

Engineering Future Leaders



At our recent reception honoring this year's Bright Ideas Grant recipients, I was reminded of the many people who work in the teaching profession providing today's youth with the best education possible. Their creativity and drive is a true inspiration.

As we've watched our three children—Isaac, Becca and Tori—grow, my wife Amy and I know the importance of a solid foundation for building their future. That's why we feel a strong connection to and why we support educational and youth programs. From education to sports to church activities or Scouts, they all teach important lessons that help children expand their knowledge.

Your co-op also knows the importance of developing our leaders of tomorrow and offers several programs for that reason. This year the Bright Ideas Grant program (featured on the next page) funded 21 school projects that will benefit more than 8,800 children in our service area. The Youth Tour program will send seven high school juniors to Montgomery this month to learn about the political process, their state's history and leadership and then four of those students will attend the Washington Youth Tour in Washington, D.C. Our scholarship program will award two \$500 scholarships to two CAEC high school seniors to help further their educational journeys.

Another program we sponsor is the Explorers

Post Program. In its tenth year, this is a joint project between the Boy Scouts of America and CAEC to help students who have shown an interest in engineering learn more about this important field through hands-on activities. There are also many careers explored through this program at other businesses in our communities.

Between October and May of each year, CAEC's engineering staff conducts monthly meetings at the co-op with local high school students in grades 9-12. The students are selected by a survey organized by the Boy Scouts each spring to determine those with an interest in the profession.

At the Explorer meetings, students perform engineering experiments and exercises. They also take field trips to engineering events such as Auburn University's annual E-Day which highlights many aspects of this line of work.

As school system funding fluctuates from year to year, your cooperative will continue to do its part by helping develop the leaders of tomorrow through youth programs. I also urge you to support local children's activities in your community, whether through contributions of time or money. Together, we can all help the next generation of leaders by giving them the support and experiences they need today to make sound decisions in the future. ☞



Explorers conduct an experiment with a hydrogen powered fuel cell.

Tom Stackhouse, CAEC President and CEO

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Bright Ideas Grants Fund 21 School Projects

From outdoor classrooms to programmed robots using calculators, CAEC assisted teachers, students and area schools by awarding \$16,000 in grants to benefit more than 8,800 students in central Alabama, through the Bright Ideas Grant Program.

CAEC's Board of Trustees presented grant monies during a January ceremony and reception held at the cooperative's headquarters in Prattville. Grant proposals had been evaluated by a panel of judges from local community associations. A few of the winning projects included a Circuit Training Course, Writing Commercials, Community Recycling and Gardens, and Mobile Math to name a few.

The Bright Ideas Grant Program was introduced by CAEC in 1998 with the goal of supporting innovative, interesting and effective initiatives that are not usually covered by traditional school funding. Grants are awarded to individuals or teams in public, private and home schools within CAEC's service area.

"Many educators are finding it hard to cover the costs of basic supplies needed for their classrooms let alone imaginative projects that can have a lasting impact on our children," said CAEC President and CEO Tom Stackhouse.

Twelve years after its inception, funding from Bright Ideas grants has proven to be extremely valuable as basic funding has been cut. To date, CAEC has awarded approximately \$176,000 to local schools through the program. More than 75,000 students in all grade levels and subject areas have benefited from the Bright Ideas grants.

CAEC Trustees are photographed with:



Autauga County Recipients



Chilton County Recipients



Elmore County Recipients

A full listing of this year's recipients along with more information on the program is available on CAEC's Web site, www.caec.coop. Application information for the 2010-2011 grants will appear later this year in the September issue of *Alabama Living* magazine. ☞

Scholarship Application Deadline is **March 12**



College scholarship applications are available to high school seniors graduating this spring, but the deadline is quickly approaching. Applicants must be dependents of CAEC members.

Applications are available at any of our service centers or you can call (334) 351-2213 to have an application mailed to you or visit www.caec.coop to download the application. ☞

Manufacturing Energy Savings

A look at one CAEC couple who, by investing on the front end when buying a manufactured home, are now reaping energy savings

When the Green family decided to purchase a new home in 2007, they looked at many options, from building a house to purchasing a manufactured home. The recently retired couple had a set budget and after investigating both options, decided a manufactured home better fit their needs and their wallet.

But they didn't just purchase a home off the lot. After doing a lot of research and customizing their home with energy efficient upgrades, these CAEC members are living comfortably in a 1,860 square-foot manufactured home with average monthly energy costs of \$150* in 2009. How did they do it? They invested on the front end when they bought their home.

"We knew most manufactured homes aren't as energy efficient as they could be," said Mrs. Green. "When we decided to purchase one, we did our homework and discovered all of the available efficiency upgrades."

Working with their manufactured home dealer, the couple found a model that suited their needs. The three bedroom, two bath unit had the layout they wanted, and from there, they had their home custom built at the factory.

Their new home is equipped with non-standard features such as extra insulation in the walls, attic

and under the flooring, double-paned windows with ultra-violet (UV) film, sheetrock instead of paneled walls, soffits to ventilate the attic and insulated siding instead of basic vinyl siding.

"The manufacturer was easy to work with, and when we requested upgrades, they helped us. You can even request to see your home being built," said Mr. Green. "If you're patient and know

what you want and are willing to wait a little longer for it, you'll be amazed at the money you can save on your utility bills with an efficiently built home."

The Greens also added a few upgrades of their own that were not available at the dealer. They had brick installed as their underpinning, complete with adjustable vents to help control the air underneath their home. They also hired

a licensed heating and air contractor to install their heating and cooling unit.

"We knew we wanted an electric heat pump, which we had learned was the most efficient way to heat and cool our home," said Mrs. Green. "I must say that having a contractor install the proper-sized unit for our home was the smartest thing we ever did. The units that usually come with homes are not as efficient as heat pumps."

The Greens also had a programmable thermostat installed with their unit, something that does not come with a home off the lot. "We keep the thermostat set on 68° in the winter and 72° in the summer, comfortably giving us the temperature we want."

When you combine all of these upgrades with efficient ENERGY STAR appliances, you can see



Mr. Green shows the reverse side of the insulated siding used on his home.

"It was an up-front cost, but it was still less expensive than building a traditional house and it keeps our power bills consistent."

where the Green family is saving on their power bill. While it cost them an extra \$10,000 for the upgrades when they purchased their home in April of 2008, they calculate the return on this investment within the next two years.

“It was an up-front cost, but it was still less expensive than building a traditional house and it keeps our power bills consistent, something that’s important when you’re on a fixed retirement income like we are,” Mrs. Green said. “In January this year, when it was so cold, but our energy bills were below \$190*. It’s a great feeling to know our energy usage will remain pretty much level, even with dramatic weather events.”

“If you’re patient and know what you want and are willing to wait a little longer for it, you’ll be amazed at the money you can save on your utility bills with an efficiently built home.”



The Green’s home has all ENERGY STAR appliances

If you’re not able to spend the amount of money on upgrades that the Green family did, there are still many programs available to make your new manufactured home more efficient—such as the ENERGY STAR qualified manufactured home.

“ENERGY STAR is more than just appliances,” said Gwen Coch, ENERGY STAR Program Coordinator for the Systems Building Research Alliance

(formerly the Manufactured Home Research Alliance). “An ENERGY STAR manufactured home is more about the construction materials that go into the home, things you typically can’t see.”

An ENERGY STAR qualified home is significantly more energy efficient in its heating, cooling and water heating than a comparable standard code home. This increased level of energy efficiency can be met using standard technologies and manufacturing practices by successfully integrating three key home components. An ENERGY STAR manufactured home includes increased insulation, efficient windows and a heat pump as the unit’s heating and cooling system.



The outdoor heat pump unit was a major investment, but one that is quickly paying off, especially when combined with a brick foundation and vents

“Some manufacturers have ENERGY STAR rated homes on their lots, but any model home can be converted to meet the requirements for an average of \$1,000 to \$3,000,” Coch said. “The home will have an ENERGY STAR certificate showing that it meets the standards for an efficient home, and while ENERGY STAR appliances are a great way to save energy, they aren’t the indicator of a home meeting those standards.”

If you’re looking to purchase a new manufactured home, investing on the front end can save you money on your energy bills for years to come. While it may take a little longer than selecting a home off the lot and it may cost a little extra, it is an investment in one of the largest purchases you may ever make.

“Do your homework, don’t be in a hurry, shop and compare and know what you want,” said Mrs. Green. “If you do that, you’ll have a sound investment in a comfortable home that will last for many years.”

*represents electric and gas bills

CAEC SPOTLIGHT ON: **Engineers**

We continue our series on the many people and jobs it takes to operate your cooperative with a look at those who plan for our future energy needs and how to deliver this power efficiently to your home.

Each day, as you drive around your community, you pass one of the greatest examples of human engineering—the electric power grid.

The wooden poles you see on the roadside may not be striking, but when you consider their role in delivering electricity to our homes so we can enjoy everyday conveniences, their impact on our lives is great.

Just as impressive are the planning and placement of power poles, along with transformers and substations. In our co-op's service territory we have 100,000 power poles, 32,000 distribution transformers, 5,000 miles of distribution line and 22 substations. The placement of these items is key in delivering reliable power to you and your family, and it is CAEC's engineers who are responsible for overseeing the growth and development of this infrastructure.

Planning

CAEC engineers utilize long range planning (20 year plans) and short term planning (four year) referred to as work plans. When the plans are updated, they begin by conducting a year-long study to look at potential future energy needs based on calculations of existing conditions regarding population and energy demands as well as past growth trends. Forecasts of short- and long-term power needs are then made using a computer model of the whole system.

"Once our forecast is combined with power quality studies, we know which areas need to be investigated for power availability and reliability," said Manager of Engineering Aaron Ismail. "This helps to ensure the proper equipment, such as transformers, line and poles, are available to handle and forecast demand."

Construction

If the forecasted power needs occur and new facilities, such as a substation and lines, are need-


ed, the engineers direct the process. In citing a substation, certain criteria must be met.

"We want to find a location that is close to the area in need but also in proximity to distribution and transmission lines," said Electrical Engineer Erick Terry. "But the land itself must also have particular topographic qualities sufficient for a substation—flat, dry and easy accessibility are all important features of a location."

Once land is acquired, engineers work with our power generation and transmission provider, PowerSouth, in the design of the substation and transmission lines needed. Before anything is built, approval from various government agencies are needed to ensure the new facilities will not interfere with any environmental, wildlife or historical areas.

When the design plans are finalized, the engineers oversee the construction of the substation and act as general contractors throughout its construction. This process of approval and construction typically takes about two years.

In conjunction with planning and overseeing the construction of CAEC's distribution system, the engineers maintain it, while monitoring and correcting any power quality or technical issues such as low voltage. They also evaluate new equipment for the field by conducting cost-benefit analyses, which determine how any upgrades might best serve the co-op and its members.

Continual analysis and careful planning are essential steps in proper system maintenance and development, and at CAEC our engineers make sure we are able to meet current and future energy needs. This planning is imperative in delivering quality, reliable power to homes and businesses throughout our service area. So, the next time you see a substation or power pole, think of the years of planning it took to place it there and the indispensable service it provides. 



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

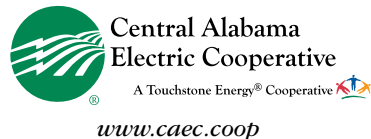
Yes, I agree to help those in need through Project SHARE.

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: _____



Recipe for *Efficiency* from CAEC

Insulation

Have you looked in your attic lately? Insulation in your attic is an essential component to help keep your home warm in the winter and cool in the summer. While your attic temperature is still comfortable, it's the perfect time of year to re-apply attic insulation before the summer heat arrives.

There are numerous types of insulation to choose from, and each has a different method of installation. The example below uses cellulose—an easy “do it yourself” process.

Ingredients (supplies):

Cellulose Insulation

Utensils (tools):

Insulation Blower Machine

Gloves

Goggles

Breathing Masks

Directions:

Purchase the cellulose insulation at your local hardware store where you should also be able to rent an insulation blower. The amount you need will depend on the square footage of your home and the thickness of the existing insulation. Make sure the thickness of your insulation (including any existing insulation) is between 10 and 12 inches, which should give you an R-value of 30.

You will need at least one person to assist you in applying the insulation.

Installing Cellulose Attic Insulation

1. Place the insulation and the blower machine outdoors. DO NOT operate the machine indoors.

2. Take the blower's tube up into the attic with you (through a window or door in the house). Make sure you are outfitted with gloves, goggles and a breathing mask.



3. Have the person (also outfitted with gloves, goggles and a breathing mask) stationed near the blower machine begin to feed it with the loose, cellulose insulation, one bale at a time. When ready, this person will also control the flow of the insulation by using an on/off switch.



4. In the attic, sweep the blower's tube in the locations where you desire the insulation. When finished, have the person stationed with the blower turn off the machine.



On average, an 1,800 square foot house will take approximately four hours to complete at a cost of \$500. Prices and times may vary due to retailers, square footage and depth of existing insulation. On a house with little or no pre-existing insulation, adding more—and doing it yourself—can help make your home more comfortable and provide some cost savings to your power bill.