

Co-op innovation shines with renewable energy

Over their 75-year histories, electric co-ops have made a name for themselves as trailblazers and innovators. For starters, co-ops efficiently and affordably ran power lines to parts of rural America that big investor-owned utilities didn't see as profitable. Many experts consider rural electrification as the greatest engineering achievement of the 20th century.

In addition, electric co-ops began promoting energy efficiency decades ago, long before it became mainstream. And today co-ops are finding innovative ways to use renewable energy generation while keeping electricity affordable — no easy feat.

Government-mandated renewable portfolio standards require that more of the electricity being produced come from renewable sources, which are typically more expensive than traditional sources like coal- and natural gas-fired power plants. Laws already passed by 29 states and the District of Columbia require investor-owned utilities as well as some electric cooperatives (in 18 states) to add increasing amounts of “clean and green” electricity to their retail power supply mixes by a certain date.

To meet these requirements without breaking the bank, electric co-ops across the country are finding ways to make renewable sources of power work for their members.

More than 80 percent of our nation's 900-plus electric co-ops provide electricity produced by wind, solar, hydro, geothermal, biomass (like landfill gas, livestock waste, timber byproducts and crop residue) and other “green power” sources. All told, co-ops today receive 11 percent of their power requirements from renewable sources, compared to 9 percent for electric utilities as a whole.

Based in Velva, N.D., Verendrye Electric Cooperative has been installing solar-powered livestock water-pumping systems for the past 20 years. Thanks to recent grant money, the co-op has installed 120 of the units in the last three years alone. And here's the kicker: Running a power line to these remote

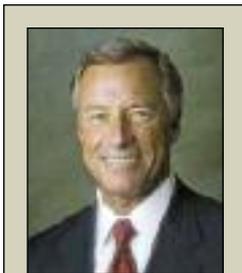
locations would cost \$20,000 per mile; the solar-powered units cost \$4,000. That's innovation in action.

In the mountain town of Rabun Gap, Ga., the Green Power Electric Membership Corporation, a partnership of 38 local co-ops, is purchasing power from a waste wood-fired biomass generator set up in an old Fruit of the Loom plant. It's a winning situation for everyone: The wood scraps go to good

use, the co-ops have green electricity to distribute and the community has had an uptick of 100 jobs as a result of the plant and the supply of wood that feeds it. More innovation at work.

In addition, co-ops across the country are banding together to deliver renewable energy to regions that may not have the best wind resources or the sunniest days. The National Renewables Cooperative Organization (NRCO) was formed in 2008 as a clearing house for renewable energy “credits.” Through NRCO, a co-op in the Southeast, for example, could buy wind power from a Midwest wind farm to satisfy a renewable portfolio standard law. That's a truly innovative partnership.

As renewable energy continues to develop across the nation, rest easy knowing that Cumberland Electric Membership Corporation and others are working together to achieve common goals and provide our members with safe, reliable, affordable electricity. As it has been for 75 years, that's the co-op way.



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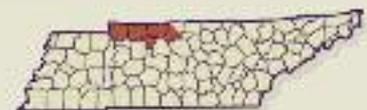
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Mission Statement

Cumberland Electric Membership Corporation is committed to providing dependable, affordable electric service through the expertise and dedication of competent leadership and a well-trained and responsive workforce.



Cumberland Electric Membership Corporation

Serving Cheatham, Montgomery, Robertson, Stewart and Sumner counties.



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May flood will be the story of the year in Tenn.

Some lost everything they had, some were merely inconvenienced, but everyone who saw it will remember the flood of May 2010 in Middle Tennessee.

Ashland City was particularly hard hit by the rains of May 1-2. When Cumberland Electric Membership Corporation's Ashland City substation flooded, electricity was knocked out until the power load could be switched to other substations.

When the town's largest employer, A.O. Smith Water Products Company, took on between 4 and 5 feet of water, production of water heaters was halted and about 1,200 employees feared a potentially lengthy period of unemployment and/or loss of income.

Fortunately, the company drained those fears before the water started to recede by announcing its workers would be paid and their jobs were safe.

"We knew we wanted to continue paying our employees," says Mark Petrarca, senior vice president of human resources and public affairs at A.O. Smith Corp. in Milwaukee. "We decided initially on one week. At the end of that first week, we said we would continue paying salaries and benefits for the first four weeks, regardless of what happens."

What happened was the company's employees were put to work cleaning conveyors, lubricating and rewiring machinery and putting in new motors. In less than two weeks, 900 to 1,000 hourly workers were back at work.

"It will take awhile to bring the plant back to where we need it to be," Petrarca says, "and we have no timetable for when we will be at 100 percent, but we're working on it as aggressively as we can. It's like a beehive in there — everybody's busy!"

It's encouraging to see an employer demonstrate such a high degree of responsibility for its employees in the face of extreme adversity, but Petrarca says the feeling is genuine.

"I think it speaks volumes as to who we are as a company," he says. "We want to do everything we can for our employees to minimize the pain of their loss. It really does bring a lump to your throat — the amount of pride these people have."

Flood pictures worth 1,000 words: (1) CEMC's Ashland City substation, (2) the A. O. Smith manufacturing plant, (3) CEMC employees donating relief supplies in Ashland City, (4) a Clarksville District crew using a fishing boat to repair a downed power line.



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Ballfield named in honor of CEMC employee David Alexander, longtime baseball enthusiast

A well-kept secret was sprung on David Alexander, a 28-year employee of Cumberland Electric Membership Corporation, on May 15. That's when Alexander learned that a baseball field in Gallatin formerly known as Legion Field at Municipal Park had been renamed by the Gallatin City Council as "David Alexander Field" in his honor.

The change was spearheaded in March by American Legion Post 17, for which Alexander, CEMC's engineering technician in Gallatin, has volunteered in multiple capacities for many years. Alexander actually started the American Legion Post 17 baseball program for boys aged 14-16 in 1983. He was the team's first coach, a position he held for eight seasons. He also served as the league's chairman for nine years and remains involved as a major booster to this day.

"David did not know of this until Saturday (the day of the surprise announcement and dedication ceremony)," said Connie Parker, Gallatin District customer account representative and one of about 150 people in attendance. "He thought it was just going to be a cookout and reunion for all the former American Legion players."

A letter to the city from the American Legion stated that Alexander "was very instrumental in getting the press box, concession stand and restrooms built at Municipal Park. He built the original batting cage and extended the field. He worked with Cumberland Electric and had light poles moved and poured the concrete needed."

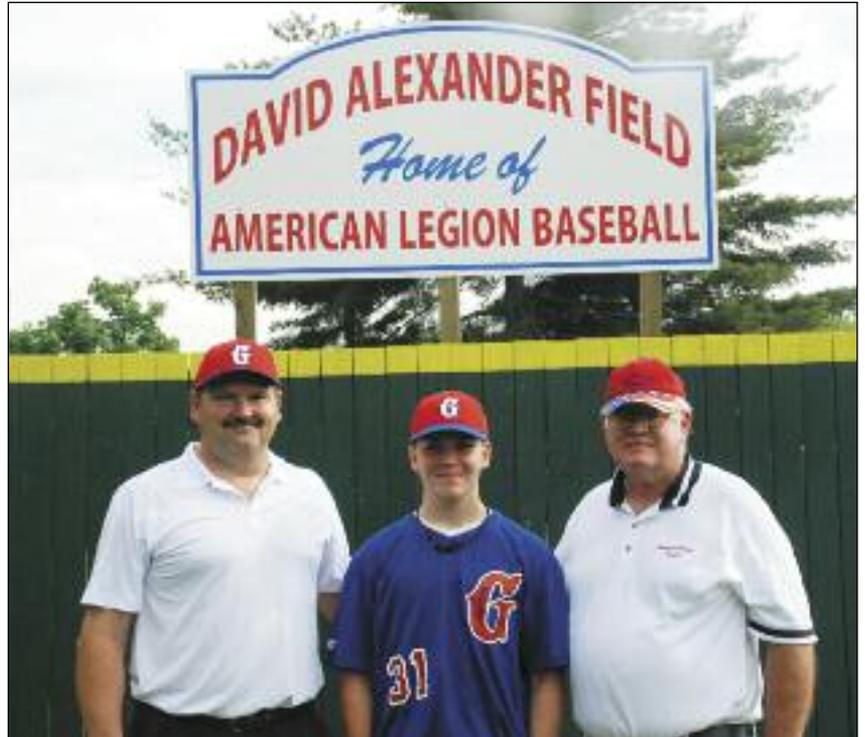
On April 13, the Gallatin City Council made it official by renaming the ballfield, which is also used by Gallatin High School's baseball team, in Alexander's honor. Many people helped keep the action a secret for the next month.

"It really hasn't sunk in yet," Alexander said a few days after the ceremony. "It's an honor, but it's hard to put words to it."

"A lot of people contributed to building up the ballfield, not just me, but I do have a lot of memories of a lot of hard work that took place there," he said.

Alexander says he plans to remain active helping out with American Legion baseball in some capacity as long as he can. At least part of the reason is because two more generations of Alexander men are following in his footsteps. His son, Donald Alexander, played for David on the first Post 17 team in 1983 and is currently in his first year coaching the 17-and-under team, and Donald's son, Garrett, plays on the team for his dad.

For David Alexander, that may be an even greater tribute than having a field named for him.



Three generations of the Alexander family are active in American Legion baseball in Gallatin. From left are Donald Alexander, Garrett Alexander and David Alexander, for whom the baseball field is named. The sign is erected on the left field wall.

Independence Day closing notice

The offices of Cumberland Electric Membership Corporation will be closed on Monday, July 5, in observance of Independence Day. However, crews will be on call in the event of any holiday weekend power outages.

To report an outage or other power emergency, please call CEMC's toll-free telephone number: 1-800-987-2362.

Have a safe and enjoyable holiday weekend!



Deadline looms for CEMC board candidates

If you are interested in becoming a member of Cumberland Electric Membership Corporation's board of directors, the first step is to submit a petition signed by at least 15 members.

The deadline for turning in your petition is July 20, which is 60 days before the 2010 CEMC Annual Membership Meeting to be held Sept. 18 at Portland High School in Portland.

An election will be held for the following director positions: Cheatham County, South Montgomery County and South Robertson County.

Anyone with a valid membership in good standing as of July 20 may vote in director elections. Anyone applying for membership after July 20 will not be eligible to vote in the 2010 director elections but may attend the meeting and register for prizes.

(CEMC Bylaws Article 3 — Section 3.05)



SUPER SPELLERS — CEMC congratulates the winners of Cheatham County's Fourth-Grade Spelling Bee. From left are McKenzie Binkley of West Cheatham Elementary, first place; Madison Nichols of Ashland City Elementary, second place; and Kaly Adams of Kingston Springs Elementary, third place.



MARVELOUS MATHEMATICIANS — Winners of Cheatham County's Sixth-Grade Math Contest are, from left, Jackie Richards of Harpeth Middle School, first place; Cameron Reid of Cheatham Middle School, second place; and Emma Aly of Harpeth Middle School, third place. Each winner received a certificate and cash from CEMC.

Y'all come to the 41st Anniversary Tennessee-Kentucky Threshermen's Association Threshing Show in Adams

Friday and Saturday, July 16 and 17

Sponsored in part by



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Lots to see and lots to do, your friends will be there — how 'bout you?



Biomass: an abundant renewable fuel

By Scott Gates, National Rural Electric Cooperative Association

“**B**iomass” consists of any biological material that can be burned as fuel to produce electricity, and it’s everywhere. A quick drive down a country road provides a virtual tour of this renewable energy resource: trees, grasses, crops, livestock waste and even landfill gas. Recent advances in technology have made it possible to use tried-and-true biomass in more efficient ways.

Today, the U.S. boasts almost 11,000 MW of biomass generating capacity, making it the third-largest source of renewable energy behind hydropower and wind. So it plays an important role in keeping your lights on every day.

How it works

The basic premise behind this power source is simple. Burning actual biomass feedstock or the gases produced by decomposition of organic material — in whatever form — creates steam, which then spins a turbine and generates electricity.

Given the wide variety of biomass resources available, questions on what to burn and in what manner can be answered in a number of ways:

- **Direct-fired systems:** This remains the most straight-forward, time-tested means of producing electricity with biomass. Quite simply, material (like wood “slash” from timbering operations) gets shoveled into a boiler to produce heat and steam. Residual heat from the process can be piped off to heat buildings or reused in other ways, increasing plant efficiencies.
- **Co-fired systems:** This method adds biomass to existing fossil fuel plants, mixing wood chips with coal, for example. In this way, fossil fuel plants can lower emissions while maintaining the same electrical output.



- **Gasification:** Slightly more complex, this process converts biomass to a gas through superheating. The resulting synthetic gas (syngas) can be burned in a conventional boiler or used as a substitute for natural gas.
- **Pyrolysis:** This techy term describes changing solid biomass into a different form. If biomass is superheated in an area void of oxygen, it will liquefy rather than catching fire. The resulting oil can be burned to generate electricity or used in making plastics, adhesives and other products.
- **Anaerobic digestion:** Instead of burning biomass as fuel, this method amounts to piling up waste and waiting. As the name implies, bacteria (anaerobes) literally digest molecules in waste — be it livestock manure or garbage — and produce methane as a byproduct. The gas is then captured and burned to make electricity. Leftover material, in many cases, can be used as compost.



The future of biomass

Biomass has come a long way from putting a log on a fire. Applications continue to develop, many of which involve converting biomass to other forms to supplement petroleum use.

New sources of electricity and fuel production are being researched every day, and soon waste such as corn stover (stalks, leaves and husks) and wheat straw will be added to the mix. Nonfood crops such as trees and grasses are also being researched for their energy-producing potential, especially in liquid form.

For more information on the future of biomass and current uses, visit the U.S. Department of Energy National Renewable Energy Lab at www.nrel.gov and search for “learn biomass.”

Sugarcane, left, is being studied as a possible biomass crop. One of its great advantages is a short rotation; plants regrow after each harvest, allowing multiple harvests without having to replant. Photograph courtesy of the U.S. Department of Agriculture.

Above, wood chips can be mixed with fossil fuels and burned to reduce emissions while maintaining the same output of electricity. Photograph courtesy of Pacific Northwest National Laboratory.