

Giving Thanks for Financial Stability



Fall is typically a time for giving thanks—thanks for the harvest and bounty of the year. The originators of Thanksgiving, the Pilgrims, survived many hardships on their journey to “the New World” and even more after they arrived to a novel and unexplored land.


This year, I am thankful that your cooperative has continued to be financially sound, without sacrificing reliability. An indicator of financial health is the ability to return member equity in the form of capital credits.

Because CAEC is a not-for-profit organization, owned by its members, the revenue over and above the cost of doing business is considered “margins.” These margins represent operating capital received from those who use the service, which in turn is your equity, or ownership, of the cooperative. This equity (or capital) represents investments in infrastructure, such as poles, wires, buildings and trucks.

Since 1994, your trustees have authorized the return of more than \$6.3 million in capital credits to members. This year another \$600,000 will be returned. Based on the equity management plan, adopted by the Board in 2004, our goal is to maintain a 34 percent member equity level (with loans from the Rural Utilities Service and the National Rural Utilities Cooperative Finance Corporation providing the remainder) and return it on a 30-year retirement cycle.

This year capital credits will reflect the percentage of ownership in a portion of the years 1982 and 1983.

The release of capital credits is a member benefit unique to cooperatives and also serves as an indicator of sound financial planning and the wise utilization of member funds. In order to control costs where we can, your cooperative employees work hard to develop a strict budget that is rigorously monitored. As we continue to budget and forecast for the future, we intend to continue operating in a manner that allows the return of your member equity.

As I think of what it must have been like for the Pilgrims entering into an uncertain future, I can't help but also think of how we in the electric industry are encountering our own undefined journey. Through proposed legislation and environmental regulations, the way we conduct business today is probably not the way it will be done tomorrow. But by working together and with careful planning, we can chart our course to a successful future with a financially viable cooperative. 

Tom Stackhouse, CAEC President and CEO

A listing of unclaimed capital credit checks for 2008 is included in the center of this magazine.

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Rockford Office
U.S. Highway 231

Wetumpka Office
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CAEC Mailing Address:
P.O. Box 681570
Prattville, AL 36068

The Power of Programs

CAEC offers many programs and services year-round to help you save money, safeguard the environment and allow you to help take control of your energy use.

Member Savings

The Co-op Connections Card is a unique value of cooperative membership. The card allows you to take advantage of member-only discounts through national and local retailers. Discounts on everything from hotels to car rentals to flowers and fine dining are available exclusively to CAEC members.



The Co-op Connections Card can also provide valuable prescription drug discounts at participating pharmacies. Since this program was introduced two years ago, CAEC members have saved nearly \$200,000 on their prescriptions. To see how and where the card will help you save, visit www.caec.coop for a full list of participating vendors or see our special vendor insert in the December issue of *Alabama Living*.

Protecting the Environment

CAEC offers opportunities that make it easy for you to help protect the environment while making wise energy choices:

- The Green Power Choice program allows members to take an active role in protecting the environment. Methane gas, produced in landfills, is used to generate electricity—a green alternative to typical power production. Members who are looking for an environmental option can purchase 100-kWh blocks for \$2 and have the cost included on their power bill.



- CAEC is a recycling center for your CFLs (compact fluorescent lamps). These lamps generate 70 percent less heat, use 2/3 less energy than incandescent bulbs and can save you \$30 or more in energy costs during each bulb's lifetime. As with any fluorescent light, CFLs contain a small amount (4mg) of mercury. To promote the use of these energy efficient bulbs while keeping the environment in mind, CAEC will take your used CFLs for recycling. Proper recycling captures the mercury so it can be reused, rather than being dispersed into the environment. Broken CFLs can be brought to any of CAEC's service centers for disposal. They should be double bagged and sealed in zip-top plastic bags.

Controlling our Use

Introduced in May 2009, the Web site www.MyUsage.com permits CAEC members to view their energy usage online



24-7. This free, online service not only allows you to monitor your daily power consumption, but it lets you set e-mail alerts when your usage approaches a certain threshold that is determined by you. This unique program gives you the ability to see when you're using the most electricity.

Members can also help us keep rates stable by participating in the cooperative's Peak Shaving program, which simply delays the reheating cycle of your electric hot water heater until the peak usage has passed. While you'll experience no difference in your water heater's performance, the Peak Shaving program helps us reduce our need to purchase more expensive power, which can lead to higher energy costs for us all. A peak shaving device will be installed on your electric hot water heater by a licensed electrician at no charge to you.

To learn more about any of these great programs, visit our website (www.caec.coop) or call 1-800-545-5735. ☎

CAEC Offices Will be Closed Nov. 26 & 27 for Thanksgiving

Nuclear Power--Generating Clean Energy

As America looks for clean energy solutions, there is one form of efficient, clean power production that our nation has not explored for the last 52 years—nuclear. Compared to other countries using nuclear power production more readily, the U.S. currently has only 104 nuclear reactors operating with the typical nuclear power plant employing between 400 to 700 people.

Although nuclear power is efficient, it takes many steps to get it into a usable form of energy for your home. Below we look at what it takes to use a fuel, such as uranium, and to convert it into power for your home.

Mining

The production of nuclear power begins in the mines—where miners search for uranium ore



Mining photo courtesy of COGEMA, Inc.

which serves as the fuel for nuclear power production. Uranium miners use several techniques to obtain this chemical element: surface (open pit), underground and in-situ leach mining. Underground Uranium mining requires the same basic steps as required for any other type of mining—such as coal.

Milling

After uranium ore is removed from the ground, it must be processed by “milling,” which involves a sequence of physical and chemical treatment steps. The final product of milling creates yellowcake (named for its powdery texture and yellowish color).



Yellowcake photo courtesy of NEI

Conversion and Enrichment

The drums of yellowcake must go through yet another process to be transformed into a fuel that can be used by power plants. Natural uranium is composed of two types: U-235 and U-238. Only U-235 is capable of being used for energy production, but it only makes up less than 1 percent of natural uranium. So, for uranium to be used for fuel in a nuclear power plant, the range of U-235 must be raised or “enriched” into a gaseous state.

To understand how enrichment works, picture the gaseous molecules as sand particles suspended in air. All molecules are blown through thousands of filters or sieves, one after another. Because the lighter U-235 particles travel faster than the heavier U-238 particles, more of them penetrate each sieve. As more sieves are passed, the concentration of U-235 increases. The process continues until the concentration of U-235 is raised, or enriched, to 3-5 percent.

Fuel Fabrication

Before it can be made into nuclear fuel, however, the enriched uranium fluoride gas is changed to uranium dioxide—a solid. Then it is pressed into ceramic pellets the size of the tip of a person’s little finger. The fuel pellets are inserted and stacked end to end into slender, heat-resistant metallic tubes, or fuel rods which can range in size from 12-17 feet tall. The fuel rods are combined to form fuel bundles and on average, 157 fuel bundles (each weighing approximately 1,450



Fuel pellet photo courtesy of NEI

pounds) are loaded into each reactor core. As the U-235 is exhausted, fission, or the splitting process of atoms, slows, therefore requiring fuel bundles to be replaced every 18-24 months.



Fuel bundle photo courtesy of TXU Electric

Power Generation

When the fuel bundles are placed in the reactor, it is the process of the uranium atoms splitting as they are bombarded with free neutrons—also known as fission—that creates energy which is given off as heat. However, control rods made of the chemical element boron are placed into the fuel bundles to slow down or altogether halt the fission of the uranium atoms, giving the power plant the ability to precisely control the amount of heat given off.

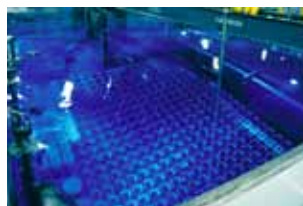
The heat that is produced through fission is sent to a Pressurized Water Reactor (PWR) where it heats water to 500°F but does not allow it to boil, much like a pressure cooker. Steam generators then take river water and run it against pipes that contain the PWR heated water to convert the river water into steam. The steam is then sent to turbines to begin the



electricity power production process. The steam is then released through cooling towers (as seen in the photo above).

Disposal

In one year a typical nuclear power plant generates 20 metric tons of used nuclear fuel. The nuclear industry generates a total of about 2,000 metric tons of used fuel per year. During the past four decades, the entire industry has produced about 60,000 metric tons of used



Wet storage photo courtesy of NEI

nuclear fuel. If used fuel assemblies were stacked end-to-end and side-by-side, this would cover a football field about seven yards deep.

Most U.S. nuclear plants store waste either through on-site dry storage or a spent fuel pool. Since water is a natural radiation barrier, spent fuel is loaded into airtight steel or concrete-and-steel containers, known as casks, and then carefully delivered to a steel-lined, concrete pool of water for storage.



Dry storage photo courtesy of Surry

On-site dry storage is done in a similar matter, with the used fuel being placed into engineered concrete and steel casks that are set on a special pad. Each cask can weigh 300,000 pounds and is strong enough to take a hit from a fast moving truck or even a train without any damage.

Safety First

U.S. nuclear plants are well-designed, operated by trained personnel, defended against attack and prepared in the event of an emergency.

In addition to backup systems that monitor and regulate what goes on inside the reactor, U.S. nuclear power plants also use a series of physical barriers to prevent the escape of radioactive material. Everything from the fuel pellets to the fuel rods are encased in materials that limit radiation exposure. All of these items are further contained in a massive reinforced concrete structure—called the containment—with walls that are four feet thick. The lack of a containment structure is what helped lead to the failure of the Chernobyl plant in Russia, something that cannot happen in the United States since all plants are required to have containment structures and other safety features.

It takes many steps to generate electricity produced from nuclear power. However, nuclear power allows us to have a clean, alternative energy source. When you take into account the planning process which includes meteorological, seismic and population studies, it can take up to 10-15 years to build a nuclear plant, from planning to operation. But in doing so, an efficient energy source can deliver power to your home. ☞

Central Alabama Electric Cooperative (the Cooperative or CAEC) is a member-owned, not-for-profit electric cooperative headquartered in Prattville, providing retail electric service in the counties of Autauga, Bibb, Chilton, Coosa, Dallas, Elmore, Lowndes, Perry, Talladega and Tallapoosa in the State of Alabama. CAEC hereby gives public notice regarding the process to be followed by it in implementing the statutory directives in the Energy Independence and Security Act of 2007 (EISA 2007), which amended the Public Utilities Regulatory Policies Act of 1978 (PURPA). EISA 2007 established new Federal standards under Section 111(d) of PURPA, requiring electric utilities with annual retail sales of electric energy exceeding 500 million kilowatt hours to consider whether to adopt four new standards.

Written comments regarding these standards will be accepted from CAEC Members through the close of business day on Jan. 15, 2010. Written comments can be sent to the Cooperative's web site at www.caec.coop, or mailed to Central Alabama Electric Cooperative, Attn: PURPA Comments, P.O. Box 681570, Prattville, AL 36068, or submitted at any of the four Service Centers (Clanton, Prattville, Rockford, or Wetumpka). All written comments will be made available to Members by Jan. 22, 2010, and an additional thirty (30) days will be allowed for further comments, culminating on Feb. 22, 2010.

The four new PURPA Standards are summarized below:

I. INTEGRATED RESOURCE PLANNING

Central Alabama Electric Cooperative will cooperate with its power supplier when the power supplier wishes –

- (A) To integrate energy efficiency resources into resource plans; and
- (B) To adopt policies establishing cost effective energy efficient rates.

II. RATE DESIGN MODIFICATIONS TO PROMOTE ENERGY EFFICIENT INVESTMENTS

- (A) The Cooperative offers time of use rates and a commercial coincident rate to the extent allowed by the wholesale power rates of its

power supplier in order to align rate incentives with the delivery of cost effective energy efficiency and the Cooperative promotes energy efficiency investments by its members.

(B) The Cooperative will consider:

- (i) Adopting rate designs that encourage energy efficiency for each member class to the extent feasible under the wholesale power rate structure to which it is subject and will include timely recovery of energy efficiency related costs to the Cooperative.
- (ii) Subject to the possibility of change at a later date, the Cooperative will continue to promote the peak shaving water heating load control program, Touchstone Energy home certification (including home energy audits), GeoThermal heat pump programs, dual fuel heat pump programs, new efficient electric water heater programs, manufactured home efficiency programs, compact fluorescent lighting programs, the Conserve 101 energy efficiency education programs and other programs that reduce both peak demands for energy as well as promote energy efficiency. The Cooperative will also seek to educate home owners about federal and state incentives that make energy efficiency improvements more affordable.

(C) The Cooperative will continue to consider rate design modifications that promote energy efficiency investments but declines to implement any additional actions at the present time.

III. CONSIDERATION OF SMART GRID INVESTMENTS

(A) The Cooperative has installed a system wide advanced metering infrastructure ("smart meters") and is in the process of installing a supervisory control and data acquisition system ("SCADA") which enhances the reliability and efficiency of the Cooperative's system. The Cooperative's power supplier has also made significant investments in smart grid hardware and software.


(B) As additional investments are made in smart grid technologies, the Cooperative will consider investments in additional qualified...

Continued on page 34

...smart grid systems based on total costs, cost effectiveness, improving reliability, security and system performance.

(C) Since the Cooperative has no source of funding other than that provided through the sale of electricity to pay for smart grid or any other types of investments, it will plan to recover from its members any capital, operating expenditure or other costs relating to the deployment of any qualified smart grid system components and to recover the remaining book value costs of any equipment rendered obsolete by the deployment of such smart grid investments.

IV. SMART GRID INFORMATION.

(A) This standard contemplates the provision of direct access by members to information in a real time basis concerning their usage of electricity and the costs of such usage at various times, as well as projections of day ahead price information. The Cooperative currently allows members to view their previous daily usage information via the internet. The Cooperative is currently investigating ways to allow members to view hourly usage information via the internet. At the present, it is believed that the costs of installing the equipment necessary to enable a member to have real time data and day ahead projections would exceed any savings when viewed on a system wide basis. Consequently, the Cooperative declines to adopt any portion of this standard at this time. 

Light up for Less with LED Lights


With holiday decorations already filling aisles of local retailers, you may notice a few products that decorate your home while also helping save your energy dollars.

Light-emitting diodes—or “LED”—holiday lights offer a quality alternative to incandescent lamps with the following advantages:

- Running LED holiday lights on one 6-foot tree for 12 hours per day for 40 days can save 90 percent or more energy when compared to traditional holiday lights.
- Last longer; they have an operational life span of roughly 20,000 hours, enough to last for 40 holiday seasons.
- Are cooler than incandescent bulbs, reducing the risk of fire and personal injury.
- Made in the same shapes and varieties as typical incandescent holiday lights, but LED holiday lights are more durable than incandescent bulbs, with the lamp shape typically made out of a solid plastic rather than glass.
- Use less power so it is safer to connect multiple strings of LED holiday lamps end-to-end without overloading the wall socket.

Look for manufacturers and brands of ENERGY STAR®-qualified decorative light strings, which have been tested for both energy efficiency and quality standards.

The U.S. Department of Energy estimates that if every household switched to using LED holiday lights, the country would save approximately \$410 million in electricity costs. If both residential households and commercial businesses switched to LED holiday lights today, the savings would be equivalent to the output of almost one large (1000 MW) electric power plant or the annual electricity consumption of almost 500,000 households.

When you pass those holiday decorations at your local retailer, be sure to check out the selection of LED lights and show your holiday spirit while saving energy! 



LED holiday lights have a life span of approximately 20,000 hours and save 90 percent or more on energy compared to traditional holiday lights.



Recipe for *Efficiency* from CAEC

Window Weather Stripping

How many windows are on your home? Did you know each window can represent a giant hole when it comes to keeping your home efficient? Cracks and spaces in the sash of your windows can allow outside

air into your home, causing you to lose your climate controlled air. Weather stripping your windows is a simple and efficient way to help close this gap.

Utensils (tools):

Scissors
Tape Measure

Soap
Water

Ingredients (supplies):

Self-adhesive foam insulation



1. Clean bottom of the window sash (the part of the window frame with the glass panes) with soap and water and let dry.

2. Measure the length of the sash with the tape measure.



3. With the scissors, cut the foam weather-stripping to the same length as the window sash.

4. Firmly press the adhesive side of the foam weather-stripping to the bottom of the sash.



5. Peel the back from the foam (this backing keeps the foam from sticking to itself while in the package).



6. Close the window and lock it to ensure a tight seal.

By adding extra insulation to your windows with weather-stripping, you can keep cold drafts and hot air from infiltrating the climate controlled air in your home—leading to increased comfort and energy savings.