



GM'S REPORT

RESIDENTIAL BATTERY STORAGE IS THE ENERGY TREND TO WATCH



Dan McNaul
General Manager

In this case, “battery storage” does not refer to the drawer where you put the extra AA batteries for your flashlight. Instead, it refers to an emerging energy trend. Batteries and battery storage are evolving much like the way LED bulbs have transformed how we light our homes.

What's driving battery storage?

Solar costs are dropping, and community solar options are increasing in popularity. In 2017, wind and solar electricity generation set a record by exceeding 10 percent of U.S. energy generation, according to the Energy Information Agency (EIA). News in the automotive world was dominated by announcements of major automakers stepping up production of electric vehicles (EVs) or, in some cases, phasing out gas-powered engines altogether. As EVs gain popularity, charging stations are popping up in places of business and in other public spaces.

So, what does all this mean? Consumers are clearly looking for more renewable energy options. But intermittent power from wind and solar sources creates a need for energy storage. This

is where batteries come into play. An increase in research and development in this energy sector is being driven by EVs and renewable energy trends. While the current focus is primarily on commercial applications, the impact on

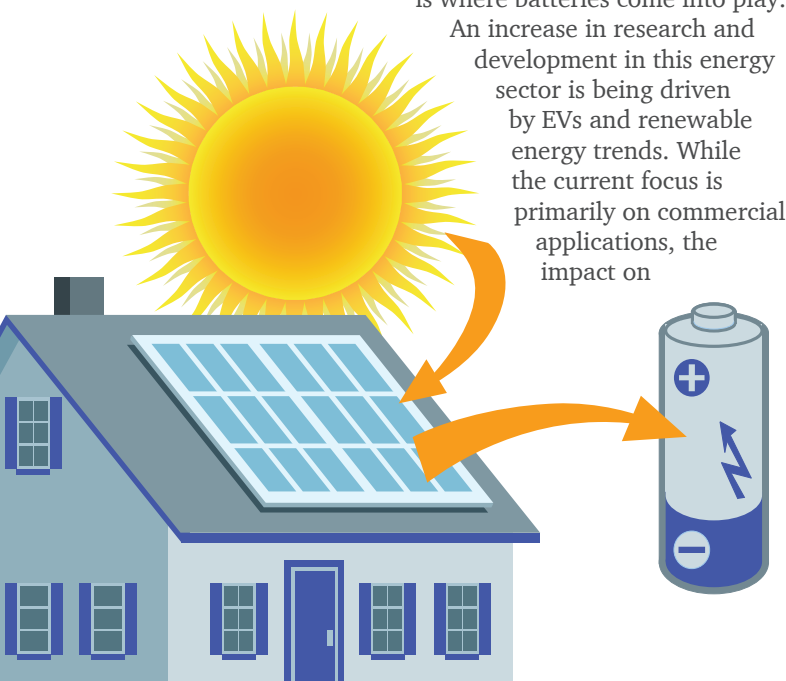
residential use will eventually follow. We can see improvements in the energy efficiency of lithium-ion batteries. For example, phone, computer, and other types of batteries/charging stations are holding their charge longer and powering more energy-intensive devices.

Does better battery storage mean you can go “off the grid” now?

While consumers using rooftop solar or other renewable energy sources have the most to gain, it's not as easy as you would think to go off the grid completely. Powering the average consumer's home, including HVAC systems, lights, appliances, and big-screen TVs, requires a tremendous amount of energy. Significant weather variations are another complicating factor. Going off the grid would require a solar array coupled with battery storage that is properly sized based on your energy consumption. Because battery storage technology is evolving and battery banks are not widely available, it is still not yet cost-effective for the average consumer to purchase.

However, the energy advisors at Firelands Electric Co-op are knowledgeable when it comes to energy efficiency and energy choices. Talk to us about your options, like home energy audits and other programs that can help you save energy and money. If you decide to purchase an EV, let us know; your current electric service was designed and sized to meet consumers' demands when the power lines were originally established and connected. We can also tell you about ideal charging times, like during off-peak hours, which helps conserve energy.

As our energy needs evolve, look to Firelands Electric Co-op for information about energy trends and how to save energy.





IN THE COMMUNITY

BY TRACY GIBB

CREATIVE CALLING

A native of southern Huron County, Angie Hunter knows firsthand that opportunities to study the arts can be scarce in rural areas. Local schools offer excellent programs in music and visual art, but like many educational systems, they are sometimes limited in manpower and resources. Vivace Arts

Academy, a fledgling program spearheaded by Hunter and The Ripley Church in Greenwich, is trying to fill that gap.

Hunter, a professional trombone and euphonium player, long dreamed of bringing more arts education to her rural hometown. After teaching music in Germany for

more than two decades, she returned to Ohio and began working with The Ripley Church to form the nonprofit Vivace Arts, Inc. The group's mission is simple — to enrich the artistic experiences for students of all ages in a Christian environment. "From the beginning, our vision was to be a blessing to both the church and the community," Hunter says.

In the fall of 2016, Vivace Arts started offering classes to members of the community. Children and adults can now take advantage of weekly lessons in music and art at

The Ripley Church. Instruction is available in piano, voice, guitar, percussion, woodwinds, brass instruments, and all art mediums,

including watercolor and charcoal drawing. Families can also participate in Kids on the Move, a music and movement class designed for preschoolers. In addition, the public can enjoy students' work during Finale, Vivace's annual program held every May.

Lessons are scheduled according to both student and teacher availability, and cost just \$20 for a 45-minute session. Discounts are available if more than one family member registers for lessons, and a limited number of scholarships are available. "We don't want anyone to not participate because of cost," Hunter says.

As a high school student, Hunter took advantage of every musical opportunity her alma mater offered. Now, with the help of Vivace Arts, she is working with several area schools to support their current programs and offer students additional resources for artistic growth. "We want to invest in the people of the community and help them try something new," Hunter says.

The Ripley Church is located at 4130 Edwards Road, Greenwich. To learn more about Vivace Arts, visit www.vivacearts.org or search for them on Facebook. Contact Vivace Arts by calling 1-844-4VIVACE or by e-mailing vivace@vivacearts.org.

Places & Faces is a monthly feature showcasing people, businesses, and organizations located throughout the Firelands Electric Cooperative service territory.



**Places
& Faces**
of Firelands Electric

At Vivace Arts, instructors like Angie Hunter, at right, teach lessons in music and art to students of all ages and skill levels. (Photos courtesy of Vivace Arts)





CO-OP NEWS

CO-OP MOURNS LOSS OF LONGTIME TRUSTEE

Firelands Electric District 2 Trustee Lowell Kreager passed away on Dec. 5, following a short illness.

Kreager had served on the cooperative's board of trustees for more than 31 years. Appointed to an open seat on the board in 1986, he was selected as vice president in 1999.

In 2016, Kreager successfully completed the Director Gold credential offered through the National Rural Electric Cooperative Association (NRECA). This program recognizes board members who have earned their Credentialed Cooperative Director and Board Leadership certificates, and who are committed to continuing their education throughout their service at the cooperative.

Kreager was a strong advocate for Firelands Electric Cooperative and the members of District 2. He always believed in the importance of a "member-first" focus, and that co-ops needed a presence at national and local levels to meet members' needs.

"Kreager always valued his relationships with legislators and looked after the best interests of our

rural members," says former Firelands Electric's General Manager April Bordas.

A retired vocational agriculture teacher with South Central Local Schools, Kreager earned his bachelor's degree in education and master's in ag economics from The Ohio State University. Kreager also worked for the United States Department of Agriculture (USDA) Statistics Service and the Ohio Seed Improvement Association. He lived in the rural Greenwich area and was an antique tractor enthusiast who enjoyed attending restored farm equipment shows.

Kreager always enjoyed spending time with family, including his three grown children and six grandchildren living in Ohio and Maryland. He was preceded in death by his wife, Beth, in September 2015.

"Our thoughts and prayers are with the family and friends of Lowell, and we express our deepest sympathy," Bordas says. "Everyone who works with Firelands Electric is a member of the cooperative family, and we are all saddened by this loss."



Lowell Kreager

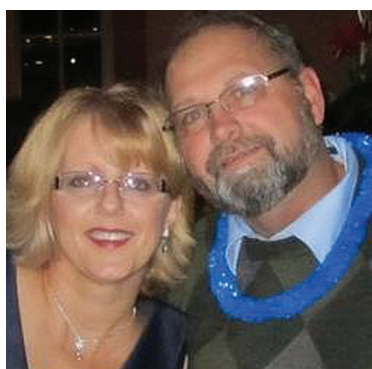


During November and December, Firelands Electric Co-op members, employees, and trustees collected donations for USO of Northern Ohio's Step Up for Soldiers annual campaign. Items such as snacks, canned goods, and health and wellness products were collected. Radio stations WLKR and K96 worked with the USO to distribute the donations, along with others collected throughout the area, to American soldiers stationed abroad and those returning home from deployment. Pictured, left to right, are Firelands employees Tracy Gibb, Lisa Wahl, Shelley Magyar, Stephanie Loescher, and Andrea Gravenhorst.



EMPLOYEE NEWS

DIRECTOR OF ELECTRIC OPERATIONS DENNY MARUGG ANNOUNCES HIS RETIREMENT



Denny Marugg and his wife, Karen, plan to spend more time with family and friends after his retirement.

Firelands Electric Cooperative Director of Electric Operations Denny Marugg has announced he will retire March 2. Marugg joined Firelands Electric in 1989 as a journeyman lineman after working with Vaughn Industries in Carey for several years. He was promoted to Firelands Electric's director of electric operations in 1998, where he continues to be responsible for managing the rebuild projects of the

cooperative's distribution system, ensuring safe and reliable power to Firelands' more than 9,130 electric member-consumers.

As director of electric operations, Marugg is responsible for operation activities, overseeing work plans, and managing ongoing and future line rebuild projects to modernize the cooperative's systems. These projects are necessary to accommodate the increasing power loads seen over the years, and relocating lines closer to roadways enables more efficient maintenance and repairs.

"I am very proud of the work Firelands Electric has accomplished over the years," Marugg said. "Our line crews and contractors work very hard to maintain and upgrade a distribution system that will provide reliable service to Firelands Electric's members for many years to come."

Looking back at his nearly 29 years with the cooperative, Marugg said his largest project was the rebuild funded by the U.S. Federal Emergency Management Agency (FEMA) after the severe

ice storm in 2005. "This was the largest major construction project in Firelands Electric's history," Marugg said.

The cooperative's upgrade of its Ashland Substation in 2004 was another involved project that required a lot of groundwork. Completion of the cooperative's Willard Chase Substation and double-feeder lines in 2013 was also a lengthy endeavor that entailed nearly a decade of planning.

"As a team, everyone has worked very hard to improve the reliability of the cooperative's distribution system," said Marugg. "I am proud of our accomplishments and have been blessed to work alongside many dedicated and hardworking co-op employees. Firelands Electric is a great organization because of its committed employees who take pride in what they do."

After living in the Village of New London for nearly three decades, Denny and his wife, Karen, have a home in Carey, Ohio, where they are originally from. The Maruggs have two grown children and four grandchildren.

Marugg enjoys being on the golf course and spending quality time with his family — especially his grandchildren. In talking about his future plans, Marugg said he would like to continue being involved in some type of line work. He is looking forward to spending more time with his family and golfing.

"Denny Marugg has been a very hardworking employee who has made significant improvements to our electrical infrastructure," said April Bordas, retired general manager, who worked with Marugg during his duration at the cooperative. "He is a very dedicated employee who has always looked out for the best interest of the cooperative and its members, and we wish him well in his retirement."

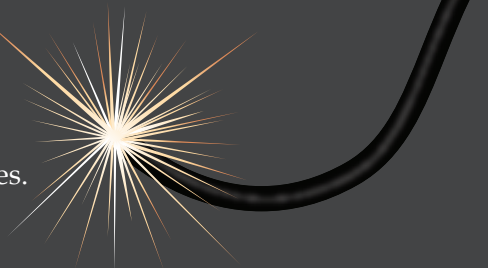
Co-op Announces New Board Officers

Firelands Electric Cooperative recently announced new officers for its Board of Trustees. Pictured from left to right are President and District 1 Trustee Dan Schloemer, Vice President and District 4 Trustee Bruce Leimbach, and Secretary/Treasurer and District 5 Trustee Carl Ayers.



Stay Back!

Know the difference between types of lines and wires. If you see a downed electric line, be aware that it could be live and dangerous!



Electric Wire

Electric wires are larger and can be easily identified by the three separate twisted wires, one being uniquely silver or uninsulated.

Cable Wire

Cable lines are round and look similar to the coaxial cable that connects to the TV in your home.

Phone Wire

Telephone wires are typically smaller, flat wires.





EMPLOYEE NEWS

JAMES MILLER CELEBRATES 15 YEARS OF SERVICE



James Miller
System Right-of-Way
Coordinator

James Miller marked his 15th anniversary with Firelands Electric Cooperative last month. He started at the cooperative as a tree trimmer and was promoted to system right-of-way coordinator in 2007. He has trimmed a lot of trees in the past 15 years, because line clearing is crucial to maintaining Firelands Electric's high service reliability standards.

Right-of-way tree maintenance is an

ongoing process along Firelands Electric's 994 miles of line. A branch contacting a power line can cause voltage fluctuations, blinking lights, or even an outage for hundreds of Firelands' members. There is always brush-hogging, cutting, trimming, and necessary tree removal to keep crews busy.

Miller organizes the cooperative's annual right-of-way maintenance program and serves as a liaison between members and tree contractors. He is responsible for coordinating vegetation management across Firelands' entire distribution system, directing and supervising the contracted tree crews as they trim and cut trees to maintain safe clearances from the cooperative's power lines. He also meets with member-consumers to discuss questions or concerns about line clearance operations.

"Firelands operates a continuous tree-trimming rotation," Miller said. "We also incorporate spraying to control brush and other unwanted vegetation. This helps keep vegetation under control. Tree trimming and spraying saves the cooperative from many outages and potential hazards when weather could cause tree branches and vegetation to come in contact with power lines."

Miller said he truly enjoys working with members of the cooperative and assisting them with their tree concerns. "I really like being part of the effort in providing quality power to Firelands Electric's member-consumers," he said.

A native of Huron County, Miller resides in the Clarksfield area with his wife, Michelle. They have two daughters and three grandchildren. He supports his community by serving on the Huron County Fair Board of Directors. In his spare time, Miller enjoys camping, farming, metal fabrication, and spending time with his family.



EMPLOYEE NEWS

CHRIS ROWLAND CELEBRATES 10 YEARS OF SERVICE



Chris Rowland
Journeyman Lineman

Chris Rowland marked his 10th anniversary with the cooperative in January. He was hired as an apprentice lineman in 2008 and promoted to journeyman lineman in 2012 after completing his training and graduating from the Central Ohio Lineworker Training program at Marion Technical College.

As a journeyman lineman, Rowland handles all types of electric power line problems. From overhead and underground

distribution lines, transformers and reclosers, substations, and everything in between — he is equipped to repair storm damage and other problems to get power restored as quickly and safely as possible.

Over his past decade with the cooperative, Rowland has volunteered twice in assisting other electric cooperatives in Ohio with restoration efforts. “Working in sweltering temperatures to repair damage caused by severe storms containing straight-line winds was definitely a challenge,” Rowland said. The storms ravaged the Buckeye state, along with much of the eastern U.S., just before a Fourth of July holiday, and while many of his coworkers were planning their family festivities, Rowland was dedicated to getting power restored to those in need.

“I truly enjoy being a lineman, facing new daily challenges, and being part of the effort in providing quality power to Firelands Electric’s members,” Rowland said. “When responding to storms, I enjoy making a difference by working and doing everything in my power to get the lights back on.”

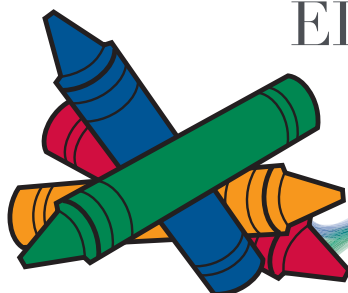
A native of New London, Rowland resides in the New London area with his wife, Debbie, and their three children. He enjoys volunteering in his community and coaching his kids’ sporting events. Rowland has been a volunteer fireman for nearly 23 years and was recently promoted to captain of the New London Fire Department. In his spare time, Rowland enjoys truck pulling, restoring vintage trucks, attending antique truck shows, and spending time with his family.



FIRELANDS ELECTRIC COOPERATIVE LOCAL PAGES



YOUTH PROGRAMS



ELECTRICAL SAFETY ART CONTESTS

We need your help!

Firelands Electric Cooperative wants to feature YOUR artwork in an upcoming issue of *Ohio Cooperative Living* magazine.

Children who reside in a home receiving power from the co-op are invited to enter the 2018 Electrical Safety Coloring and Digital Art Contests. In May, as part of National Electrical Safety Month, winners and their entries will be featured in the local pages of *Ohio Cooperative Living* magazine, as well as on Firelands' website and social media outlets.

Contest entries are due by Thursday, March 1, and winners will be notified by March 15. The top two entries from each group will be awarded a trophy and gift card.

Official contest rules and materials are available at www.FirelandsEC.com/content/contests. If you have no Internet access, please contact member services at 1-800-533-8658, or visit the office at One Energy Place, New London, for materials.

Entries will be judged in the following categories:

Coloring

Group 1: ages 3-4 years Group 2: ages 5-6 years
Group 3: ages 7-9 years

Digital Art (video, poster, or ad)

Group 4: ages 10-14

All entries must include a completed official entry form and photo release form.

2018 Electrical Safety Coloring and Digital Art Contests

Coloring Divisions

- Participants should submit a completed coloring page and official entry and photo release forms to: Firelands Electric Co-op, Attn: Art Contests, P.O. Box 32, New London, OH 44851.
- All contest materials are available at www.FirelandsEC.com/content/contests.

Digital Art Division

- Participants should create a digital poster/ad or video (30 seconds or less) that illustrates an electrical safety topic.
- Suggested electrical safety topics and resources are available in the official rules, which can be found at www.FirelandsEC.com/content/contests.
- Poster/ad entries should be submitted in high-resolution PDF format. Videos can be live action or animated and should be submitted in MP4 or QuickTime Movie format.
- Entries must be smaller than 20 MB and should be e-mailed to members@firelandsec.com.



YOUTH PROGRAMS



Education helps shape the leaders of tomorrow. That's why Firelands Electric includes it as one of our seven core principles. In 2017, the cooperative introduced a new program to encourage students in their pursuit of academic excellence. Students in grades 6-8 are invited to become part of "The A Team" and be recognized for their hard work and dedication to education.

ACADEMIC EXCELLENCE

Winners of December drawing receive iTunes gift cards



Kiaya Thierry

*New London Local Schools
Daughter of Kevin and Molly Thierry*



Logan Calame

*South Central Local Schools
Son of Henry and Stacey Calame*

Send us your grade card and win!
The next drawing will be held February 10.

How you can win

Students in grades 6-8 who have a minimum of three A's on their most recent report card, and whose parents or guardians are members of Firelands Electric Co-op, are eligible to apply. A copy of the report card must be submitted by mail to Firelands Electric Co-op, Attn: The A Team, P.O. Box 32, New London, OH 44851. Report cards may also be e-mailed to members@firelandsec.com.

Be sure to include the student's name, age, school, grade, address, phone number, the parents' name(s), and e-mail address on your entry.

Complete program details are available at www.firelandsec.com/content/team.



Trevor Wetherbee

*New London Local Schools
Son of Raymond and Elizabeth
Wetherbee*



ENERGY EFFICIENCY

ENERGY MATTERS

How to insulate an attic access cover



There are several options available to help insulate the attic access in your home — from the simple-but-effective box shown in the top photo (Source: Battic Door) to the zippered cover in the bottom photo (Source: Attic Tent).

In a well-insulated house, even a few square feet of uninsulated floor — like the attic access cover — can lose a considerable amount of heat. Builders don't always insulate and seal the attic access opening cover, but it certainly should be added for energy savings. Most often, just a scrap piece of plywood or drywall is cut somewhat close to the correct size and placed in the opening, resting on a strip of molding. That type of cover's insulation value is less than R-1, and it leaks air like a sieve.

Because the attic access is often in the ceiling of a bedroom closet or a hallway, the air leakage and heat loss/gain are seldom noticeable. During summer, attic temperatures can get extremely high and the air is humid, so you don't want it in your living

space. During winter, the heated air in the house, because it is less dense, tends to leak up and out.

The simplest fix is to attach insulation to the top of the cover and weatherstripping underneath where it rests on the lip of the opening. Measure the cover to make sure it fits the access opening, with the cover overlapping the molding lip so the weatherstripping seals well. If you have to make a new one, a piece of half-inch drywall works well and is fire resistant.

The insulation on the top of the cover should be up to the recommended code ceiling R-value for your area,

which can be found at www.energystar.gov. Adding fiberglass insulation above this level will not help.

Before you add weatherstripping to the molding lip, place the cover over it and check whether it's even. The lip often consists of pieces nailed to the sides of the opening that aren't level. You may have to pry a side or two loose and reattach it. If it's very uneven, it will be difficult to get a good seal under the cover, no matter how compliant the weatherstripping is.

The next step is to attach adhesive-backed foam weatherstripping to the top edge of the lip around the opening. Use as thick a foam as you can find to accommodate any out-of-level edges. The weight of the plywood and drywall should be adequate to compress the foam weatherstripping.

If you plan to go up into your attic often and want to install pull-down stairs or a ladder, or your attic currently has one, buy a special insulated cover for the attic access opening. You could attempt to make one yourself, but its weight may make it hazardous to open and manage when you are on the stairs. One of the least expensive options is basically a three-sided, heavy-duty cardboard box. It's easy to open and assemble, and you can attach your own insulation to the top and sides.

An efficient option is a lightweight, large rigid-foam domed device that covers the folded stairs or ladder from above. It's strong, and the foam provides adequate insulation. Another design uses a flexible, zippered insulated cover that is permanently attached to the attic floor for a good airtight seal. The zipper provides a large opening for easy access to the attic.

Visit www.TogetherWeSave.com, an energy efficiency website from the nation's electric cooperatives, which has two videos on this subject as part of its Watch & Learn series. You can also visit www.energysavings.togetherwesave.com/watch-and-learn and click on the Sealing and Insulation tab to find how-to videos on insulating attic hatches and attic pull-down stairs.

2018 MEMBER PROGRAMS

PROGRAM TYPE	AMOUNT	GENERAL REQUIREMENTS*
APPLIANCE REBATES		
Refrigerator & freezer Dishwasher & clothes washer	\$100* bill credit \$50* bill credit	Replace an existing appliance with an ENERGY STAR®-certified appliance. Required documentation includes: proof of removal of old appliance, copy of receipt for the new appliance, and proof of ENERGY STAR certification.
COMMERCIAL & INDUSTRIAL (C&I)		
C&I custom lighting	\$1* per watt reduced, based on lamp wattages, up to 50% of material costs	Program is applicable for commercial and industrial business facilities located on cooperative lines only, including agribusinesses. Lighting at the facility must be used a minimum of 1,800 hours per year. Pre-approval of the project is required prior to installation.
C&I custom energy audit	50% of audit cost, up to \$2,000*	Program is applicable for commercial and industrial business facilities located on cooperative lines only, including agribusinesses. Audit must be performed by a professional auditing or engineering firm and must include an audit of electric energy use. Pre-approval of the project is required prior to audit.
C&I custom energy improvement	50% of improvements, up to \$3,000*	Program is applicable for commercial and industrial business facilities located on cooperative lines only, including agribusinesses. Improvements made must be recommendations from a C&I Energy Audit (see above).
LOAD MANAGEMENT REBATES		
Air-source heat pumps	\$500* Rebate	New or replacement all-electric air-source heat pump system that meets or exceeds Firelands' energy efficiency standards: Split SEER 15.0, EER 12.5, HSPF 8.5; Package SEER 14.0, EER 12.0, HSPF 8.0.
Dual fuel heat pumps	\$250* Rebate	New or replacement dual fuel heat pump unit added to any fossil fuel (gas/propane/oil) furnace that meets or exceeds Firelands' energy efficiency standards (see above).
Geothermal systems	\$800* Rebate	Installation of a new or replacement geothermal system that meets or exceeds Firelands' energy efficiency standards: EER 17.1, COP 3.6; Open Loop EER 21.1, COP 4.1.
Electric water heaters	\$100* Bill Credit	Installation of a new or replacement 50-gallon or larger tank with an Energy Factor (E.F.) of 0.91 or higher.
WEATHERIZATION REBATES		
Air-sealing upgrades Insulation upgrades	\$400* Rebate \$800* Rebate	Air sealing and insulation upgrades must be installed by a licensed contractor. Do-it-yourself projects are not eligible for this rebate. All qualifying insulation and air sealing upgrades must be installed in an electrically heated residential home and meet or exceed required energy specifications (see complete guidelines).

*A complete listing of specific eligibility requirements for all incentives is available at www.firelandsec.com/content/member-programs. The cooperative's appliance and C&I rebate budget is limited, and the offer expires when funds are depleted, or when the program is discontinued. Load management program rebates and incentives require members to participate in the cooperative load management program by having a PeakBuster radio-controlled switch (RCS) installed on the applicable electric appliance. Communicating and ductless HVAC systems, as well as solar, heat pump, on-demand, and tankless water heaters, do not qualify.



COOPERATIVE UPDATE

BOARD MEETING *highlights*

Firelands Electric Cooperative's board of trustees met Nov. 24 and covered the following items:

- Board President Dan McNaull reported 45 new membership applications for approval by the board.
- Director of Finance and Accounting Tabi Shepherd reviewed October financials and reported on accounting and billing department activities.
- The board reviewed an Oct. 17 safety and training report.
- General Manager April Bordas presented the board a revised 2018 Budget with options. Following discussion, the board decided a final decision will be made during the December meeting.
- The board reviewed the cooperative's capital credit discounting rate. Following discussion, the board set the discount rate at 3.6 percent, effective Dec. 1.
- Bordas provided an update on activity at the construction site for the new facility, reporting that all construction has ceased until spring of 2018.

- The board reviewed a report prepared by Director of Electric Operations Denny Marugg on recent projects in the operations department.
- Line Superintendent Don Englet reported on recent line crew activities and projects.
- The board reviewed a report from Director of Member Services Andrea Gravenhorst on recent communications pieces and upcoming activities involving the member services department.

Firelands Electric is democratically controlled and governed by local people committed to policies that result in a safe and reliable electric system, fair rates, financial responsibility, and superior member service.

The cooperative's next board meeting is scheduled for 7 p.m. Tuesday, Feb. 27, at Firelands Electric's office, located at One Energy Place, New London.

FIRELANDS ELECTRIC COOPERATIVE, INC.

OUTAGE HOTLINE

1-800-533-8658

OFFICE

One Energy Place
P.O. Box 32
New London, OH 44851
419-929-1571

OFFICE HOURS

Mon. - Fri. 8 a.m. - 5 p.m.

www.FirelandsEC.com



BOARD OF TRUSTEES

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Bruce Leimbach
Vice President, District 4

Carl Ayers
Secretary/Treasurer, District 5

W.E. Anderson
District 8

Steve Gray
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Kevin Reidy
District 6

Neil Winslow
District 9

GENERAL MANAGER

Dan McNaull

HAVE A STORY SUGGESTION?

E-mail your ideas to:
members@firelandsec.com

**Firelands
Electric**
COOPERATIVE
Your Touchstone Energy® Partner 