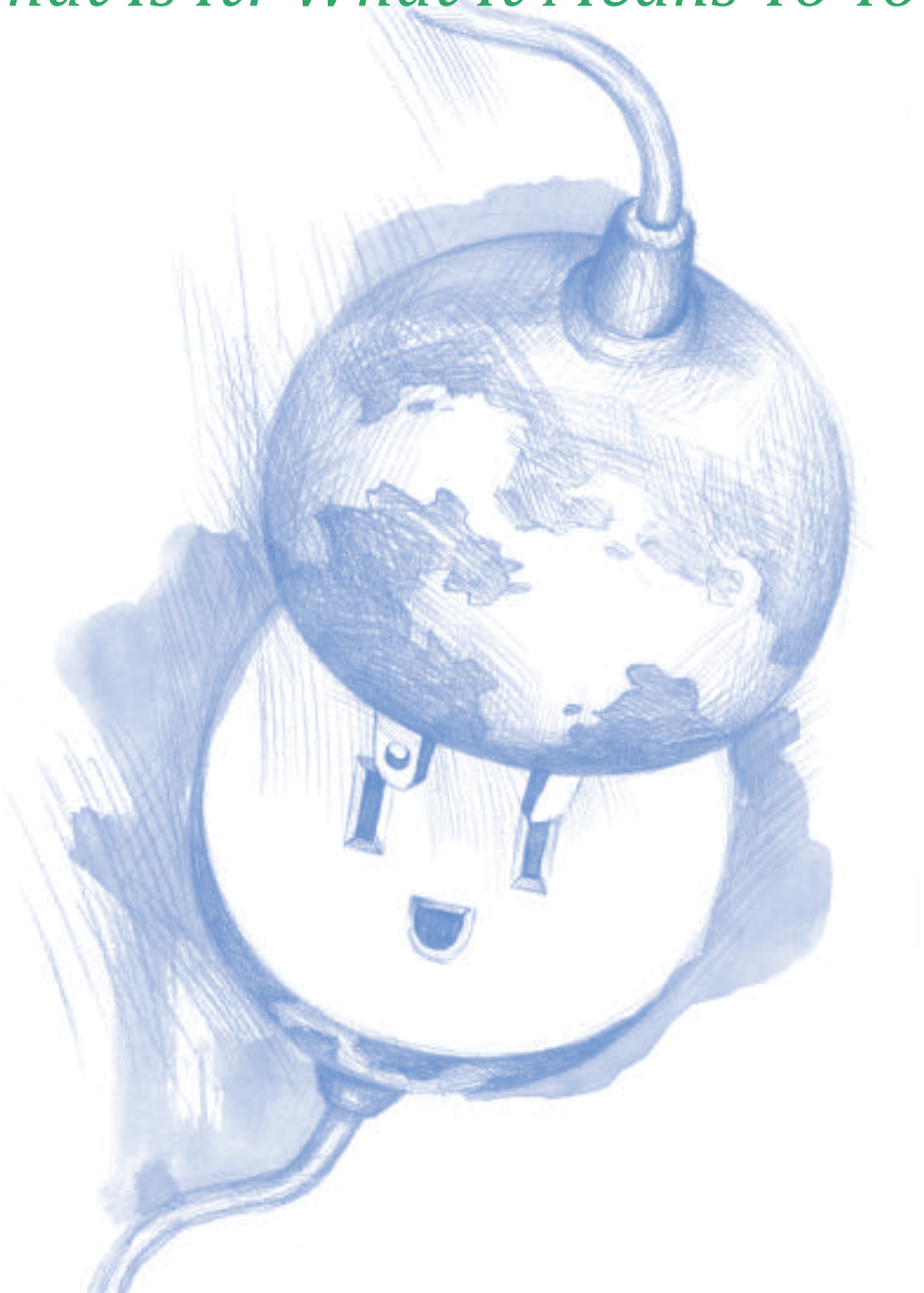
PSC Connection
Missouri Public Service Commission Publication VOL. 2 NO. 4 -- June 2012

Smart Grid

What Is It? What It Means To You



Chairman's Corner

Energy efficiency, renewable energy and Smart Grid are words that we see a lot in the news today as utilities and regulators move forward with the provision of electric service now and in the future. The feature article in this edition of the *PSConnection* addresses Smart Grid.

What is the Smart Grid? How does it affect me and how will it help me with my energy use and bills? What is the Public Service Commission's role in Smart Grid? We attempt to answer these questions and more in our story about the **Smart Grid.**

Electric customers with The Empire District Electric Company, Ameren Missouri and KCP&L (in the former Aquila service territories) have no doubt noticed an item on their bill, typically called an FAC or Fuel Adjustment Charge. In **"What's this on my electric bill?,"** we look at what an FAC is and what factors go into determining the monthly charge.

Three major electric rate cases were filed earlier this year with the Public Service Commission. This edition of the magazine contains information on how utility rates are set.

Whether it is through a written comment, a telephone call or participating in a PSC local public hearing, the Public Service Commission values public input and wants to hear from you. We believe consumer input and an understanding of the rate case process is an important part of our agency's mission. Please take a moment to read **"Lifting The Curtain on Utility Regulation."** The rate case process can be a very complex one, but it is an important one to understand.

With warmer weather here, we've included in this edition of the *PSConnection* information on how you can beat the heat. We also have no cost, low cost and long term ways that you can become more energy efficient and save on your utility bills. More tips and energy saving information can also be found at **www.beenergyefficient.org** .

We hope that you enjoy this edition of the magazine. Please feel free to share your thoughts about the magazine and give us your suggestions on future topics.

Kevin Gunn

PSConnection

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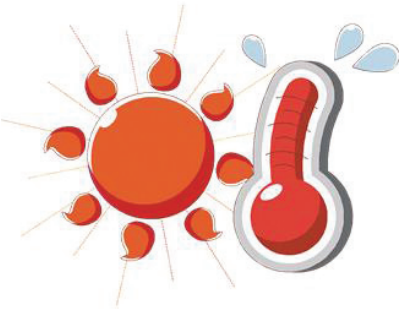
The Missouri Public Service Commission regulates investor-owned electric, steam, natural gas, water and sewer and telephone companies. Its mission is to ensure Missouri consumers have access to safe, reliable and reasonably priced utility service while allowing those utility companies under our jurisdiction an opportunity to earn a reasonable return on their investment. The PSC also regulates manufacturers and retail dealers who sell new and used manufactured homes and modular units. The Commission was established in 1913. The PSC is comprised of five commissioners, who are appointed by the governor.

SUMMER ENERGY SAVINGS TIPS

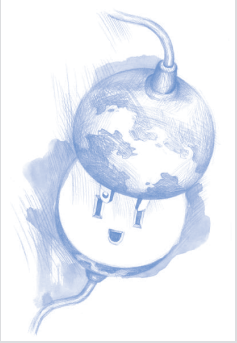
Missouri summers can be hot and humid. In this type of weather your air conditioner will work hard. There are several steps you can take to conserve energy and beat the heat so it does not deplete your pocketbook. Please check out the information on page 13.



What's Inside

Our Mission

To ensure that Missourians receive safe and reliable utility service at just and reasonable rates.



On The Cover
Smart Grid is a digitally enabled electrical power distribution network. Its components include technology and controls that enable the transmission of electricity and two-way, digital communications between producers and consumers. Its goal is to improve the efficiency, reliability, and sustainability of electricity services.

SMART GRID

Today's electrical systems have been so reliable and affordable that they are often taken for granted until electric service is lost.

According to industry experts, the average American consumer thinks about electricity a total of six minutes per year when they are experiencing uninterrupted electrical service. It is the loss of electrical service that causes consumers to think about electrical power and realize firsthand how electricity impacts their lives.

The "Smart Grid" can play a key role in shifting customer focus from the loss of electrical service to managing electrical service.

What is the "Smart Grid"?

The term "Smart Grid" does not have a precise definition and there are no exact specifications for the equipment, devices, software, processes and procedures required for a Smart Grid.

The Smart Grid can best be described in terms of the functions it will perform:

-- The ability to develop, store, send and receive digital information concerning electricity use, cost and price.

-- The ability to program appliances and heating, ventilating and air conditioning systems.

-- The ability to manage and modify electricity usage.

-- The ability to sense service disruptions enabling proactive efforts to limit outages.

-- The ability to detect, prevent, respond to, and recover from security threats to the electrical system.

The smart grid can empower consumers. A "smart thermostat" allows customers to manage energy use. A power company can remotely collect data to help ensure reliability.

The Smart Grid:
What are the customer benefits?

Savings will be a natural by-product of customers having knowledge about their electricity usage and being empowered to control that usage through a choice of options best suited for each individual customer.

Implementation of Smart Grid technologies, and specifically advanced metering infrastructure (AMI), will enable customers to more closely monitor their energy usage in "real time", either through applications in the home or remotely using the Internet or a mobile phone. Monitoring energy usage in real time, versus receiving a historical report of usage, allows customers to shift their energy usage from times when energy is expensive because it is in high demand— "peak" times—to times when energy is less expensive because it is in less demand — "off-peak" times. Dynamic pricing, or time of use (TOU) pricing, sends proper pricing signals for electricity to customers and allows them to save money by shifting energy consumption from peak to off-peak times. Electricity rates are set for the different time periods, and customers can manage their energy costs by shifting usage to a lower cost period or reducing overall consumption.

Customers who own their own homes are generally more likely to spend extra money for energy efficient and smart appliances to realize energy savings over time. Customers who rent their homes will generally be more interested in actions they can take that require minimal investment.

One popular application that is available with AMI is "prepay accounts or prepaid metering." Customers on a fixed budget find these types of accounts attractive because they allow customers to view their daily electricity usage, receive e-mail and/or phone notifications about things such as when prepaid balances are running low or when payments are received. Prepaid metering offers customers the opportunity to pay when they want in the amounts they want or can afford. Prepaid accounts may reduce or eliminate the need for deposits, disconnect/reconnect fees and late charges.

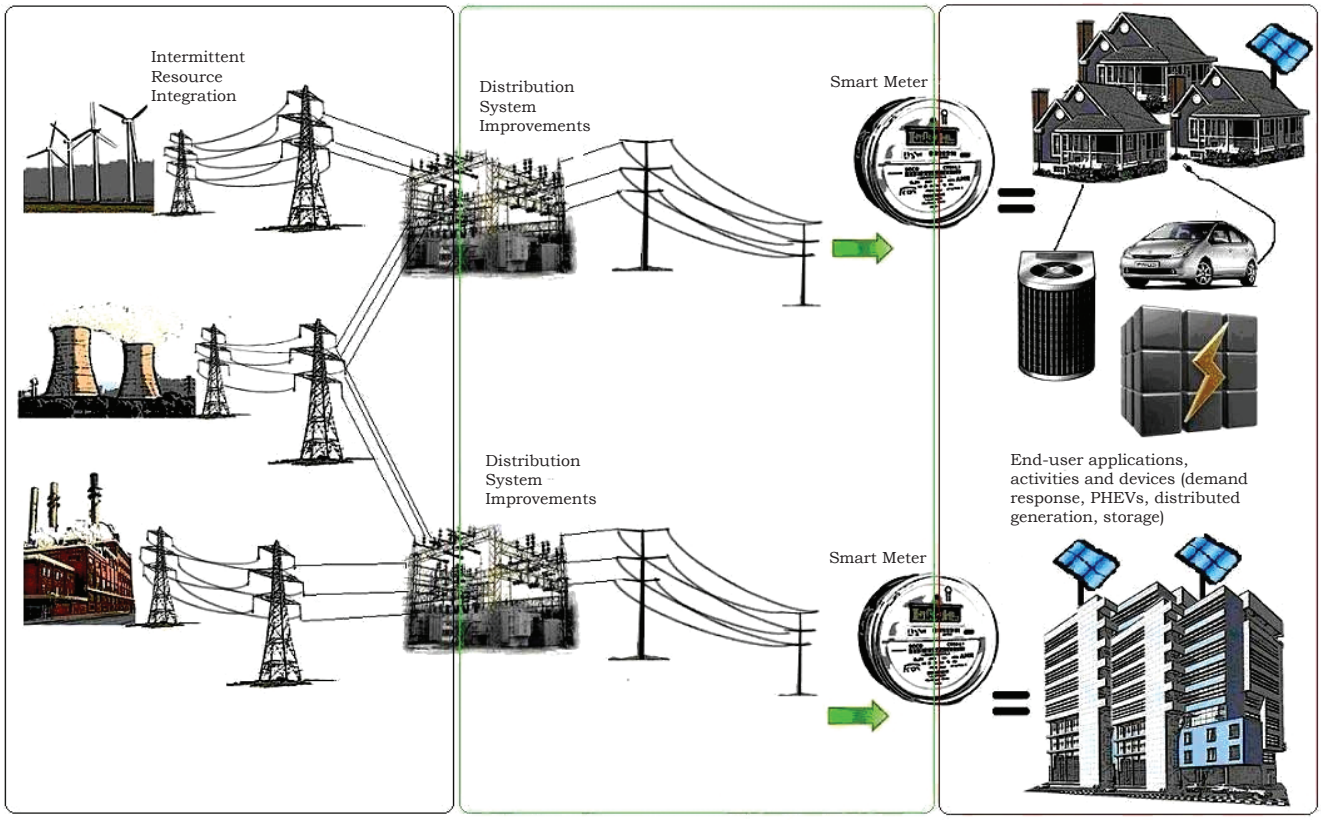
Reaching out to customers and customizing the educational approach to customer needs, resources and capabilities is a key issue to realizing customer benefits.

Customer education for successful Smart Grid deployment

Studies indicate the experience of the customer must be positive, and balance both the rational (price incentive, multiple forms of relaying information) and emotional (normative comparisons, environmental advantages, social implications) relationships in order to be successful. Managing customer expectations is crucial to program success. If customer savings are much lower than anticipated, the whole program could receive negative feedback.

There are many means currently available to communicate energy usage to customers. Single socket plug-ins, whole-home energy trackers, energy ratings, etc. are currently being used to inform customers of their energy usage, either for a specific device such as the personal computer or for an entire home. All of Missouri's investor-owned utilities (IOUs) and many of the state's electric cooperatives and municipals maintain websites where customers can obtain information concerning their electrical usage and receive useful information on how to reduce energy

Implementation of Smart Grid technologies, and specifically advanced metering infrastructure (AMI), will enable customers to more closely monitor their energy usage in "real time."



Smart Grid Components

Illustration by Miles Keogh/NARUC

consumption. Making these tools readily available and user-friendly will encourage customer participation. It is not necessary to have a Smart Grid in place to enable significant and positive behavior changes.

There is also an increased awareness of the amount of carbon dioxide released into the environment and an interest in moving away from fossil fuels such as coal, oil or natural gas to renewable energy sources (solar, wind, biomass, etc.) As these trends mature and gain greater acceptance and implementation, they will place a substantially higher demand on the electric grid system. The future of energy management is likely to involve a complex network of wireless, customer-controlled, home automation systems that provide two-way communications between the electric utility and the customer.

How secure and private is the data being transmitted?

With the introduction of a two-way communications system, comes concern about security and data privacy. A safe and reliable network is paramount for customer confidence and acceptance of the Smart Grid. Although security and data privacy are currently in the news and on the minds of many customers,

these issues have been addressed in several industries that include financial, defense, telecommunications, broadband wireless, Internet, Internet commerce, medical, etc.

In a Privacy by Design report entitled: *"Achieving the Gold Standard in Data Protection for the Smart Grid,"* several best practices are promoted including making sure that privacy is the default – the "no action required" mode of protecting one's privacy.

What National Activities Led To Smart Grid Implementation?

December 2007

US Energy Independence and Security Act was signed as a guideline for modernizing the country's electric power system.

2009

US Congress passed the American Recovery and Reinvestment Act, which allotted approximately $3.4 billion for Smart Grid investments.

March 2010

The Federal Communications Commission released the National Broadband Plan, which required electric utilities to provide consumers access to and control of their own energy information.

So who is going to pay for all this innovation?

Cost recovery is the "elephant" in the room. The deployment of the Smart Grid will require many resources, and if the customer does not realize the promised benefits, then the Smart Grid system does not achieve the desired results.

The PSC and all stakeholders must work closely together to make sure that the technology being implemented is prudent and beneficial for the IOU and the customer.

What role does the Missouri PSC play in the Smart Grid deployment?

The PSC has initiated several workshops and conferences to discuss the future of the Smart Grid in Missouri. Missouri IOUs, other government organizations, potential vendors, consumer advocates and other stakeholders have been involved in the workshops. There are also multiple pilot projects by IOUs, electric cooperatives and municipals that will provide more information. The PSC has opened a file (EW-2011-0175) as the repository for Smart Grid documentation.

The path forward will be determined to a large extent from the information obtained through these efforts.

Contributors to this article include Commissioner ***Robert Kenney****,* ***Natelle Dietrich*** *(Director Tariff, Safety, Economic & Engineering Analysis) and* ***Randy Gross*** *(Engineer, Energy Resource Analysis Section, Energy Unit.)*

NUTS & BOLTS

What components make up the Smart Grid?

The distribution system consists of the network that brings electricity to the end user. Smart Grid enhancements to the distribution system include the ability to identify and isolate potential trouble on the system and the ability to better control voltage levels. Keep in mind that these are the major components of the Smart Grid distribution system, but there are several other components that are required to have a modern, computer monitored and controlled system.

One of the key components of the Smart Grid that has received a lot of media attention is the electric meter. There are basically three types of electric usage meters in use today – electro-mechanical meters, automated meter reading (AMR) and advanced metering infrastructure (AMI).

A. **Electro-Mechanical Meters**

The most common type of electric meter traditionally used by electric utilities is the Thomson or electro-mechanical induction watt-hour meter, invented by Elihu Thomson of the American General Electric Company around 1889. In 1894 Oliver Shallenberger of the Westinghouse Electric Corporation refined this induction meter to produce a watt-hour meter of the modern electro-mechanical form. The meter is reliable. It is projected that U.S. vendors will soon quit offering these types of meters and only the following two types of meters will be available.

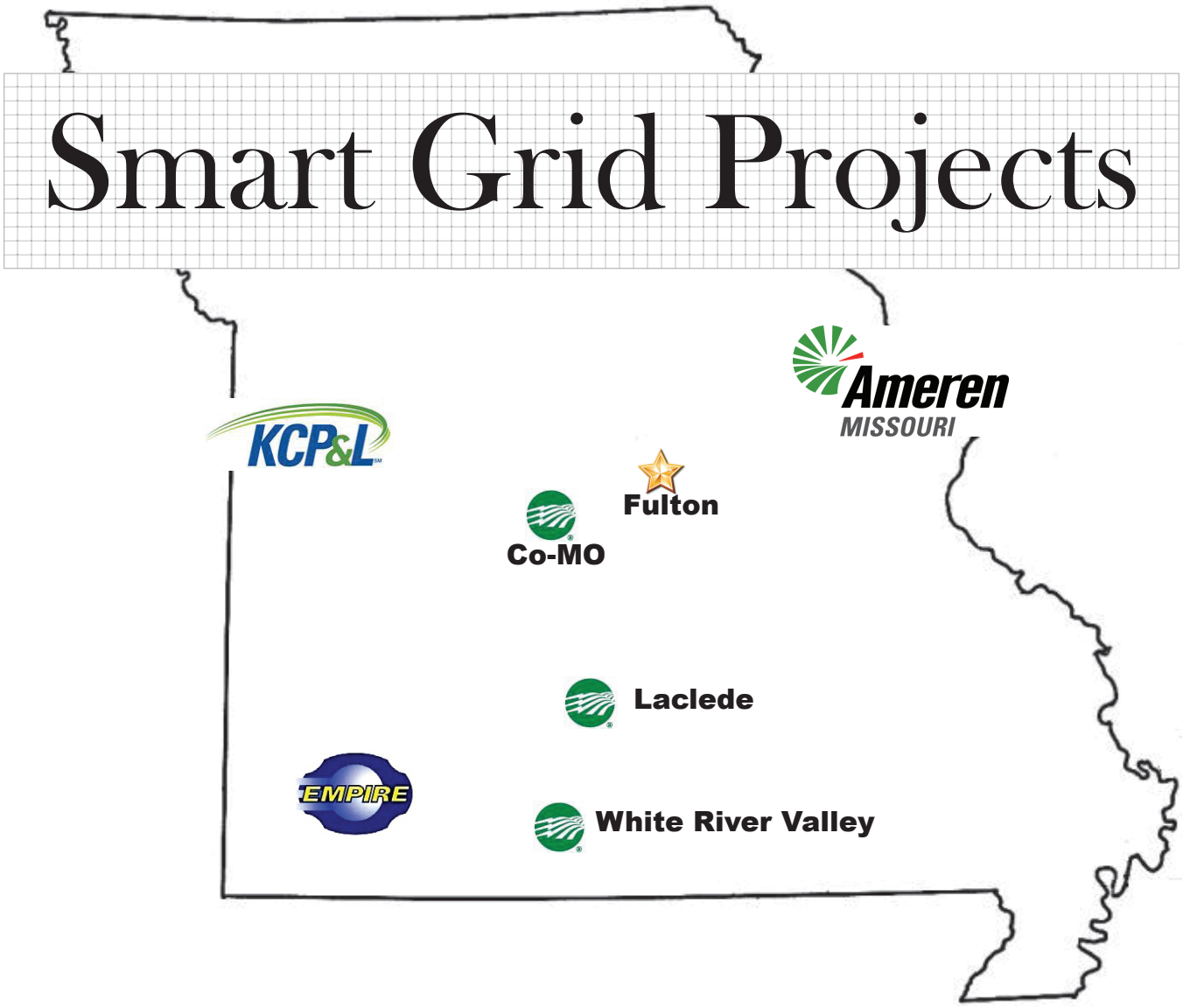
B. **Automated Meter Reading (AMR)**

Automated meter reading (AMR) is the technology of automatically collecting consumption, diagnostic, and status data from electric metering devices and transferring that data via **one-way communication**, to a central database for billing, troubleshooting, and analyzing. This advancement mainly saves utility providers the expense of periodic trips to each physical location to read a meter. AMR technologies include handheld, mobile and network technologies based on wired or wireless telephony, radio frequency, or power-line transmission for communicating data.

C. **Advanced Metering Infrastructure (AMI)**

Advanced Metering Infrastructure (AMI) refers to systems that measure, collect and analyze energy usage, and interact with advanced devices such as electric meters through various **two-way communications** media either on request (on-demand) or on pre-defined schedules. The required infrastructure to support AMI applications includes hardware, software, communications, consumer energy displays and controllers, customer associated systems and communications networks and interfaces.

Smart Grid Projects



The City of Fulton

The City of Fulton, a municipal electric utility, was one of 100 recipients of the Department of Energy's Smart Grid Grant awards on October 30, 2009. The city's project will replace more than 5,000 electric meters with an AMI smart meter network that includes a dynamic pricing program with in-home energy displays to reduce consumer energy use. The City also made an additional commitment of $1 million for gas and water meter improvements and will also include the installation of 2-3 vehicle charging stations.

Kansas City Power & Light Company's Smart Grid Demonstration Project

The KCP&L Smart Grid demonstration project (Project) is included in the DOE and Electric Power Research Institute (EPRI) demonstration programs. The project is located in an economically challenged area of Kansas City, Missouri. The Project's expectations are that the Project will deliver benefits to the immediate targeted end-users and provide valuable experience and lessons for future applications. The Project is being promoted as an end-to-end Smart Grid that includes advanced metering infrastructure (AMI), renewable generation, energy storage resources, leading edge substation and distribution automation and control, energy management interfaces, and innovative customer programs to include time-of-use (TOU) rate structures. TOU rates more closely reflect the actual cost of electricity for peak and off-peak time periods. This allows customers to vary usage in response to those rates, either by shifting usage from peak to off-peak hours or by reducing overall energy consumption.

White River Valley Electric Cooperative

White River Valley Electric Cooperative has a full deployment of AMR meters throughout its service area. This approach gives customers access to daily energy usage and allows them to track energy usage constantly. This provides a way for customers to better understand energy usage throughout the home and to minimize that usage.

Co-Mo Electric Cooperative, Inc.

Co-Mo Electric Cooperative, Inc. has been fully deployed with AMI meters since 2002. This has allowed the company to move into prepay electricity accounts with its customers, which would not have been realistic prior to AMI deployment. Prepay electric accounts offer customers the opportunity to pay for electricity when they want, in the amounts they want or can afford. Prepaid accounts may reduce or eliminate the need for deposits, disconnect/reconnect fees and late charges.

Laclede Electric Cooperative

Laclede Electric Cooperative (Laclede) deployed a wireless advanced metering infrastructure (AMI) system in 2008 as its first step toward the development of a Smart Grid that will enhance customer service, improve overall electrical network efficiencies, reduce operating costs, and automate the way energy is monitored and managed. The Smart Grid initiative includes a full change-out of approximately 36,000 existing meters with meters that will monitor consumption and power quality, pinpoint outages by individual meter or in aggregate and integrate customer data into backend billing, load forecasting, and other applications.

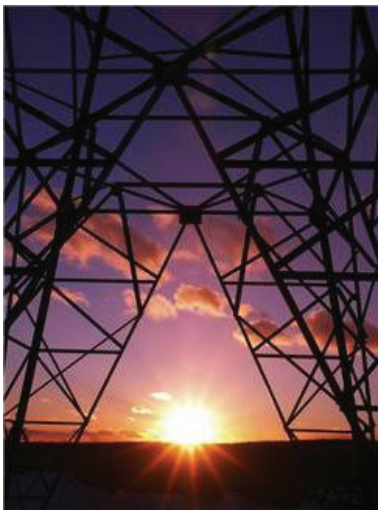
Ameren Missouri

Ameren Missouri has been 100 percent deployed with AMR since 2000 with 1.2 million meters in total, all owned by Ameren Missouri. There are approximately 18,000 meters configured for time-of-use/demand reporting and 5,000 configured for 15-minute interval reporting for industrial and large commercial customer use.

Ameren Missouri's investments are focused on the electric system grid to improve service reliability, operating efficiency, asset optimization, and a robust energy delivery infrastructure. Ameren Missouri has some network components that are automated via one way radio communications and some that are automated to adjust system voltage from commands issued from Ameren Missouri control offices.

The Empire District Electric Company

Currently, The Empire District Electric Company has electro-mechanical meters. Empire's grid infrastructure focuses on service reliability, operating efficiency, asset optimization, and building a secure, robust energy delivery infrastructure. New system components typically utilize digital communications.



Why smart grid?

Our current electric grid was built in the 1890s and consists of more than 9,200 electric generating units with more than 1 million megawatts of generating capacity. It is connected to more than 300,000 miles of transmission lines.

An electricity disruption such as a blackout can have a domino effect—a series of failures that can affect banking, communications, traffic, and security.

When a power outage occurs, Smart Grid technologies will detect and isolate the outages.

The new technologies will also help ensure that electricity recovery resumes quickly and strategically after an emergency—routing electricity to emergency services first, for example.

The Smart Grid is also a way to address an aging energy infrastructure that needs to be upgraded or replaced.

It's a way to address energy efficiency, to bring increased awareness to consumers about the connection between electricity use and the environment. "Smart meters," and other mechanisms, will allow consumers to see how much electricity they use, and when they use it.

(U.S. Department of Energy)

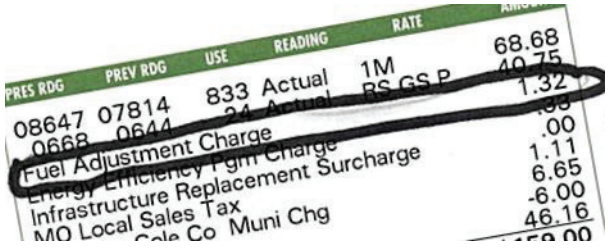
What's this on my electric bill?

Examining the Fuel Adjustment Charge (FAC)

Each month, the Missouri Public Service Commission's Consumer Services Department receives a number of calls from consumers regarding an item on their electric bill and whether it's a new charge. Maybe you thought about calling and asking, *"What is an FAC?"*

FAC stands for fuel adjustment charge. If you are an electric customer of The Empire District Electric Company, Ameren Missouri or KCP&L (in the former Aquila, Inc. service territories), it is a part of your monthly electric bill. It's not a new charge; in fact some customers have had an FAC charge on their electric bills since 2007. Still, it is a charge consumers may not know much about.

The FAC is designed to reflect fuel and purchased power cost volatility as well as company off-system sales revenues. Those costs tend to change, up and down, quite frequently. The FAC attempts to capture those costs in a more timely fashion so that the company recoups cost increases closer to when those costs occur and consumers benefit faster, in lower rates, when those costs go down.



The Fuel Adjustment Charge appears as a separate line-item on your electric bill.

The Empire District Electric Company and KCP&L (in the former Aquila service territories) have had an FAC for nearly five years. Both companies make filings with the Commission to adjust the charge, up or down, every six months. Ameren Missouri, the state's largest investor-owned electric company, makes three filings a year to reflect changes to fuel, purchased power costs and off-system sales revenues. Ameren Missouri has had an FAC since 2009.

Fuel costs are costs the electric company incurs to purchase fuel such as coal, natural gas, uranium, or heating oil. Those fuels are used to run the power plants that produce the electricity that goes to your home. Purchased power costs are costs the company incurs if it has to buy power, either through a contract with another electric utility or on the spot market, to meet its customers' needs.

An example of when an electric company might have to purchase power would be if the company has a power plant out of service (not providing power to its customers), the outside temperature is 100 degrees and a number of customers are using air conditioners to cool their homes. In this example, the electric company would purchase energy from other electric producers, on the open market, to meet its customers' needs.

Another example would be if another electric company has excess capacity (power) and is willing to enter into a contract to sell that electricity at a price that is lower than what it would cost the Missouri electric company to produce its own electricity.

Off-system sales is a term often used to describe sales of excess power on the open market by the electric company because the price that it receives for the sale is greater than the price to generate power. The revenue from those sales goes toward reducing the overall fuel costs to serve its customers.

When the Missouri Public Service Commission decides a rate case involving an electric company such as Ameren Missouri, customer rates (base rates) are set reflecting a certain normalized (adjusted to curb the effects of unusual circumstances) level of fuel costs and off-system sales revenues. The Commission makes that determination based upon a thorough review of evidence filed by all parties in the rate case. Establishing a certain level of fuel costs and off-system sales revenues in "base rates" is important as it serves as a starting point or benchmark when adjustments are made, either up or down, to the FAC.

As you move forward from a rate case decision, fuel costs, purchased power costs and

off-system sales revenues change from the level set in the "base rates" of a rate case. The FAC is designed to recognize those changes.

When an electric company seeks to change its FAC, it is required to make a filing with the Missouri Public Service Commission. Under PSC rules, the Commission has 60 days after the filing to make a decision. After the filing is made, it is thoroughly reviewed by the PSC staff. The PSC staff then makes a recommendation to the Commission on whether the filing should be approved.

If the filing complies with state law, PSC rules, is mathematically correct and receives PSC staff approval, the Commission allows the change to take effect.

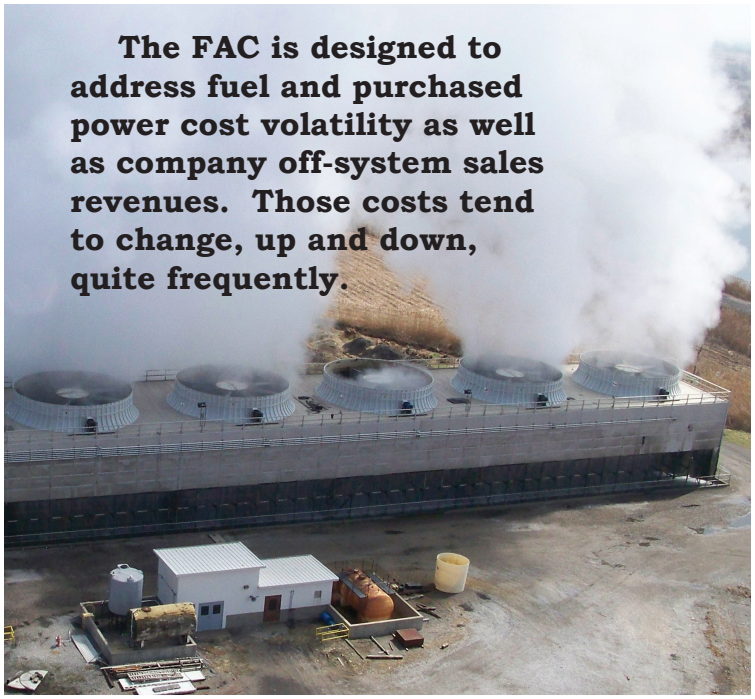
The fuel adjustment charge is calculated using actual fuel costs and predicted customer usage. As part of the FAC process, a true-up is conducted to make sure what the company paid in fuel costs is what it billed its customers through the FAC.

An annual true-up is necessary to reflect actual customer usage for that period of time reflected in the FAC. Predicted versus actual usage vary based upon factors such as the weather and economic conditions. If an over-collection or under-collection has occurred, it is ultimately reflected in the FAC.

Creation of the FAC was the result of Missouri legislation passed and signed into law in 2006 (SB 179). That bill provided the PSC with the authority to grant periodic rate adjustments, between rate cases, for electric, natural gas and water corporations. Electric companies were allowed to recover costs for fuel, purchased power and environmental compliance. The Commission implemented this law through a collaborative rulemaking process that involved all interested stakeholders.

SB 179 requires a prudency audit be conducted at least every 18 months to ensure the company made prudent decisions in its fuel and purchased power costs as well as its off-system sales associated with its FAC. The PSC staff can, and has, after its audit review, sought to reduce the FAC if it believes imprudent decisions were made. The Commission ultimately decides if an imprudent decision was made and determines the impact of the decision on customer rates.

The FAC is designed to address fuel and purchased power cost volatility as well as company off-system sales revenues. Those costs tend to change, up and down, quite frequently.



The Empire District Electric Company's Asbury Power Plant.

Fuel costs are costs the electric company incurs to purchase fuel such as coal, natural gas, uranium, or heating oil. Those fuels are used to run the power plants that produce the electricity that goes to your home.

NEED HELP? *PSC Consumer Services may be able to lend a hand*

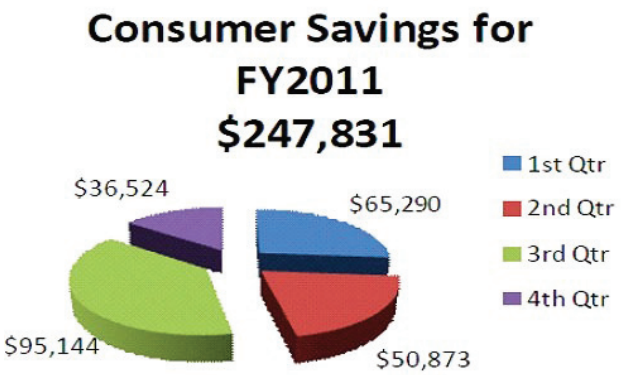
You have a billing problem or a service complaint. You've contacted the utility company but haven't been able to resolve the matter. Where can you turn? Who can you call for help? If your utility company is regulated by the Missouri Public Service Commission, please contact our Consumer Services staff.

"Often, the first contact a consumer has with the Public Service Commission is through Consumer Services," PSC Chairman Kevin Gunn said. "Our consumer services specialists do a great job providing information to the consumer, answering questions that they might have or trying to resolve an issue the consumer has with their utility company."

"We spend a lot of time with customers in order to get all of the information that is needed to further investigate the issue(s) they have with the utility company," Gay Fred, Manager of the Consumer Services Unit, said. "We also seek information from the company as part of our review process. In most cases, working with both parties, we are able to resolve the issue to the satisfaction of all those involved."

Consumer Services staff can investigate an inquiry or dispute if the concern pertains to:

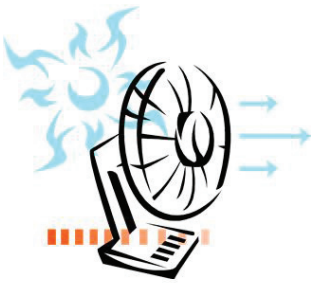
- ✓ **Rates or charges**
- ✓ **Installations or disconnections**
- ✓ **Responsibility for a bill**
- ✓ **A request for a deposit**
- ✓ **Refusal of service by a utility**
- ✓ **The quality and type of utility service**
- ✓ **A utility's policies and procedures**



Intervention can lead to customer savings. During the 2011 fiscal year, the Consumer Services Unit saved consumers more than $247,800. Consumer Services handled more than 10,000 calls and/or inquiries during the 2011 fiscal year.

But it's not always about money. "Many times, working with the customer and the utility company culminates in better utility services for the customer. Consumers also feel like their voices have been heard," said Fred.

The PSC Consumer Services Unit has a toll-free hotline consumers can call for assistance (**1-800-392-4211**). Complaints may also be submitted by fax (573-526-1500), by letter (Missouri PSC, P.O. Box 360, Jefferson City, Missouri 65102) or by e-mail (http://www.psc.mo.gov/info-con-complaint-form.asp).



Did you know Missouri has a Hot Weather Law?

It is in effect from June 1 through September 30, to protect all Missouri residential customers, including apartment building tenants, from having their electric or gas service disconnected due to non-payment when electricity or natural gas is used as the main source of cooling or to operate the only cooling equipment.

The utility is not allowed to disconnect service if the National Weather Service local forecast between 6:00 AM and 9:00 PM is predicted to rise above 95 degrees or the heat index is predicted to rise above 105 degrees.

HOT WEATHER TIPS

Close blinds and draperies on the sunny side of your home to block the sun's rays to help keep your home cooler. As much as 50% of the heat entering your home comes through windows.

Use fans to circulate air to help make you feel cooler, even with a higher thermostat temperature setting. In the summer, ceiling fan blades should rotate counterclockwise when viewing from below.

Call United Way 2-1-1 for energy assistance information, such as LIHEAP (Low Income Home Energy Assistance Program), which is a federally funded program designed to help low-income households meet their cooling and heating needs. Funding is limited and you must apply with your local Community Action Agency.

Things You Can Do Around The House

No Cost

Close off rooms that are not in use.

Avoid moving the thermostat up or down during the day because this will waste energy and money.

Make sure cooling vents are not blocked.

Use cold water when washing your clothes and dry on a line to avoid heat-producing dryer usage.

Shift the use of heat producing and major appliances from midday to early morning or later evening if possible.

Low Cost

Caulk around windows and doors.

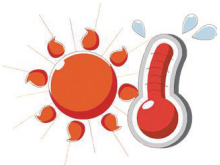
Replace conventional bulbs with efficient bulbs.

Have your furnace and air conditioner regularly inspected and maintained.

Replace showerheads with low flow heads.

Seal up areas around plumbing penetrations on outer walls.

For long term energy saving tips, please visit www.beenergyefficient.org



For those without air conditioning, listen for local media announcements or call United Way 2-1-1 for Cooling Center locations that may be available during periods of excessive heat.

If you are unable to pay your utility bill, contact your utility company to see if payment arrangements are available. DO NOT ignore the bill.

Lifting the curtain on utility regulation

By Kevin Gunn, Chairman
Missouri Public Service Commission

The rate-making process for utilities can be complex, and the public often feels left out of the discussion. With major rate cases filed by Ameren Missouri and Kansas City Power & Light, I thought I would try to lift the curtain on utility regulation and encourage more citizens to take part.

Missouri uses a time-tested process to set utility rates. As railroads and other utilities were developed more than a century ago, monopolies were the most efficient way to finance and build utility services. A special regulatory system was developed by states and defined by the U.S. Supreme Court to protect consumers against unfair pricing by these now-regulated monopolies.

Since 1913, the Public Service Commission — Missouri's first and oldest state agency — has regulated utility rates. The Public Service Commission is not a consumer advocate – that job falls to the Office of Public Counsel — nor is it an advocate for utilities. The Commission, much like a court, is an unbiased and objective tribunal that makes findings of facts and conclusions of law based on the evidence in the record of each case before it.

Ratemaking is a two-step process. First, the revenue requirement must be determined: this is the amount of money the utility requires from retail customers to prudently provide safe and adequate service. The revenue requirement includes four factors: (1) the "rate of return" or profit the utility has an opportunity to earn; (2) the total investment or "rate base" on which a return can be earned; (3) accumulated and on-going depreciation of plant and equipment; and (4) the company's prudent operating expenses.

It is important to note that a return on a utility's investment is not guaranteed profit, but merely the opportunity to earn.

Once the revenue requirement is determined, the second step is to then design a rate structure to equitably collect that revenue annually from different classes of utility customers: industrial, commercial or residential. The goal is to match as closely as possible the rates to the cost of providing service to that class.

In deciding cases, the Commission takes testimony from parties, including its technical staff of engineers, lawyers and accountants who scrutinize and audit rate requests. Unnecessary or excessive expenses are not allowed.

The law also directs the Commission to take into account something beyond hard numbers and accounting schedules; the Commission must ensure that utility expenses, plants, services and operations are in the public interest. Input from the citizens themselves is essential to help determine that the public interest is properly served.

To ensure public input into the ratemaking process, local public hearings are held throughout the utility's service area. At these hearings, customers are briefed on the process by PSC staff. Citizens are then given the opportunity to provide sworn testimony that will be entered into the evidentiary record on which the Commission will base its decisions in the case.

In this way, the PSC gives every utility consumer the chance to "take the stand" in rate cases, just like expert witnesses or company executives who testify in hearings.

The Public Service Commission regulates only investor-owned utilities. By law, rate cases must be completed in 11 months or less. Decisions by the Commission must pass judicial review – they are often challenged in appellate courts – as part of our system of assuring due process.

The PSC strives to sustain the balance between customers and the utilities that serve them. Customers will receive notices in their billing statements about local public hearings regarding proposed changes in their rates and can always contact the PSC at www.psc.mo.gov or by calling 1-800-392-4211. The input and participation of everyone is essential to keep that important balance between companies and customers.

Employee SpOtlight

Five Questions With:

Hojong Kang

Regulatory Economist III

1) Main job duties

As a regulatory economist, I review the electric utility integrated resource plan filings and the general rate increase filings of investor-owned electric utilities and contribute to the PSC Staff reports in cases regarding demand-side analysis and street lighting. I am also involved in the review of the electric utilities' filings related to the Missouri Energy Efficiency Investment Act of 2009.

2) How I came to work at the PSC

Because I met a lot of Korean government officials while working at MU, I also took a strong interest in working for the government and dreamed of working in a government position someday. One day, I found a job posting from the website and applied for the job. Finally, I became a government employee.

3) What I did before coming to the PSC

I spent four years as the Associate Director for the International Economic Research Institute at the University of Missouri and facilitated government policy discussions with Korean government officials in the international scholar community at the University of Missouri. From 2006 to 2008, I taught economics classes including Money, Banking and Financial Market, Firm Theories, and Intermediate Macroeconomics as an Adjunct Assistant Professor at the University of Missouri.

4) The most interesting thing about my job

Almost everyone knows that natural resources are very important. However, people generally do not recognize the importance of the demand-side resources which are conservation, energy efficiency, and demand response programs in the utility industry. In my job, it is interesting to learn new issues regarding demand-side management and how they have an influence on the implementation of demand-side resources in Missouri.

5) One thing people do not know about me

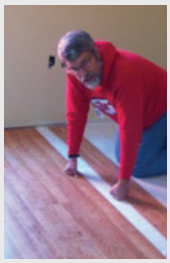
I have a beautiful wife and three children, who always support me and love me. I am fortunate and blessed to have such a wonderful family.

During each edition of the PSConnection Magazine, we will spotlight a member of the PSC Staff. Did you know that approximately 48 percent of our employees have more than 15 years experience.

Connections: News, Notes & Events

Helping Habitat For Humanity

Commissioner Robert Kenney is heading a national volunteer campaign aimed at promoting public service, energy conservation and home weatherization. As part of the "Anybody Can Serve, So Let's Conserve" initiative, state public service commissions are volunteering at various Habitat for Humanity projects throughout the country. At right, Missouri PSC member Morris Woodruff volunteers at a Habitat for Humanity home in St. Louis.



National Safe Digging Month

Governor Jay Nixon signed a proclamation designating April as National Safe Digging Month. Remember, always call 811 or 1-800-DIG RITE before beginning any digging or excavation project.

'Utility Days' In Kansas City

The Public Service Commission sponsors "Utility Days" in Kansas City on April 5 at the Project Living Proof Home. "Utility Days" provides the public with information and education in a "one-stop shop" setting. Commissioner Terry Jarrett represented the PSC at the event.

Capitol Display

As part of National Safe Digging Month in April, the Public Service Commission worked with Missouri One Call to display One Call's new interactive damage prevention trailer in front of the state capitol on April 16.

Chairman Gunn Honored

PSC Chairman Kevin Gunn receives the inaugural Barnich Award, recognizing the ongoing commitment of National Association of Regulatory Utility Commissioners (NARUC) to furthering regulatory best practices around the world. Chairman Gunn received the award during a NARUC ceremony in Washington, D.C. on February 5. Pictured with Chairman Gunn (right) is Commissioner David Armstrong, Kentucky Public Service Commission and Chairman of NARUC's Committee on International Relations and Commissioner Colette D. Honorable, Arkansas Public Service Commission, who submitted the award nomination.

Photo by Aida Timm/NARUC

Chairman Gunn accepted the award on behalf of the entire Missouri Public Service Commission and Staff.

Missouri One Call's new interactive trailer was parked outside the State Capitol building on April 16, 2012, to promote awareness of National Safe Digging Month. The educational display features two 32-inch screens running continuous loops of video; a glass floor showing underground lines and pipes corresponding to natural gas, electric, telephone cable and water meters. There are also displays and damage prevention literature available at the trailer.

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