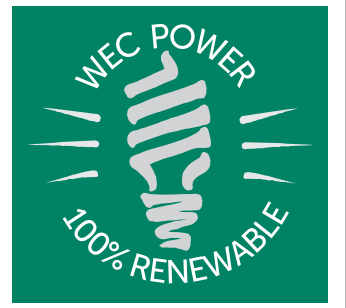




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CO-OP CURRENTS



Vol. 78, No. 7

The newsletter of Washington Electric Cooperative, Inc., East Montpelier, Vermont.

October 2017

Right of Way Crews Keep 1,250 Miles of Line Clear — By Hand

This time of year, people flock to Vermont to look at the trees. Our hardwood forests turn red and yellow as maples and birches put on their annual show. But Mike Myers, WEC's Right of Way Management Coordinator, and the tree crews WEC subcontracts, spend every day and every season considering and evaluating the trees in the Coop's service area.

22 years ago, when Myers joined the Coop team, the avid hiker was worried about one thing. "I was kind of worried when I started here I wouldn't get out in the woods!" he laughed.

That hasn't turned out to be the case. "I do a lot of patrolling and visual inspection of our system," he said, which in WEC's rural territory, means a lot of time in the woods. With added input from line crews and outage reports, Myers uses this information to organize the tree crews that keep the lines free from hazards.

Simply put, tree crews work to reduce outages by controlling vegetation in the right of way. The Coop's "right of way" is the area around a power line that must be kept clear of potential hazards. Around transmission lines, the right of way is generally 100 feet

wide. "Those are like your arteries," explained Myers. "If a transmission line goes down, a whole substation could go down," which could knock out power for a couple of towns.

"Logging itself is very dangerous. You have some skilled loggers, and then you add a 7,200 volt line into the equation."

— Mike Myers, WEC Right of Way Management Coordinator

Three-phase feeder lines—picture the poles along a main road with three lines across the top—usually see a 50 foot right of way. Distribution lines—which might serve a residential road—see a 30 foot right of way.

WEC's rights of way are usually cleared by flat-cutting vegetation along the ground. This is usually what passersby notice in roadside work—visually, a flat cut stretch can be an abrupt contrast to a few years' growth of brush, though crews are careful to leave low-growing useful trees, like apple and nut, intact. Along roads, crews use a bucket truck to clear encroaching limbs. The crews also remove weak and leaning trees outside the right of way that pose a threat to the lines.

A large percentage of WEC power lines run offroad, in challenging terrain. In these areas, where it's impossible to drive a bucket truck, qualified climbers go up into the canopy using ropes and climbing equipment to bring down hazard

continued on page 4



Mike Myers reveals a newly cleared right of way in a forested area of Topsham. This summer a storm took down two 1940s-era poles, and right of way crews and line crews worked to cut back dense growth and replace the poles and lines.

Democracy in Your Light Bulb

When you picture a main street in a small American town, what do you see? A tree-shaded town green and playground, thriving locally owned businesses, neighbors visiting with each other at the market or general store?

Or do you picture boarded up shops in foreclosed buildings? Vermont is known for rustic charm and farm industry—our tourism and food economies rely on them. But all rural communities have an economic incentive to embrace local ownership and governance. "If you compare Vermont's rural economic landscape with communities that have relinquished local control, and now the only shops are big box discount stores that don't pay a living

wage, you see what happens. You lose your voice and any power to control the resources that dictate your life," explained Jean Hamilton, WEC board member and a business consultant with a focus on food systems.

For large, profit-driven companies, there just isn't much incentive to get goods and services out to rural people. In 1939, WEC was founded as a cooperative because shareholder-owned utilities saw no incentive to bring electricity to rural Vermont. And now, said WEC board president Barry Bernstein, high-speed Internet providers talk about bringing their service to rural

continued on page 8

Washington Electric Cooperative

East Montpelier, VT 05651

Inside

WEC wins state safety award: For the third time, the state recognized WEC's culture of safety with its top award. More in General Manager's report, p.3.

Member writes in with a personal experience of driving a Chevrolet Bolt, p. 6.

Grid cybersecurity: The first in a series on cybersecurity and the grid: how it works, myths, and realities. P. 5.



Dawn Johnson

General Manager Patty Richards and Gabe Wendel, son of Finance Director Cheryl Willette, hang loose at WEC's Employee Appreciation Day, October 7 at Mad River Glen. Read more in the President's Message, p. 2.

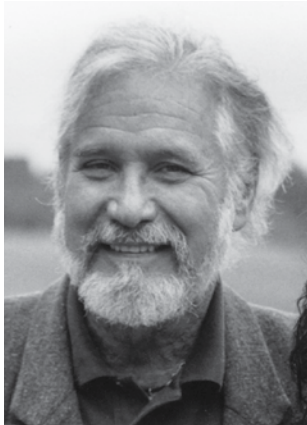
President's Message

Gratitude for Co-ops, Electric Power, Workers, and Community

By Barry Bernstein

What a beautiful late summer we've had! And how grateful I am to see the sun every morning, when so much elsewhere in the country and in the world is not so shiny. Our heartfelt compassion goes out to all those families affected

by the recent Las Vegas tragedy, and to those affected by acts of hatred and violence on any day. Events like Las Vegas affect us all, across all political and other boundaries, and there's only sadness for the victims and their families. Every day, but especially on the really bad news days, I am grateful to be part of a caring, tight-



knit community here in central Vermont.

October is Co-op Month

October is Co-op Month, and it takes me back to my first co-op experience, when I was working and living in London, England, where co-ops began and are still very strong.

However, my first real experience as a member-owner began in Vermont in 1971, when I was involved in starting the Plainfield Co-op, and became a member of WEC. Both co-ops have grown significantly since then. WEC has doubled in size to 11,000 households, operates our Wrightsville hydro and Coventry methane

generation plants, and supplies our members with 100% renewable energy. Several Plainfield Co-op neighborhoods have since established their own standalone stores. Buffalo Mountain in Hardwick now does \$1 million in sales and Hunger Mountain in Montpelier has sales over \$20 million, while the Plainfield Co-op is still going strong.

Potential 2018 Rate Increase

The WEC board and staff are now analyzing numbers as we build the 2018 budget. This past summer we were hit with several storm events that caused significant damage and expensive reconstruction. We hope the last three months of the year will be kinder to us! Patty Richards, our General Manager, mentions several other factors in her report (page 3) that impact rate increase pressures.

Valuing Electricity

It's been a tough fall for weather events—earthquakes, wildfires, and so many hurricanes. The electrical grids of Puerto Rico, the Virgin Islands and other Caribbean islands are especially vulnerable to hurricane damage because they are isolated. Here, our neighbors in New York or Canada could transmit us electricity if a weather event knocked out our power for an extended time. That's not an option there.

It makes me think about how we've gotten so used to having reliable electricity, even though WEC has been delivering electric power for only 78 years. Just 20 years ago, many of us did not yet have cell phones—and now we are willing to spend hundreds of dollars on monthly bills for the privilege of having the Internet at our fingertips wherever we are. Compared to our cell phone bills, our electricity bills are pretty low. Yet, if you had to go for a week without your cell phone, or without lights, refrigeration, your well pump, etc., which would you choose?

A farmer neighbor once mentioned to one of our board members that his electric bill cost him about the same as a restaurant dinner. He enjoyed eating out, but by morning, he was hungry again. On the other hand, having power in his home was

something he appreciated all month long. I hope this is a message we can all take to heart—to value electricity for what it is, and to neither waste it nor take it for granted.

Winter Prep

"I hope this is a message we can all take to heart—to value electricity for what it is, and to neither waste it nor take it for granted."


As many of our members harvest the last of their gardens' bountiful tomatoes, kale, and squash, our farmers are mowing and baling their third cut of hay. It is also a time for moving and stacking wood into our sheds and basements, beginning our final outside preparations on our homes, putting away our lawn mowers, and catching the

last of autumn's colors. Remember, if you have any drafts that need to be sealed or cold weather appliances you need to purchase, take advantage of Button Up! incentives. See the infographic on page 7 and contact Bill Powell at 802-223-5245 or energycoach@wec.coop.

At the same time, our line and right of way crews are tackling work on our distribution and transmission lines scheduled for the last quarter of 2017. Keeping vegetation away from the lines is essential for preventing outages, and the all-local right of way crews we hire are careful to preserve low-growing, wildlife-friendly trees while removing hazards—and they do it all without spraying dangerous chemicals on the land. Meanwhile, our top-quality line crew is making sure our poles and lines are shipshape before the first winter storms hit. If you see them around, thank them for keeping your lights on.

Employee Appreciation Day

I was fortunate to join our employees and their families at the Mad River Glen Ski Area, a sister co-op, in early October. Some of us rode the single chair lift to the top and back, while a number of folks hiked up, and some played games at the base lodge.

We all had a great time, but appreciating our employees is really not just a one day event. I applaud WEC staff year round for their dedication to the co-op and the excellent service they give our members, in both good and bad weather. On behalf of the WEC board and our members, THANK YOU! 

Co-op Currents

Co-op Currents (Publication No. USPS 711 -210 and ISSN No. 0746-8784) is published monthly except February, May, August and November by Washington Electric Cooperative, Inc., 40 Church Street, P.O. Box 8, East Montpelier, Vermont 05651. The cost of this publication is \$.51, which is included in the basic monthly charge to each member. Periodical postage rates paid at East Montpelier and at additional offices. Postmaster: Send address changes to *Co-op Currents*, P.O. Box 8, East Montpelier, Vermont 05651.



WEC is part of the alliance working to advance and support the principles of cooperatives in Vermont.

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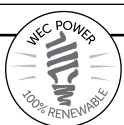
Patty Richards Donald Douglas Jean Hamilton Anne Reed Katie Titterton

The Board of Directors' regularly scheduled meetings are on the last Wednesday of each month, in the evening. Members are welcome to attend. Members who wish to discuss a matter with the Board should contact the president through WEC's office. Meeting dates and times are subject to change. For information about times and/or agenda, or to receive a copy of the minutes of past meetings, contact Administrative Assistant Dawn Johnson, at 224-2332.

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Got something to say?

Letter to the editor, comment, or a story tip? Drop us a line at currents@wec.coop or Washington Electric Cooperative, Inc., P.O. Box 8, East Montpelier, VT 05651, Attn: Co-op Currents.



Manager's Report

WEC's Culture of Safety

Plus: line crew heading to St. Thomas for hurricane relief, rate design listening groups, and possible 2018 rate increase

By Patty Richards

WEC Wins State Safety Award

On October 13, we were excited and honored to receive the 2017 Governor's Award for Outstanding Workplace Safety. This award recognizes WEC for its workplace practices and low rates of injury.

This is WEC's third time receiving the Governor's Award. As Safety and Environmental Compliance Specialist Rick Stergas put it, "Safety at WEC is part of the culture." We have long believed in building a culture of safety, all our staff contribute to this culture of safety, and this award recognizes the results. In 2016, WEC vehicles drove 225,000 miles without a driver-related accident. This September, we marked 700 days without a lost time accident.

We have 37 hardworking employees who are focused on safely delivering reliable, affordable, and renewable power to our members. WEC employees work in all sorts of weather, at all times of the day, under some very unforgiving conditions. The attitudes, beliefs, and values that we share in relation to safety in the workplace is the basis for our organizational culture. It is how we do things each and every day.

Congratulations go out to all WEC employees!

Hurricane Relief and Support

WEC is working with several municipal and cooperative utilities across New England to assemble teams of line crew to help regions impacted by hurricanes. WEC crew are headed to the Virgin Islands to provide emergency restoration service in St.



Thomas.

The conditions will be difficult and intense. St. Thomas was decimated by Hurricanes Irma and Maria, and the electric grid was devastated. Our staff may need to sleep in tents and will work long hard hours in hot weather. This is grueling and difficult work under regular conditions. The extra

stress of hurricane damage conditions will make this a very difficult charge.

In times of need, we share resources and assistance to get the power back on across the US. We are there to help the island rebuild, and we thank WEC employees who are volunteering.

Rate Design Listening Groups

We want to know what our members think about the current way we charge for our services, and we also want to find out what folks think about alternatives. So, we are planning to hold listening sessions in early November on this important topic.

The state's goal is to reach 90% renewable in all forms of energy by 2050 (electric, heat, and cars). We already have a power mix that is 100% renewable, and we want to help move members off fossil fuel and instead use renewable electricity from WEC to power cars and heat homes. At the same time, our current rate structure is designed to encourage energy conservation—not more energy use.

What this means is we'll ask a sample of Co-op members to discuss our rates and how we charge for service. This sample group will give us representative information about what our larger membership thinks. This is a focus group research technique, though we think it's more accurate to



Governor Phil Scott presents the Governor's Award for Outstanding Workplace Safety to Safety and Environmental Compliance Specialist Rick Stergas. It's the third time WEC has won this prestigious state award.

call it a listening group. This technique is commonly used to learn about a population's perceptions, opinions, beliefs, and attitudes towards a product or service.

We believe listening groups will be a very informative and helpful part of WEC's rate design discussion and process. If you are called on, we hope you will share your thoughts with us.

2018 Rate Increase?

Staff and board are looking now at our budgets and costs for the upcoming year. It appears we may need to increase rates in 2018. It is too soon to put a number on the increase, but there are several factors in play. We already know in 2018 we will face rising costs from transmission and regional grid operator ISO-NE. With rising costs,

declining sales, and no way to offset the new expenses, we expect a rate increase will be needed. We will keep you apprised.

WEC sponsors Accel-VT

This fall we joined all the other utilities in the state to sponsor Accel-VT, a business accelerator for people working to address issues in how we use energy and to help the grid integrate better with renewables. To us, it's a win-win-win: encourage job growth in our communities, stabilize the grid, preserve natural resources. An opportunity to support innovation and positive change in our communities is a good investment, and we can't wait to see what great ideas come from participating entrepreneurs. 🐌



Linda Nelson, Assistant Finance Director; Sandy Gendron, Information Database Technician; and Beth Ouellette, Sr. Member Service Representative catch up and enjoy each other's company at WEC's Employee Appreciation Day at Mad River Glen on October 7.

Right-of-Way Clearing

continued from page 1

trees and branches.

All this work is done by tree crews using chainsaws and chippers—not chemicals. Since 2003, WEC has implemented a no-herbicide policy. “This is a very unusual practice for an electric utility,” said General Manager Patty Richards. “I’m so proud we do it this way.”

It’s in keeping with WEC’s environmental mission. For WEC members and leadership, not using herbicides on trees is consistent with its commitment to energy efficiency and its 100% renewable power supply. Richards also sees the policy as fiscally responsible, since it’s limiting harm. “We don’t yet know what long term effect herbicide chemicals have” on local soil and water sources, she points out. What WEC spends on tree crews goes straight back into the central Vermont economy, and does not fund chemicals and the corporations that make them, like Roundup, a product of the controversial agribusiness giant Monsanto.

Richards is also mindful that although WEC has the right to clear them, rights of way cover 5,000 acres of land privately owned by Coop members. So, she said, it’s the right thing to leave low-growing apple and nut trees intact, reroute poles to preserve towering maples, and site new lines to avoid cutting old growth and preserve scenic road canopies. “Our trees are an important part of what makes Vermont special,” she explained. “WEC has adopted a policy of good environmental stewardship, and we include aesthetic principles into our tree trimming practices.”

WEC runs power on 1,250 miles of overhead line. Tree crews cycle through sections of line roughly every 10 years. They must clear about 130 miles of line each year to stay on top of the growth, in addition to managing downed or dangerous trees called in by line crews and concerned members.

Crews work all year to keep up. Matt Foster Logging out of Craftsbury is one of five local tree crews WEC subcontracts. Foreman Trey Allen says they’re out in all weather. There were a few bitterly cold days last winter, “but we put our heads down and worked. This year’s been pretty rainy, but we still worked every day this summer,” he said, as his crew sawed and chipped brush behind him on a stretch of road in Groton.

The tendency of the regional environment is to revert to hardwood forest, said Myers, who has a degree in forestry from the University of Vermont. “Creating an opening is unnatural to that forest,” he explained. Quick vegetation growth is especially apparent in sections trimmed a few years ago. “We get a lot of regrowth off the cut stumps,” he said, pointing out a dense thicket of tall maple stems on a section of line on Route 302.

Myers has deep respect for the tree crews. “It’s very dangerous work. Logging itself is dangerous. You have some skilled loggers, and then you add a 7,200 volt line into the equation,”



Right of way crew foreman Trey Allen of Matt Foster Logging trained as a lineworker and is an experienced climber. Right of way crews work year round to keep the lines clear of vegetation hazards.



Mike Myers in a stand of new dense brush that grew out of flat-cut stumps along a stretch on Route 302. Dense brush is very difficult for lineworkers to move through, especially in the dark or in bad weather.



Right of way crews flat-cut under the line but took care to leave this homeowner’s apple tree standing.

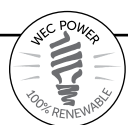
he said. “They’re up in the air working close to these conductors. They need to know their minimum approach distance [two feet, four inches from a live wire], voltage, which equipment is energized and which is grounded.” They also need

to know aerial rescue, CPR, and knots, he added.

Tree crew foreman Trey Allen says he loves his work. He’s trained as a lineman himself, and is an expert climber. But there is one other

challenge lurking on the cut edge of the forest: ticks. “I lost count after 56, just on myself,” he said, and that was early in the season—long before the leaves began to turn. 🐛

DID YOU KNOW?
WEC is one of only a few utilities in the nation that do not use herbicides on rights of way.



Cybersecurity, WEC, and the Grid

A multi-part series examining real and perceived threats to the systems that provide our electric power

Hurricane Maria wiped out power in Puerto Rico. A breach at Equifax compromised sensitive data belonging to 143 million people. North Korea threatened a grid-frying electromagnetic pulse attack. In 2003, a tree took down a transmission line in Ohio, and much of the Northeast sputtered into darkness. And last December, hasty reporting inflamed an alert from Burlington Electric Department into a not-exactly-accurate story of Russia attempting to hack the US grid through our neighbor utility.

These are reminders of the importance of cybersecurity. We all rely on electric power—and we could be very vulnerable if natural or human interference takes down the systems that deliver it. Throughout the grid, security experts closely watch forces of nature, data theft, infrastructure attrition, and high-profile threats. All of these affect the security of the systems that deliver our electricity.

Recently, member Paul Ohlson of Calais raised the question of threat preparedness with the Co-op. He wanted to know “if my utility company is preparing for situations we hope will never happen,” like a malicious actor hacking in and shutting down the electric grid.

WEC is downstream, electrically speaking, from larger utilities, and receives electricity transmitted through lines managed by Green Mountain Power (GMP) and Vermont Electric Power Company (VELCO) via the New England grid managed by ISO-NE in Holyoke, Massachusetts.

But, Ohlson pointed out, WEC generates its own electricity via the Wrightsville hydro plant and the Coventry landfill generator, and there is distributed energy through private solar installations. If a hacker or act of violence caused the entire grid to crash, he wondered, “Is there a way to draw a wall around us, in case the rest of it goes down?”

His concerns are practical. Yes, WEC and its upstream neighbors are prepared and vigilantly monitoring for situations we hope will never happen. And while there’s not exactly a way to wall WEC off from the grid, sections can sense disturbance and isolate—a strategy that kept most of Vermont’s lights on during the 2003 blackout. We’ll come back around to that.

All WEC staff and utilities up the transmission line unanimously put forth two messages: one, that there are robust security plans in place, and two, the risk of a single malicious main event intended to cause widespread, long-term damage is far smaller than

the more common risks of hackers looking for personal data, and most of all, weather events.

This article is the first in a series in *Currents* on cybersecurity. We’ll work to

understand the relationship between WEC and the grid and the basics of how cybersecurity works at the different stops on the grid. Then we’ll evaluate the risks and how transmission and distribution utilities prepare for them—and look to how each of us can offset risk. The goal is to educate and to alleviate fears. But take note that this isn’t exhaustive: some

information must be filtered to protect the systems that keep us secure.

Protection, detection, and response upstream

WEC is a local distribution co-op utility. Energy reaches WEC’s substations through transmission: as a result, vulnerabilities up the transmission lines not owned by WEC would certainly affect the co-op. As General Manager Patty Richards put it, “The grid is like a big spider web,” of electricity connecting Vermont utilities, the greater New England grid, and neighbors New York and Quebec. “One tweak in the web ripples across the system. But the web is built to hold if part of it becomes damaged or broken,” said Richards.

Richards and *Currents* editor Katie Titterton reached out to ISO-NE, which manages the New England grid, and VELCO, the Vermont Electric Power Company, which manages the transmission lines that bring power to local utilities. We asked about cybersecurity protection, detection, and response—what upstream utilities do to protect the system and keep the lights on for WEC members. Both ISO-NE and VELCO staff remarked that the sensitive nature of the security they have in place limits the amount of information they are able to share publicly about cybersecurity.

A representative at ISO-NE explained that the organization staffs a 24-7 Security Operations Center that constantly monitors the network, and that all ISO New England employees are required to undergo an annual training in cybersecurity. The organization also participates in a biennial exercise called GridEx, a project of the North American Electric Reliability Corporation (NERC). The exercise is designed to simulate a cyber/physical attack on electric and other critical infrastructures across North America. The representative added that if something does happen to interrupt the reliable operation of the grid, whether a malicious attack

or a natural disaster, the system is protected by both physical and cyber redundancies. Which means: if something were to happen, the backup systems are already ready.

Lessons from the 2003 blackout

Richards pointed out that it’s good to have neighbors—in New England’s case, Canada and New York. If power ever went out in New England, our neighbors can transmit electricity to us. The absence of neighbors, she said, is part of the reason Puerto Rico’s grid was so vulnerable to hurricane damage. “We have great grid resilience due to the vastness of the spider web,” she said. And, she added, if there is a transmission problem elsewhere in the nation, our region can isolate our portion of the grid.

Many of these lessons came out of the 2003 Northeast blackout, which was caused by a tree taking down a transmission line at the

same moment that a natural gas plant’s generation hiccuped. “Things tripped offline, literally in seconds, from Ohio down to New York City,” remembered Richards. But grid equipment in New England could tell that something was wrong in the transmission system and automatically broke the connection. “Basically, New England disconnected from New York in a nanosecond,” said Richards, leaving only a few border regions briefly without power.

As a result of the blackout, NERC (the North American Electric Reliability Corporation) became the enforcement arm of the government, stepping in and fining utilities up to a million dollars a day if they fall short of standards of tree trimming, maintenance, and other reliability standards. In addition, more redundancies have been built into the system, Richards explained, so that the grid can withstand multiple occurrences happening at the same time—the probability of which is astronomically small.

The region has invested in infrastructure, such as transmission, confirmed the ISO-NE representative. As a result, the grid meets stringent reliability standards set by NERC, its regulators, and organizations that determine best practices for grid operations.

Layers of an onion

Vermont Electric Power Company, or VELCO, operates transmission lines in Vermont, connecting regional power to local distribution utilities. One of its security strategies is to enforce “concentric rings of protection and firewalls,” said Director of Technology Dan Nelson, around its computers.

That way, any computer connected to the Internet is completely isolated from computers connected to control systems. “There are very, very tight controls on our inner core,” said Technical Lead on Security and Compliance Kris Lewia, adding that any data that control systems require for updates is thoroughly investigated for integrity before it is imported. Nelson and Lewia likened the system to the layers of an onion, with an absolute stop between each layer.

This type of firewalling is intended to protect the grid control computers from infection from Internet sources. Lewia pointed out that the malware that caused hackers to black out a portion of Ukraine’s power grid for a


few hours last December initially reached operators through email. A firewall isolation ring approach probably would have helped—Ukraine’s protections and practices are vastly different from the United States system. But any computer

connected to the Internet is vulnerable to malware. Antivirus updates and employee education on Internet safety are critical protection for any internet-linked computer system—those internet-connected computers on the outer layer of the onion are “the first line of defense to keep [us] safe, reliable, and secure,” said Lewia.

WEC remains analog

Like most utilities, WEC uses computers and software to monitor its grid. But unlike most utilities, WEC does not use these systems to control its substations remotely. “We don’t run any of our substations or devices using computer systems connected to the Internet,” explained WEC’s Manager of Information Services Kevin Stevens. This decision to have an analog control system actually makes WEC safer, says Stevens, likening the setup to a home computer that is plugged in but not connected to the Internet.

There are two computer systems at work: the system that monitors the electric distribution grid, and the business side. That includes things like email and electric account management, and these necessarily connect to the Internet. We’ll look at securing that system, and preparing for weather events, in the next issue.

“Sure, think of us as your folksy, hometown co-op utility,” Richards said. “But we recognize cybersecurity is an evolving and complex concern, we take it very seriously, and we are committed to preventing threats that could cause long-term outages.” 

Next in the series: Assessing the threats and offsetting risk

“The grid is like a big spider web. One tweak in the web ripples across the system. But the web is built to hold if part of it becomes damaged or broken.”

— General Manager
Patty Richards

One security strategy is to enforce “concentric rings of protection and firewalls,” like layers of an onion.

Member Writes: On Driving an Electric Car

By Frank Perricone

A few months ago we traded in our six-year-old Prius for a 2017 Chevrolet Bolt EV. We got a 240V charger installed in our garage a few days later.

Our experiences have matched those reported in "What's It Really Like to Drive an Electric Vehicle?" (September, 2017) in most ways, though with a 238 mile range, we have very little of the "range anxiety" that Leaf drivers endure.

We've also had less worry about finding chargers since the PlugShare and ChargePoint apps on our phones find them for us. Generally, there are medium-speed chargers available almost anywhere you go; the map is dotted with them. Fast chargers, that can give us 40-60 miles of range in a half hour, are less ubiquitous, but there's still one on any leg of any trip we take, so with a bit of planning



WEC member Frank Perricone with his family's all-electric Chevrolet Bolt.

members should keep in mind is whether they're a one-car or multi-car family. We're a one-car family, so by going electric, we're all-in. If we have to do a long trip (like an upcoming one to the airport in Providence, RI) we have to plan out charging stops to make it work. (Apparently airplane pilots are often early adopters of electric cars because they're already used to the idea of planning their refueling before they take off.) Or rent a car.

we can get anywhere with minimal delays to charge. We've had a couple of experiences where one didn't want to charge—we were always able to resolve them, but it can be a worry. But we expect this concern to diminish greatly over the next year or two. EVgo is improving their service, Chevrolet dealerships are putting in fast chargers, and other providers are coming online.

One key consideration that Co-op

However, most people have two cars in their driveway, and if you have two cars, replacing one with an EV is a no-brainer. Knowing that, for that rare day you need to drive hours and hours, you can always just use the gas-powered car, means you can reap the benefits of an electric car for at least one of your drivers without range anxiety even being a consideration.

Special thanks to Frank Perricone of Orange for sharing his experience owning and driving an electric vehicle. Frank and his wife Siobhan have lived in Vermont for 24 years, and moved here from Southeast Alaska. Both work in software development and support for the State of Vermont.

Co-op Principles



1. Voluntary and Open Membership

— Cooperatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.

2. Democratic Member Control — Cooperatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary cooperatives, members have equal voting rights (one member, one vote) and cooperatives at other levels are organized in a democratic manner.

3. Member Economic Participation — Members contribute equitably to, and democratically control, the capital of their cooperative. At least part of that capital is usually the common property of the cooperative. They usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing the cooperative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the cooperative; and supporting other activities approved by the membership.

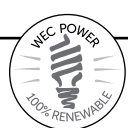
4. Autonomy and Independence — Cooperatives are autonomous, self-help organizations controlled by their members. If they enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their cooperative autonomy.

5. Education, Training and Information — Cooperatives provide education and training for their members, elected representatives, managers and employees so they can contribute effectively to the development of their cooperatives. They inform the general public — particularly young people and opinion leaders — about the nature and benefits of cooperation.

6. Cooperation among Cooperatives — Cooperatives serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures.

7. Concern for Community — While focusing on member needs, cooperatives work for the sustainable development of their communities through policies accepted by their members.

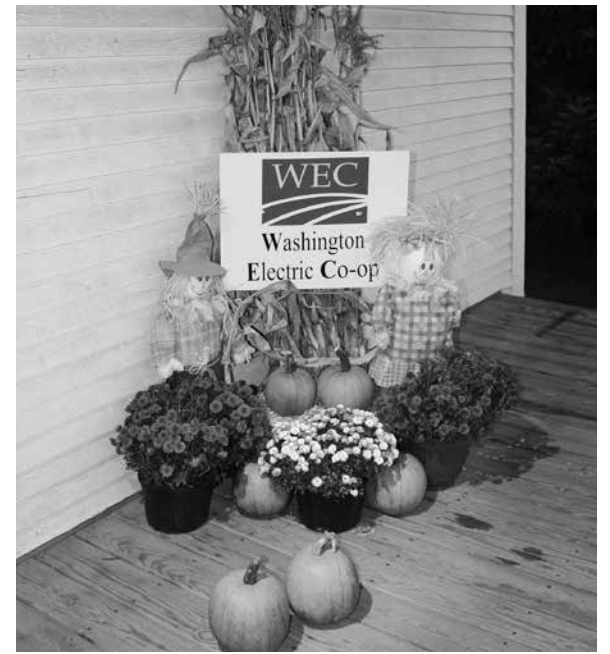
UNITED STATES POSTAL SERVICE® (All Periodicals Publications Except Requester Publications)			
1. Publication Title Co-op Currents	2. Publication Number IS SN 07 46 - 8 7 8 4	3. Filing Date 10/18/17	
4. Issue Frequency Monthly except February, May, August, and November	5. Number of Issues Published Annually 8	6. Annual Subscription Price \$4.07	
7. Complete Mailing Address of Known Office of Publication (Not printer) (Street, city, county, state, and ZIP+4®) Washington Electric Cooperative, Inc. PO Box 8, 40 Church Street East Montpelier, VT 05651-0008		Contact Person Dawn Johnson Telephone (include area code) 802-223-5245	
8. Complete Mailing Address of Headquarters or General Business Office of Publisher (Not printer) Same as 7 above			
9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor (Do not leave blank)			
Publisher (Name and complete mailing address) Same as 7 above			
Editor (Name and complete mailing address) Katie Titterton Washington Electric Cooperative, Inc. Same as 7 above		Managing Editor (Name and complete mailing address) Patty Richards Same as 7 above	
10. Owner (Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.)			
Full Name Washington Electric Cooperative, Inc.		Complete Mailing Address PO Box 8, East Montpelier, VT 05651-0008	
11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities. If none, check box <input checked="" type="checkbox"/> None			
Full Name Rural Utilities Services		Complete Mailing Address US Department of Agriculture, Northern Regional Division, 1400 Independence Avenue, SW Washington, DC 20250	
National Rural Utilities Cooperative Finance Corporation		2201 Cooperative Way, Herndon, VA 22071-32025	
12. Tax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one) <input type="checkbox"/> purposes: Has Not Changed During Preceding 12 Months <input type="checkbox"/> Has Changed During Preceding 12 Months (Publisher must submit explanation of change with this statement)			
13. Publication Title Co-op Currents	14. Issue Date for Circulation Data Below October 2016		
15. Extent and Nature of Circulation			
		Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies (Net press run)		9590	9612
b. Paid Circulation (By Mail and Outside the Mail)	(1) Mailed Outside-County Paid Subscriptions Stated on PS Form 3541 (Include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	9532	9579
	(2) Mailed In-County Paid Subscriptions Stated on PS Form 3541 (Include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	34	30
c. Total Paid Distribution (Sum of 15b (1), (2), (3), and (4))		9566	9579
d. Free or Nominal Rate Distribution (By Mail and Outside the Mail)	(1) Free or Nominal Rate Outside-County Copies Included on PS Form 3541	180	177
	(2) Free or Nominal Rate In-County Copies Included on PS Form 3541	34	33
	(3) Free or Nominal Rate Copies Mailed at Other Classes Through the USPS (e.g., First-Class Mail)		
(4) Free or Nominal Rate Distribution Outside the Mail (Carriers or other means)			
e. Total Free or Nominal Rate Distribution (Sum of 15d (1), (2), (3) and (4))		180	177
f. Total Distribution (Sum of 15c and 15e)		9745	9756
g. Copies not Distributed (See Instructions to Publishers #4 (page #3))		30	33
h. Total (Sum of 15f and g)		9775	9789
i. Percent Paid (15c divided by 15f times 100)		98%	98%
17. Publication of Statement of Ownership <input checked="" type="checkbox"/> If the publication is a general publication, publication of this statement is required. Will be printed <input type="checkbox"/> Publication not required.			
in the October 2017 issue of this publication.			
18. Signature and Title of Editor, Publisher, Business Manager, or Owner General Manager		Date 9/25/17	
I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).			



2017 Nissan Leaf \$10,000 Discount Extended for WEC Members



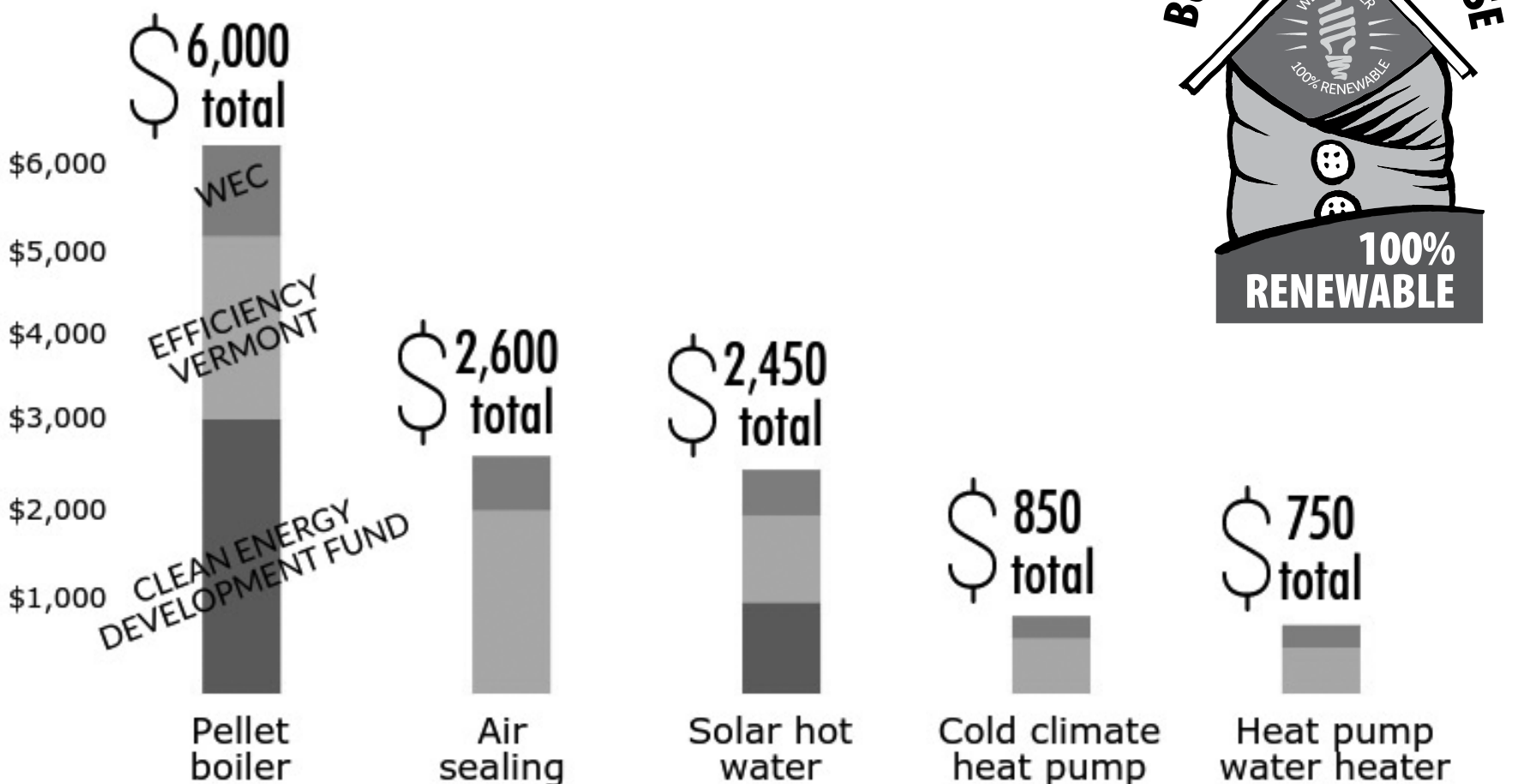
Freedom Nissan still has a handful of 2017 all-electric Nissan Leaf vehicles in stock! WEC members will remain eligible to receive \$10,000 off MSRP on a new 2017 Leaf until December 31, 2017, or while supplies last. Visit Freedom Nissan in South Burlington with your WEC electric bill and supply Fleetail Certification Code B66647.



The 2017 Community Meeting in Worcester fell on Oct. 12, just after deadline for the October issue of Currents, but we snuck in Dawn Johnson's seasonal display greeting WEC members. The Community Meeting featured a full house, lively conversation, and delicious food. Read all about it in the December issue.

What's my incentive to Button Up?

If you're looking to seal up your home, or are in the market for energy-efficient heating systems, WEC's Button Up! home energy efficiency program offers cash incentives to members. In combination with Efficiency Vermont incentives and grants from the Clean Energy Development Fund, you could save a lot of money:



This chart reflects recent changes to incentives. Before you buy any new energy-efficient appliance, call Bill Powell, WEC's Energy Coach, to learn how you can take full advantage of this program:

802-224-2329

energycoach@wec.coop



Democracy in Your Light Bulb

continued from page 1

parts of the state in the same way electric co-ops talked about it in the 1930s. “We’re very proud they use our model. For some of us, that’s still in our mindset,” he said, to bring resources to those the for-profit industry won’t serve.

That’s why the cooperative model is so important. “Co-ops are a different way of doing business,” said WEC treasurer Don Douglas, whose experience includes WEC, food co-ops, student co-ops, and even a garbage co-op. “They’re all over the world, especially in rural areas, where farmers and small businesspeople band together to get a better deal on buying or selling their product. The whole idea of not trying to make a profit, to have all the excess money redistributed through the membership, is pretty radical.”

Rural electric cooperatives, like WEC, are just one of many kinds of co-ops. Vermont is nearly “a thousand co-ops strong, which serves a lot of people,” said Bernstein. Chances are, you belong to or support at least one other co-op—whether agricultural, like Cabot Creamery Cooperative; food, like Plainfield Co-op, Hunger Mountain Co-op in Montpelier, or Buffalo Mountain Co-op in Hardwick; a credit union, like Granite Hills based out of Barre or Vermont State Employees Credit Union (VSECU), which has historically partnered with WEC; or even the famous ski cooperative Mad River Glen in Fayston.

For many co-ops, though, members identify how the service is useful to them, and opt in. Electric co-ops are different. WEC members are members just by virtue of living in WEC’s service territory.


So what are the benefits of belonging to WEC? First of all, said Bernstein, power lines where no investor-owned utility wanted to build.

And a voice: “Our co-op has been willing and able to speak out on issues when they’re important both for the benefit of our members and Vermont,” he says.

Another big one is capital credits, said Douglas, the process by which excess revenue is redistributed to all members instead of profiting a small group of shareholders.

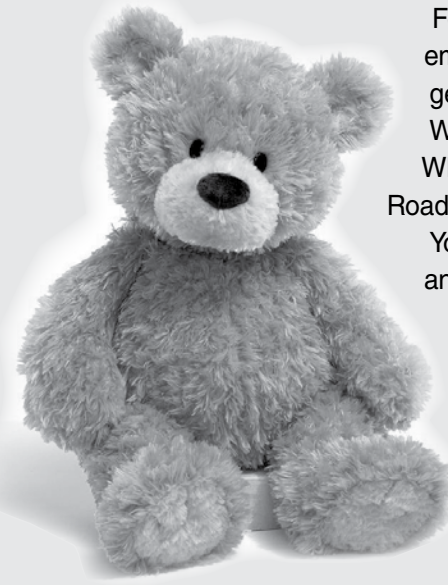
Most important, Douglas said, “It’s democratically elected governance. Before I was on the board, I called board members and asked them questions. You can’t do that with other utilities. Here, we are mandated to reflect community values.” He pointed to three major decisions: the Co-op’s historic choice to stop using nuclear power, its commitment in 2000 to develop a 100% renewable energy portfolio, and its ongoing preference to hire local tree crews to control vegetation instead of applying herbicides around power lines. All of these, he said, are choices raised and supported by the membership.

Democratic governance also requires participation. For example, WEC is currently asking members to participate in focus groups (or as the Co-op’s General Manager Patty Richards prefers to call them, “listening groups”) for their input in redesigning rates. Showing up to participate isn’t as easy as just paying a bill, Hamilton acknowledged. “Electric systems can be complicated,” she said. But, she said, there’s value in “having our governance held by the people who benefit from the resource, rather than shareholders who are invested for a bottom line.”

That’s why WEC’s commitment to the environment and the 41 communities in its service area reflects the values of its members. Membership in an electric co-op, said Hamilton, “gives us the opportunity as a community to define and prioritize our values.” 

Join WEC Staff in the 2017 Toy Joy and Toys For Tots Campaigns

Washington Electric Co-op is enthusiastically participating in Toy Joy and Toys for Tots again this year. Toy Joy is coordinated by Rose Wheeler-Stillson in memory of Zachary S. Wheeler and Toys for Tots is coordinated by Daniel Duffy from the Marine Corps Reserve. Both campaigns work to make sure children in need receive toys for the holidays.



For the past three years, WEC employees, members, and vendors generously filled boxes located at WEC’s office, 40 Church St, and at WEC’s Operation Center, 230 Fasset Road, East Montpelier, VT.

You are invited to stop by between now and December 15 and leave unwrapped toys for children from birth to 15 years at these locations. Toy Joy accepts items in new and near-new condition. Toys for Tots accepts only newly purchased items.


Please join your Co-op staff in this fun and charitable effort!

WARMTH Contributions Help Our Neighbors Bear Long Winters

It’s starting to get cold, and every year, many Vermonters struggle to pay their home heating bills. WARMTH is Vermont’s home heating assistance program, funded by contributions from electric utility customers throughout the state, and operated locally by the Central Vermont Community Action Council.

There are two ways to support this important program. Operation Round-Up is a monthly program that rounds your electric bill up to the next dollar. This is a way to contribute a little bit at a time. Another option is to contribute a lump sum, or to authorize WEC to send an extra dollar or five a month to WARMTH. And, of course, you can do both.

To sign up, look for the Operation Round-Up box on your electric bill and initial it. If you’d like to add more, you can indicate that on the form. And you can always call our Member Service Representatives at 802-223-5245.

Thank you. It takes all of us to keep each other warm and our community strong. 



A view of our extended summer from the top of Wrightsville Dam. The dam’s hydro plant is one of WEC’s owned sources of renewable power. On this quiet afternoon before the leaves turned, bald eagles were observed soaring above the reservoir.

