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Last month I wrote about the “cooperative way” of doing business and how co-ops operate on a set of seven principles, including principle number three: Members’ Economic Participation. This simple statement means as you pay your electric bill each month, you contribute to the capital of the co-op. With this contribution, you receive a benefit you may not have thought of when you signed up to receive service from CAEC: a portion of what you pay is returned to you, as a member.



Unlike investor-owned utilities, whose profits benefit shareholders or municipalities whose margins help pay other city services, co-ops are unique in returning margins through capital credits to those who actually used the service. As a not-for-profit organization, we operate at cost, receiving only enough revenue to run and expand the business—with no need to raise rates for the purpose of generating profits. So, the margins, or profits, made each year by your cooperative are eventually returned to our members from the capital credits, or members’ equity (ownership), in the co-op.

Capital credits are a unique part of the co-op business model and are used to keep from borrowing all the funds needed for the utility plant and to meet the financial requirements of our lenders. They are normally retired and paid to our members when the infrastructure is fully depreciated and fiscally retired after an average useful life of 25 to 35 years. Based on this capital investment lifespan, your board has planned to return your equity on an approximate 30-year cycle. This year’s return comes from margins generated through electricity purchased 27 years ago; margins made during portions of 1987 and 1988 to those who were members during that time frame.

Because the electric utility industry is such a capital-intensive business, loans are the principle avenue utilized for building infrastructure (poles, wire, transformers, meters, etc.); rates are the other source, and it is through rates that member equity is built. Our current plan calls for 35 percent of capital investments to come from rates and 65 percent to be borrowed. The margins come from what is left after we cover all the expenses. Of the bill you pay each month approximately 65 percent is used to purchase power from our generation and transmission cooperative, PowerSouth Energy Cooperative, and the remainder to operate and maintain the facilities needed to deliver that power to you, with a small portion for margins.

The amount of margins that make capital credits is allocated to your account annually and becomes your portion of ownership, or equity, in the co-op. Currently, the members own nearly 40 percent of CAEC’s assets. The payments made from the capital credits account are based on your usage as compared to all other members’ usage for that year. Since 1994, your trustees have authorized the return of nearly \$11 million in retired patronage. This year, an additional \$1.1 million has been approved to be returned.

Being a member has many benefits including capital credits, so whether you receive a capital credits check this year, sometime in the future, or should you find your name listed in the middle of this magazine for an unclaimed capital credits check, the return of capital credits is co-op principle number three in action and yet another unique advantage of being a CAEC member.


Tom Stackhouse
CAEC President/CEO

CAEC Products and Services

CAEC offers many products and services to help you save money by taking control of your energy use. Listed below are some of the programs and services we offer for your convenience. Visit caec.coop or call (800) 545-5735 for more information.

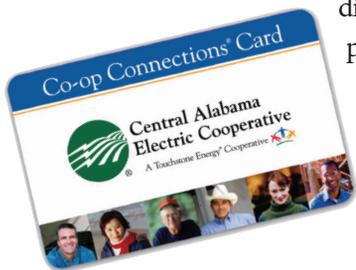
Heat Pump Rebate Program

CAEC offers rebates on high efficiency air-to-air heat pumps, dual fuel systems and geothermal units for both standard and manufactured homes. The minimum SEER rating allowed is 15 on standard homes. or if a manufactured home is switching from a furnace to a heat pump, a 13 SEER rating will be allowed.

Co-op Connections Card

From prescriptions to hotel reservations, start saving now. The Co-op Connections Card allows you to take advantage of discounts offered on all types of services and products from participating local and national businesses. An updated list with new businesses can be found in next month's *Alabama Living* magazine or visit our website caec.coop for the most current list.

Your card also provides a valuable prescription drug discount at participating pharmacies. In addition to the prescription drug discount, the card has more benefits from Healthy Savings Discounts, which offers savings on dental, vision, chiropractic, hearing, lab work and imaging visits. To find a provider near you who honors these discounts, visit www.connections.coop and click on the Healthy Savings tab.



For more information on these programs, call (800) 545-5735, extension 2118 or visit our website caec.coop

Water Heater Rebate Program

CAEC offers rebates for water heaters. Purchase your new water heater from any retailer and receive a rebate for meeting the following criteria:

- Only electric water heaters (cannot be tankless)
- Minimum energy factor of .92
- Participation in CAEC's Peak Shaving Program

Water heaters will be inspected to verify the following:

- Installation at member's address
- Manufacturer's Information: Name, model and serial #
- Proof of purchase: Copy of receipt, store name and spec information

Rebates are available in the following amounts:

- Under 80 gal: up to \$235
- 80 gal or larger: up to \$375

Peak Shaving Program

Our wholesale power costs are determined by our members' highest, or peak, electricity usage for a high usage day and those costs can affect your rates for the whole year if that usage is extreme. But there is something you can do through CAEC's Peak Shaving Program. This effort targets electric water heaters, which can use approximately 18 percent of your home's annual energy.

By participating in this program you also qualify for an electric water heater rebate; details are listed above in the Heater Rebate Program section.



Renewable Energy Sources

You might be using renewable energy today without even knowing it. Every time you hang your clothes outside on a clothesline to dry or fly a kite on the beach, you are taking advantage of renewable energy sources - the sun and wind. When you sit by a campfire or fireplace, you're enjoying biomass energy in action. And when you see pictures of hot lava from a volcano, you're looking at geothermal energy.

Because of modern technologies, new sources of energy are being used every day. Renewable energy is also called "clean" or "green" energy because it has little to no emissions and can be replenished in a short period of time. The four renewable sources used most often are wind, solar photovoltaics, geothermal and biomass. Hydropower is also a renewable resource and was highlighted in the October issue of *Alabama Living*.

Renewable Energy Resources in the Southeast

The development of renewables in CAEC's service area, including wind, solar, geothermal and biomass, is considered economically unfeasible when compared with more traditional options. Nonetheless, let's look at the generation process of these natural fuel resources.

Wind

Wind machines (also called wind turbines) use blades to collect the wind's kinetic energy. When the wind blows, it flows over the blades creating lift, like the effect on airplane wings, which causes them to turn. The blades are connected to a drive shaft that turns an electric generator.

The cost of the commercial wind turbines varies from \$1 to \$2 million per mega watt (MW) of capacity installed. Projects can take over seven years to develop with 2.5 years in the planning phase. A single 1 MW turbine operating at a 45 percent production rate will generate about 3.9 million kilowatts (KW) of electricity in a year, meeting the needs of about 500 households annually.



However, the average wind turbine turns at approximately 25 percent.

In the U.S. there are approximately 85,000 people employed in the wind industry.

The major challenge of using wind as a source of power is that the wind is intermittent and does

not always blow when electricity is needed. Wind energy cannot be stored and not all winds can be harnessed to meet the timing of electricity demands. The viability of a wind project in our location is further hampered by higher construction costs for offshore installations and the risk of wind farm destruction from hurricane-force winds sometimes encountered on our southern coasts.

Many potential wind farms where wind energy can be produced on a large scale need to be in locations far removed from the populated areas where the energy is needed. This puts wind energy at a major disadvantage in terms of costs of new substations and transmission lines.

Solar

Solar energy is converted to electricity by utilizing Photovoltaic (PV) devices, or "solar cells." The solar energy (heat) boils water; the steam drives a turbine; the turbine turns an ordinary generator, which then generates electric power. A 10 gigawatt (GW) solar power plant would cost about \$100 billion to build and a 500 megawatt (MW) plant, which could supply power to 100,000 households, would require 4,000 acres whereas a 500 MW natural gas plant would require 40 acres and a coal plant 300 acres. In our area, solar would provide about 15 percent of the needed energy in a 24-hour period, requiring another fuel source during the remaining time.



Geothermal

Power plants produce geothermal energy by utilizing the earth's dry steam or hot water accessed by digging wells. Either the dry steam or hot water is brought to the surface through pipes and processed into electricity in the power plant. Since geothermal plants use smaller land areas, the cost of land is usually less expensive than other power plants.

Geothermal is a baseload resource, available 24

hours per day, every day of the year. It is independent of weather conditions and has no associated fuel costs.

Drilling geothermal reservoirs and finding them, however, can

be an expensive task. The initial cost for the field and power plant is around \$2,500 per installed kW in the U.S., and even as high as \$3,000 to \$5,000 for a small, less than 1 MW power plant. The drilling of each observation hole can vary greatly depending on geological and other conditions. Geothermal is very site specific and along with the heat from the earth, toxic chemicals can also be dispersed in the process.

The United States generates an average of 15 billion kilowatt hours (kWh) of geothermal power per year and the plants are concentrated primarily in the western part of the country.

Biomass

Biomass energy includes landfill methane gas, wood waste, farm by-products and ethanol. The majority of biomass electricity is generated using a steam cycle. In this process, biomass is burned in a boiler to make steam. The steam then turns a turbine, which is connected to a generator that produces electricity. Of these resources, landfill methane gas has the highest potential for providing renewable electricity genera-

tion in the Southeast. To release the methane, gas is collected from decomposing waste by a series of wells strategically placed throughout the landfill. The wells are connected by a series of pipes leading to larger pipes that deliver the gas to a plant that generates electricity from renewable fuels. The entire piping system is under a vacuum created by blowers at the facility, causing landfill gas to flow from the wells. Once blowers deliver the gas to the plant, internal combustion engines use the gas as fuel and spin generators to produce electricity.

Converting landfill gas (LFG) to electricity reduces emissions of methane, a greenhouse gas 23 times more potent than carbon dioxide.

As of this past July, approximately 636 LFG energy projects were operational in the U.S., (80 are with electric co-ops), generating almost 16 billion kilowatt-hours of electricity in 2013. In Alabama, there are five operational projects: Baldwin, Jackson, Montgomery, Morgan and St. Clair.

CAEC currently offers its members the opportunity to utilize this renewable alternative with the Green Power Choice program, a partnership between PowerSouth (our generation and transmission co-op) and Waste Management, (visit www.greenpowerchoice.coop for more information). With this project, electricity is generated from the methane gas produced at the Springhill Regional Landfill in Campbellton, Fla. Buying two blocks of green power per month for a year is equal to recycling 480 pounds of aluminum (15,322 cans) or recycling 1,766 pounds of newspaper. Blocks consist of 100 kilowatt hours (kWh) of electricity and can be included on the power bill for \$2 per block.



A new energy future will be powered by multiple energy sources. And while renewables will play a key role in our energy future, they cannot meet the growing demand for electricity alone. A secure and reliable energy future must include a blend of advanced clean coal, nuclear, natural gas and renewable generation sources.



Neighbors Helping Neighbors

With fall comes cooler temperatures—which is a welcomed relief after the hot, humid Alabama summer. But for many of our friends and neighbors, the change in temperature also means the cold of winter is quickly approaching, and they may have to make some major decisions regarding heating their homes or purchasing food and medications.

For this very reason, Project SHARE (Service to Help Alabamians with Relief on Energy) was formed in 1982. Designed to meet the energy needs of qualified, low-income elderly or dis-

abled individuals facing financial and/or medical situations, the program is a joint effort between the American Red Cross and energy providers, such as CAEC. In addition to helping provide emergency energy assistance during peak winter and summer months, the program also provides energy conservation and sensible budgeting education.

To qualify for assistance, the family income must be within certain guidelines depending on the size of the household. In addition, the head of the household must be 62 years of age or older, or receive a disability check.

For as little as \$1 a month, CAEC members can make a difference in someone's life through Project SHARE. Participation is easy. You can pledge \$1, \$2, \$5 or any other whole-dollar amount you choose each month, and it will be automatically added to your utility bill. While the donation may seem small, our members have collectively do-

nated more than \$40,000 over the last five years. If you want to help your neighbors this winter and throughout the year, simply check the Project Share box on your bill; fill out and return the form on page 42 of this magazine; visit our Web site, caec.coop, and click on the Project SHARE link under Community Enrichment or just give us a call at (800) 545-5735.

Those in need will be grateful for your willingness to SHARE. ■

See page 42 to donate today!

CAEC members have donated more than \$40,000 to Project SHARE in the last five years.



CAEC offices will be closed Thursday, Nov. 27 & Friday, Nov. 28 for the Thanksgiving Day Holiday

What does \$1 mean in today's world?



A dollar means not having to choose between purchasing medication or having hot water.

A dollar means not having to choose between buying food or lighting your home.

For as little as \$1 a month CAEC members can support the Project SHARE program and help those in need from having to make these tough choices.

Help elderly and disabled Alabamians power their homes by saying yes to Project SHARE.

To participate in Project SHARE and become a part of the network of neighbors helping neighbors, you can contribute \$1, \$2, \$5 or any other whole-dollar amount you choose. The amount you select will be automatically added to your utility bill each month.

Call (800) 545-5735 for more information, fill out the Project SHARE information on your next bill or complete the form below and return it to CAEC.

Mail form to: Central Alabama Electric Cooperative, P.O. Box 681570, Prattville, AL 36068



Yes, I agree to help those in need through Project SHARE.

Name: _____ Phone #(s): _____

Address: _____ City: _____ St: _____ Zip: _____

Account #: _____

Email: _____

Amount I wish to donate to Project SHARE each month: ___\$1 ___\$2 ___\$5 ___ Other (please specify)

Signature: _____



Central Alabama
Electric Cooperative

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Short Circuits: Old Wiring Could Be Hazardous



*Darren Maddox
Manager of
Safety & Training*

Residential electrical wiring has changed during the 20th century as new appliances have appeared on the scene and electricity has evolved from being a luxury to a necessity. More appliances at home have led to safety improvements and an increased need in the number of room outlets, leaving older home wiring to play catch-up. Although many older home electrical systems have

been upgraded over the years, safety shortcomings may still exist. Since a third of American homes were built more than 50 years ago, home buyers and those living in older homes should be aware of how wiring has changed during the last century.

Electric capacity is a major concern with older wiring systems. Homeowners in the 1930s didn't use a lot of electrical appliances, except for a refrigerator, a few lights and a radio. An explosion of appliance purchases followed in the late 1940s and early '50s. But the arrival of air conditioning during the 1960s soon rendered

Each year, household wiring causes an estimated average of 32,000 home fires.

many mid-century home electrical systems obsolete. More recently, homes built as little as 20 years ago might be insufficient for handling

the added requirements that come with entertainment systems and personal computers.

Each year, household wiring causes an estimated average of 32,000 home fires and results in 950 injuries, 220 deaths and nearly \$674 million in property damage, according to the National Fire Protection Association. To avoid such hazards, consumers should understand the limits of home wiring systems. Often, this depends on when a home was built and whether the electrical system has been upgraded. In other cases, though, telltale signs may indicate a problem.

Anytime you receive a shock from an electrical appliance, outlet or wall switch in your home, it's a warning that you should talk with a qualified electrician. If a fuse blows or a circuit breaker trips right after you replace or

reset it, you have trouble somewhere. Flickering or dimming lights could signal a dangerous issue such as loose connections, overloaded circuits, improper wiring or arcing and sparking inside walls and should be examined by a licensed electrician immediately.

Heat is another telltale sign that means too much electrical current is being drawn through outlets. If your receptacles or plugs are hot to the touch — you can't keep your hand on them for more than five seconds — you may have an overload. When too much current gets drawn, wires heat up, baking and eventually weakening the insulation. Wires with damaged, decayed or brittle insulation can lead to shocks and fires.

Another issue associated with older home wiring systems is the number of receptacles in each room. Today's electrical code requires outlets be placed every 12 feet of running wall space, about one per wall in the average 10-by-12-foot room. Houses built before 1956 were required to have outlets placed every 20 feet, while homes built before 1935 weren't required to have any wall outlets at all.

The lack of outlets may lead people to rely on extension cords to meet their power needs, but extension cords are meant for temporary use only and should not be a substitute for permanent wiring. In addition, many wiring systems installed in the 1950s and earlier used non-metallic wiring, which lacked a ground wire. Homes from this era offer only two-pronged outlets, unsuitable for many modern conveniences. Simply replacing two-pronged receptacles with three-pronged receptacles violates the National Electrical Safety Code if no ground path exists. Additional outlets can be placed in your home by a qualified electrician who can also check your home's wiring to make sure it's safe, grounded and doesn't pose a danger to you and your home.

In some cases, older homes may feature newer wiring systems, but if you have any concerns about your home's wiring or if you're thinking of buying a home, have someone certified in electrical work inspect the system to be on the safe side. ■

