and historic electric, natural gas and water rates are published at www.mlgw.com, along with updated Purchased Gas Adjustment and Fuel Cost Adjustment rates.

Purchased Gas Adjustment (PGA)

MLGW Rate	Consumption	Demand
G-1 residential	(\$0.266)	na
G-7	(\$0.324)	na
G-8 / G-9	(\$0.485)	\$0.419
G-10 / G-12	(\$0.490)	na

Monthly adjustment in \$/Ccf to published natural gas rates for meters read on or after 4/1/2010.

Fuel Cost Adjustment (FCA)

TVA Rate Class	MLGW Rate Code	FCA Amount
GSA, Part 1	E-2	(\$0.00201)
GSA, Part 2	E-2	(\$0.00201)
GSA, Part 3	E-2	(\$0.00199)
Residential	E-1	(\$0.00203)
Outdoor Lighting	E-3	(\$0.00204)

Monthly adjustment in \$/kWh to all firm kWh, beginning with meters read on or after 4/1/2010.



Important Contact Information

Commercial Resource Center:

Monday-Friday

7:30am-5:00pm Central

Phone: 901-528-4270

Fax: 901-528-4547

E-mail: CRC@mlgw.org

Emergency: 901-528-4465

Outage: 901-544-6500

VIEW YOUR BILL ONLINE AT www.mlgw.com

facility, must be operating a business similar to the former occupant. Manufacturers can participate in the incentive portion of the program only, bringing a proposed project nearing implementation.

The level of information and incentives available vary based on the potential kW savings. The program is most suitable for customers with an electric load of 250 kW or larger in the following industries, which are most likely to achieve sizable demand savings:

- Warehouse
- Office Buildings
- Healthcare
- Education
- Government

Program participation begins with a free Initial Energy Assessment to identify potential demand savings. Customers who pass that screen are eligible for a free Onsite Energy Review, provided at least 25 kW of savings are identified. If you already are working with a contractor and have a proposal for interior lighting or AC retrofit that will cut at least 5 kW, you can bypass the advice stage and move straight to the incentive application stage.

TVA and MLGW hosted a Preferred Partners Network (PPN) orientation for lighting and HVAC contractors in January to familiarize them with the new program. Customers making improvements are encouraged to utilize a PPN member to streamline the process and maximize incentives, but there are options for using in-house staff and other contractors. If you have a contractor with whom you regularly work, encourage them to join the PPN. More details about the PPN can be found at: <http://tva.com/ppn>

Find details about CEIA at http://www.mlgw.com/SubView.php?key=comm_adviceincentives. The website contains an overview of the program and forms to download, complete and submit to start your participation.

Building Commissioning: Golden opportunity for reducing energy costs and greenhouse gas emissions

An estimated \$10 billion is wasted in U.S. commercial buildings annually, with the top culprits being leaky ducts, running lights, and heating or cooling unoccupied spaces.

An exhaustive study conducted by Lawrence Berkeley National Laboratory (LBL) has determined that building commissioning—the process of tuning up buildings to run properly—can deliver an average 16% savings in energy use among existing buildings. Even new construction showed 13% savings through commissioning. Commissioning savings come at a low cost and existing buildings average a payback of 1.1 years.

Often overlooked, building commissioning is a risk-management strategy to ensure building owners get what they pay for and to help avoid costly maintenance and replacement problems from early equipment and system failure. “Commissioning” usually refers to the process utilized during construction, while “retro-commissioning” is typically performed after building operations have begun.

LBL analyzed 643 building commissioning and retro-commissioning projects, addressing 99 million square feet in 26 states. The top 13 culprits of energy waste in commercial buildings:

- Duct leakage
- HVAC operating in unoccupied spaces
- Lights operating in unoccupied spaces
- Airflow not balanced
- Improper refrigerant charge
- Dampers not working properly
- Insufficient evaporator airflow
- Improper controls set-up
- Control component failure or degradation
- Software programming errors
- Improper controls hardware installation
- Air-cooled condenser fouling
- Valve leakage

Access the study's website at: <http://cx.lbl.gov/> View the 65-slide presentation and study summary at: <http://cx.lbl.gov/documents/2009-assessment/LBNL-Cx-Cost-Benefit-Pres.pdf> Additional resources and tools for building owners are available at the California Commissioning Collaborative website: <http://www.cacx.org/resources/owners.html>

Need an introduction to Building Commissioning? Check our Business Energy Advisor web content at www.mlgw.com/BusinessEnergyAdvisor. Look under the section labeled "Maintaining Equipment" and you'll find a Retro-commissioning report outlining how to determine whether there's potential in your facility, the basic process (planning, investigation, implementation and transition), certification program resources and advice.

Exciting changes coming to My Account on May 1

MLGW will be upgrading its My Account web service on May 1. If you are a registered My Account user, watch for an email from MLGW during the week of April 19. Highlights include:

- New password for first-time login after April 30.
- Automatic retrieval of forgotten UserIDs through a hint question.
- Payments from all channels, not just electronic, will be shown online.
- Customers on paperless eBilling will have access to six months of old bills, growing to 12 months over time. Customers who still receive a printed bill will have web access to only the current bill—so be sure to download bills by 4/30/2010 if you need to retain copies. Login and click on the My Bills tab to access. If you have filed bills, you will find them under the My Filed Bills tab. Instructions for downloading as a PDF are contained in the Help tab.
- The ability to download up to 24 months of bill history through the Analyze link on the My Bills page will be removed. Accounts eligible to view the new Bill Analysis and Bill History features introduced in December will still have access to those tools. In addition, new Bill History tools will be added this summer for most large customers to view similar account information individually. But, if you've been using the Analyze button on the My Bills page to download billing history for all accounts at once, you will lose that feature. If this data is important to you, we recommend that you download by 4/30/2010.
- Several new credit card payment options will be added, but only for residential accounts. Since MLGW must pay a fee based on the payment amount, a business decision was made to not accept credit card payments for non-residential accounts. Current options for fee-based Discover Card payments on commercial accounts also will be removed—but new electronic banking options are available for business customers. Automated Clearing House (ACH) payments made through Corporate Trade Exchange with Electronic Data Interchange 820 files (CTX with EDI 820) are the preferred method, as the bank can extract the data file with account details for MLGW to post electronically. Other options include: third-party consolidators, cash concentration or disbursement (CCD) with addenda and direct payment settlement files.

Strategy to reduce water waste can deliver utility, sewer savings

Spurred by EPA's Fix-A-Leak Week in March, [Energy Edge](#) began a three-part series offering advice and strategies for decreasing water waste through repairs, replacements and upgrades. With commercial buildings representing approximately 15% of the nation's water consumption, there are many opportunities to reduce usage which, in turn, reduces water and related sewer fees.

MLGW bills for water in hundred cubic feet, Ccf, which equals 748 gallons. In these examples, costs are based on the W7 water rate of \$1.67 per Ccf for commercial and small industrial water users in the City of Memphis. [Energy Star appliances](#). Although the Energy Star label is a recognized standard for energy efficiency, some of the rated appliances—including dishwashers and commercial clothes washers—also offer significant water savings.

- **Dishwashers.** Dishwashers are commonly included in business kitchenettes. By using technology like soil sensors, improved water filtration, efficient water jets, and better rack designs, Energy Star-rated dishwashers use 31% less energy and 33% less water than conventional machines and can save nearly 500 gallons of water each year. Although these savings probably don't justify replacing a dishwasher that currently works, it's something to keep in mind when installing a new unit.
- **Commercial clothes washers.** These appliances have energy savings potential in businesses, particularly in laundry facilities and hotels. Energy Star-rated washers save water by implementing a front-loading design that lacks features like the agitators that are standard in most conventional models. In a typical commercial setting, each of these washers can save over 16,000 gallons of water per year, with resultant annual savings of \$35 for water alone, even more when water heating energy costs are considered. With an incremental cost of around \$250 over a standard commercial washer, these units can yield a simple payback period of around five years. When considering a new commercial clothes washer, it's helpful to understand the Energy Star criteria for assessing water efficiency. All clothes washers are considered on the basis of water factor (WF)—this is the ratio of the volume of water required for a cycle in gallons (gal) to the capacity of the washer in cubic feet (ft³). A low WF means that the washer uses less water to wash a load. Although many conventional washing machines have WFs of around 10 gal/ft³, Energy Star washers are tested to have a WF rating of 7.5 gal/ft³ or lower, and a number of Energy Star washers have WFs as low as 3 gal/ft³.
- **Pre-rinse sprayers.** In food service facilities, pre-rinse sprayers are used to remove food from dishes before they are placed in a dishwasher. Although a national standard mandates that all pre-rinse sprayers manufactured after 2006 be limited to a flow rate of 1.6 gallons per minute (gpm), many currently installed sprayers use up to 5 gpm, according to the U.S. Department of Energy. Part of the problem is that these sprayers tend to wear out over time, so even low-flow sprayers may ultimately end up being very inefficient. In areas where these inefficient sprayers are used, upgrading to low-flow sprayers can conserve water while also reducing the energy needed to maintain the supply of hot water. An easy way to tell if you should replace your sprayer is to use it to fill up a 1-gallon water pail—if it takes less than about 30 seconds, it's a good idea to replace it. Given the small initial cost of low-flow valves (around \$60 per valve), this measure typically yields a simple payback of less than two months.

Cooling towers. Cooling towers are used to remove heat from chilled-water HVAC systems and work by employing evaporative cooling. In addition to the water lost from evaporation, additional water is lost through bleed-off, where a portion of the circulating water is discharged from the system to remove solids that have built up over time. Upgrading the water-treatment system for cooling towers—thereby reducing the number of times bleed-off is necessary—can mean large savings from reduced water consumption, chemical consumption (for water treatment), and labor costs for maintenance, as well as from the energy savings that will result from cleaner heat-transfer surfaces. These upgrades may include the installation of automatic controls to monitor water pH levels and the concentration of dissolved solids, and to add chemicals or bleed off water as appropriate. Upgrades could also include makeup and blow-down submeters, sidestream filtration, ozonation, and high-bonding chemical or physical treatment. Though the actual savings from upgrades will depend on the individual cooling tower system, payback periods can be as short as six months, according to the Saving Water Partnership, a group of Oregon utilities that promote water conservation.

Additional Resources

- Watch future issues of *Energy Edge* for additional ideas on water use
- Contact MLGW to request the ESource publication, *Water-Savings Tips for Business*.
- EPA WaterSense website, <http://epa.gov/watersense/pubs/fixleak.html>
- Portfolio Manager (www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager), a software package available free from Energy Star, allows you to monitor multiple water meters, track a facility's water use over time, and compare water consumption with similar facilities.

- WaterSense (<http://epa.gov/watersense>), a labeling program similar to the Energy Star label for energy efficiency, aims to help customers choose water-efficient products.
- The American Water Works Association (www.awwa.org) provides information on water resource development, water and wastewater treatment technology, water storage and distribution, and utility management and operations.
- The U.S. Department of Energy's Energy Efficiency and Renewable Energy web site (<http://www1.eere.energy.gov/calculators/homes.html>) provides several calculators to analyze lifetime savings resulting from the implementation of various water-saving technologies.

Occupancy sensors reduce MLGW facility energy use, save money

Like each of our customers, MLGW faces energy management and operating cost challenges. This article, written by MLGW Energy Use Engineer Marguerite Epps, P.E., addresses a recent occupancy sensor installation at the MLGW Joyce Blackmon Training Center in Raleigh. Epps will provide occasional articles discussing MLGW's actions to reduce energy use and lower its carbon footprint.

With more than 1.9 million square feet of facilities located throughout Shelby County, MLGW takes a three-prong approach to energy management:

- Tracking utility consumption data, using MLGW's My Account and Meter Intelligence services, with long-term billing data
- Developing a Facilities Master Plan, projecting 10-year project needs and future development
- Conducting energy audits to identify cost-saving opportunities

Lighting accounts for up to 40% of the energy used in commercial buildings. Facility owners or leasers can save energy by turning off lights in areas that are unoccupied. Studies indicate that employees are away from their offices between 30%-70% of the time on a typical work day. However, lights are left on during these unoccupied times.

Occupancy sensors are controls that automatically turn off lights in spaces which are unoccupied, thereby reducing energy use and costs by up to 65%. There are two main types of occupancy sensors used in lighting and building automated systems: Ultrasonic and Passive Infrared (PIR).

Ultrasonic sensors detect high frequency sound waves and are best suited in areas which contain obstructions such as cubicle walls, restroom partitions or large offices or conference rooms. These sensors are highly sensitive to movement and can "see" around most objects. They are expensive and tend to cost more than PIR sensors.



MLGW's Joyce M. Blackmon Training Facility proved a cost-effective location to deploy occupancy sensors. The energy management project is expected to have a one-year payback.

PIR sensors work best in spaces with minimal barriers such as small offices and conference rooms. These sensors pick up movement by measuring infrared radiation. PIR sensors require a "line of sight" which means they cannot "see" around or over partitions and other obstructions. However, PIR sensors are less likely than ultrasonic to have false triggers.

When ultrasonic and passive infrared technologies are combined, "**hybrid**" sensors are the result. The best characteristics of both sensor types are combined to produce maximum reliability and minimal false triggering. Hybrids are better suited for large open spaces and areas with unusual occupancy patterns.

MLGW has utilized various types of occupancy sensors in its buildings for years. Recently, the Joyce M. Blackmon building underwent an energy audit. The facility is used to provide training and developmental classes to MLGW's employees. Typical with most facilities, when lights were turned on in the morning, they remained on until the close of the business day.

MLGW's Building Construction and Maintenance staff installed a combination of ultrasonic, PIR and day lighting sensors on the lighting systems located in the facility's corridors, classrooms, conference rooms, office areas, restrooms, janitorial closets, vestibules, utility and shop areas. Lights are only activated in spaces when needed and turned off when unoccupied.

As a result of this energy conservation project at the facility, energy savings of 54,000 kWh and utility cost savings of \$2,700 are projected per year, with an average 12-month payback. Turning off lights in the building will also reduce light pollution by 82,210 pounds of CO₂ emissions.

You can find occupancy sensor information at www.mlgw.com/BusinessEnergyAdvisor, under the Buying Equipment section. For additional information about occupancy sensors and other lighting control mechanisms, visit the U.S. Department of Energy website at http://www1.eere.energy.gov/femp/technologies/eep_light_controls.html.

MLGW IN THE COMMUNITY



Earth Day activities bring MLGW staff to events across county

With the 40th anniversary of Earth Day to be celebrated on April 22, many local organizations are sponsoring events throughout the month to capitalize on increased environmental awareness. Look for MLGW at the following community events in April, where you can find information on green power programs, energy saving advice, incentive programs and more.

- April 16-18: Africa In April, Robert R. Church Park
- April 17: Clean Memphis at Springdale Baptist Church/Rhodes College
- April 17: Earth Day at Navy Exchange, Millington
- April 17: National Volunteer Week 5K Walk/Run, Shelby Farms
- April 19: Earth Day at St. Jude Children's Research Hospital
- April 22: Go Green Night with the Memphis Redbirds, AutoZone Park
- April 25: Down to Earth at Shelby Farms, 10am-5pm

Test Your Business Energy Smarts--ANSWERS



1. True or false? Computers, monitors, and other office equipment will use less energy and last longer if they're left running all the time. *False.* Turning equipment off overnight does not shorten its life, and the small surge of power that occurs when some devices are turned on is much smaller than the energy used by running equipment when it's not needed. Turn off equipment when not in use or enable power-management features are enabled so computers go into sleep or hibernate mode after a specified period.

2. True or false? When leaving a room for a short period, it's better to leave lights on than to turn them off. *False.* For incandescent bulbs, it's always better to turn the lights off. For fluorescent lights, it's a bit more complicated. Fluorescent lamps use slightly more energy on start-up and they wear out more quickly by frequent on-and-off switching. However, a good rule of thumb is to turn the lights off whenever you leave the room for more than five minutes. If lights are frequently left on when no one is there, try installing occupancy sensors.