Volume 80 Number 3 Fall 2023

VERMONT ELECTRIC CO-OP LIFE

In Service to Our Members – Rates, Resiliency, and Balancing

By Rebecca Towne

In the utility business, we plan. And when conditions change, we immediately pivot.

In recent years VEC has done a lot of pivoting. We have tackled a pandemic, supply chain challenges, destructive weather, power supply markets impacted by international events and extremely tough economic conditions. For us, it's about responding to these conditions just like our members and local businesses must do, while also maintaining reliability and transitioning to a clean energy future for our members. To be able to tackle these challenges, we are requesting our second consequential rate increase in two years. On November 14 we filed with the Public Utility Commission for an 8.76 percent rate increase for 2024.

We know this news lands for many at an especially challenging time. As we considered all the increased financial pressures, we also worked to reduce spending as much as we could prudently do. It all came down to a question of balance: how do we keep rates as low as possible while we ensure we accomplish our core job of providing safe, reliable, and clean electricity to our communities.

Key Drivers

The main cost drivers for the 2024 rate increase request include:

• General Running of the Cooperative. Inflation has put upward pressure on some of our core business costs such as interest expenses, labor costs, property taxes, even the cost of mailing. These factors account for over $2 million of additional costs for foundational business operations.

• Purchasing and Distributing Electricity. Power supply and transmission increases for 2024 are expected to be more than $2.5 million higher than in 2023. This is an increase of 4.58 percent over the 2023 budget of $54,870,601. Power supply costs continue to rise as a result of more expensive market rates and contract escalations. Transmission costs are driven by necessary infrastructure investments.

• Maintaining and Operating the Grid, Safely & Securely. To maintain the electrical system, we also rely on contract help and equipment purchases that over the past year have seen these same cost increases from supply chain and inflation. Core functions like vegetation management, grid security, and reliable communication systems are more expensive than last year to maintain.

On top of these cost drivers, VEC is also experiencing reduced revenues due to lower energy demand. We have seen decreased electric usage in both the summer and winter months because we had a cooler summer (less use of air conditioners) and a warmer winter (less use of electric heaters). The increase in home-based renewable energy generation (net-metering) also means the co-op sells less electricity. Additionally, the price we are required to pay for net-metered energy is higher than what we could otherwise buy renewable energy for in the marketplace. We estimate the annual above market costs paid by VEC for net metering to be over $1.7 million.

Our team has done the hard work of tightening our belts for the remainder of 2023 and scrubbing the 2024 budget to find all prudent savings. We do expect some increases in revenue due to dividends from VEC investments in VT Transco stock, part of the value of the Vermont model where the distribution utilities own the statewide transmission utility. We also found some cost savings from some program implementation changes – always looking for efficiencies in how we serve you and do our work. We know affordability is important to our members – and it's important to us too. We also know our members depend on electricity and the reliability of the grid more than ever. Every day our team at VEC works to balance the need to keep rates as low as possible while ensuring we keep our employees

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VEC Webinar: An Info-Packed Hour on Reliability, Clean Energy, EVs, Cybersecurity and More

VEC's CEO Rebecca Towne and Innovation and Technology Leader Cyril Brunner tackled a range of subjects on VEC's recent live webinar entitled VEC and the Modern Electric Grid: "What You Need to Know."

The questions from members and other stakeholder participants focused on power supply, system resilience, flexible load, the future of the grid and more. (See below for a sampling of questions and summaries of answers.) The full recording that includes all the details can be found on the home page of our website at vermontelectric.coop (scroll down to the "What's New" section.)

How is VEC moving into the future?

By continuing to deliver safe, reliable cost-effective power to members as we transition into a clean energy world. We are now 100 percent carbon free on an annual basis, and our goal is to be 100 percent renewable on an annual basis by 2030. And we have to do this equitably, so all members, no matter their financial circumstances, benefit from this transition.

Are more and more people generating their own power and deciding to disconnect from the grid?

Yes, members are interested in generating power – and they can do so through net metering but also through VEC's very convenient Co-op Community Solar. And – we are not seeing people leave the grid.

What's VEC doing to assure the system is secure?

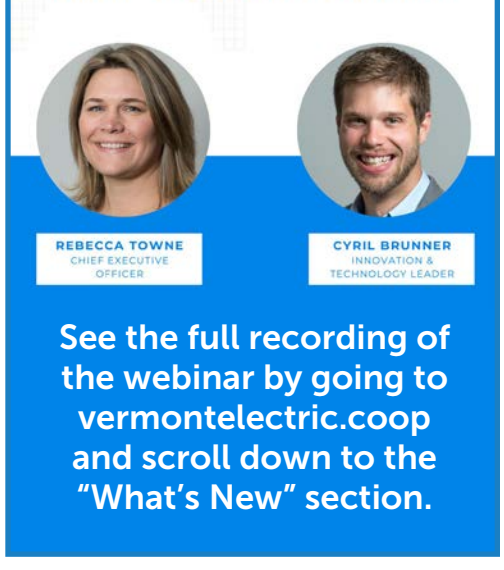
Quite a bit; it's a very high priority of course. It's both physical, to support our substations and other infrastructure - and technical, to protect the technology we use to control the flow of power.

What is VEC doing to improve reliability?

Tree trimming, upgrading and undergrounding wire, and more. It is a long-term project that takes time and investment. But we have proof that what we are doing is making our system more resilient.

What will the electricity system look like in three years? How about five years?

Three years? Maybe not too much different. Five years? We expect much more demand for electricity, and lots of new technologies on the market. As a distribution utility our job is to monitor these developments and adopt those that will be benefit our membership as we deliver on our core mission. We're optimistic about the future!



Several Recent Recipients of VEC Community Fund Grants

Generous members of the Vermont Electric Co-op who have chosen to support the VEC Community Fund continue to direct thousands of dollars a year into local non-profits in our region.

One of the recent Community Fund awards went to the Abenaki Nation of Missisquoi Food Pantry in Swanton. The $1,000 donation will help the food pantry purchase cereal as well as fresh fruits and vegetables for the roughly 500 clients the food pantry serves per month.

Noting that the food pantry serves Abenaki and non-Abenaki alike, Debbie Lavoie, the coordinator, recently expressed her appreciation to the VEC fund.

"Thanks to the kind donations like these, we are able to continue our mission in the fight against food insecurity in our community and surrounding communities."

Another grant went to the Montgomery Center for the Arts to renovate their historic building.

The MCA has been working on the restoration since 2021, and is finally seeing the final phase of the project come to life with the repainting of the exterior of the building and the restoration of the historic windows.

"It is thanks to the support of the community and the generosity of companies like VEC that this work was able to be completed," said Suzanne Dollois, Treasurer of the MCA.

"The success of this project signifies the preservation of this historic building for the future as an asset to Montgomery, and we look forward to all the events, classes, and community involvement to keep the space alive and vibrant, as well as the continued work by the Board to further restore and improve the building for greater long-term access and use," she said. "Thank you VEC for your support of our efforts."

Since it made its first donation in 2015, the VEC Community Fund has sent just over $110,000 to some 140 non-profit organizations in the VEC region. The fund is supported by about 2,500 co-op members who voluntarily round up their electric bills to the nearest dollar, donate their member capital, or make one-time donations. The funds are entirely separate from money collected by VEC from electricity sales.

Above, Abenaki Nation of Missisquoi Food Pantry recently received a $1,000 grant from the VEC Community Fund. Members of the food pantry team are: front row, from left to right, Ann Lampman, Pat Martelle, Ruth Mansure, Brian Barratt. Back row: Shannon Mansur. Photo courtesy Abenaki Nation of Missisquoi Food Pantry. Below, The Montgomery Center for the Arts received $1,000 from the Community Fund for restorations to their building. Courtesy photos.

> "Thanks to the support of the community and the generosity of companies like VEC this work was able to be completed."
>
> *Suzanne Dollois*

VEC at Women Can Do

VEC participated recently in the Vermont Works for Women annual signature career conference, Women Can Do. Every year, hundreds of students attend Women Can Do to meet local employers, learn to use a variety of tools and equipment, and expand their sense of what's possible in education and career pathways, exposing women to career fields not traditionally considered women's careers. From the Action Expo to the Resource Hall, every part of Women Can Do is about supporting girls in stepping outside their comfort zones, taking positive risks, and feeling confident in making decisions about their futures, according to Vermont Works for Women. Here, VEC Lineworker First Class Jacob Pecor talks with some event participants.

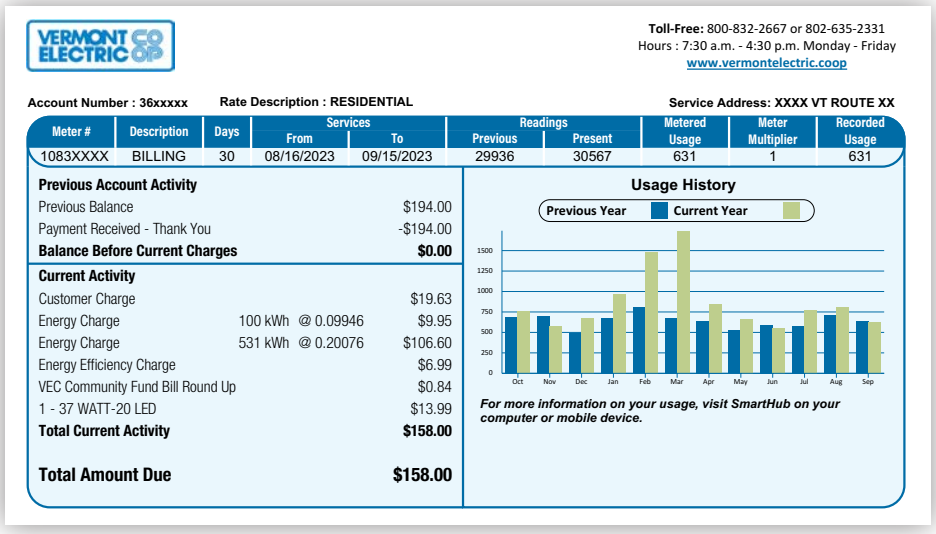
Help us Keep You up to Date!

From time to time, VEC has to temporarily shut off the power for a short time in certain areas in order to safely repair or upgrade our system. When we do that, we send an automated phone call and email to affected members ahead of time, alerting them to the start time and expected duration of the interruption. If you have recently changed phone numbers or emails, or have moved to cellphone only, please contact us and let us know the best ways to reach you for this purpose. You can email support@vermontelectric.coop or you can update the information by logging into your SmartHub account either on the web or through the app. Thank you!

All About the VEC Electric Bill

From time to time we get questions from members who want to know what the individual line item charges are on their electric bill. Here is an explanation of charges.

- **The Customer Charge** is a base charge for having a meter at your property that is connected and capable of using power. This charge supports operation of the electric system.
- **The Energy Charge** is the charge for the electricity you've used during the previous month. The top number is the charge for the first 100 kWh you used that month. The second number is the charge for any usage beyond the first 100 kWh.
- **The Energy Efficiency Charge** is the charge, which is based on a percentage of usage, that supports Efficiency Vermont's programs like rebates and incentives for efficient appliances, building materials, lighting, and other equipment. VEC, as well as the state's other utilities, collects this fee for the efficiency utility.
- **VEC Community Fund Bill Round Up** is the charge members can voluntarily have assessed to support the VEC Community Fund. This fund provides grants to local non-profits in the VEC region. (If you don't already support the fund, you can find our more info here: https://vermontelectric.coop/community-fund)
- **1-37 WATT- 20 LED** is a charge on some bills. A small minority of members have a VEC streetlight on their property designed to light up their dooryard or driveway, for example. (These are distinct from municipal street lights.) Members who have a light such as this pay a usage fee for the electricity that light uses.



VERMONT ELECTRIC CO-OP

Toll-Free: 800-832-2667 or 802-635-2331
Hours : 7:30 a.m. - 4:30 p.m. Monday - Friday
www.vermontelectric.coop

Account Number : 36xxxxx **Rate Description : RESIDENTIAL** **Service Address: XXXX VT ROUTE XX**

Meter #	Description	Days	Services From	Services To	Readings Previous	Readings Present	Metered Usage	Meter Multiplier	Recorded Usage
1083XXXX	BILLING	30	08/16/2023	09/15/2023	29936	30567	631	1	631

Previous Account Activity		
Previous Balance		$194.00
Payment Received - Thank You		-$194.00
Balance Before Current Charges		**$0.00**
Current Activity		
Customer Charge		$19.63
Energy Charge	100 kWh @ 0.09946	$9.95
Energy Charge	531 kWh @ 0.20076	$106.60
Energy Efficiency Charge		$6.99
VEC Community Fund Bill Round Up		$0.84
1 - 37 WATT-20 LED		$13.99
Total Current Activity		**$158.00**
Total Amount Due		**$158.00**

Usage History

For more information on your usage, visit SmartHub on your computer or mobile device.

Add Predictability with Budget Billing

If you are interested in adding certainty to your monthly finances, you might consider choosing budget billing for your VEC electric bill. This allows you to spread your projected electric bill payments over a 12-month period. Under budget billing, VEC calculates members' individual monthly payments amount based on the average of your previous 12 months' bills. In the first budget year, VEC reviews the member's account part way through the year to ensure that projected usage is in line with actual usage and adjusts the monthly budget amount if necessary. At the end of the plan year, VEC reconciles the member's account. You can opt out any time. To learn more or enroll, please contact Member Services at 802-635-2331. And, you can learn more about all of VEC's payment options here: https://vermontelectric.coop/payment-options.

Avoiding Usage Surprises

Here are Some Tips for Locating Culprits this Winter

Most people's electric bills fluctuate during the course of the year – and winter can be one of the higher use times of year. To avoid high usage as we head into winter, keep in mind the following:

Electric heating/space heaters. Depending on how high it's set and how long it runs, electric resistance heating systems can use a lot of electricity. And space heaters can cause unexpected increases in usage. You can set thermostats and timers to help keep heat running only when needed.

Water heaters. If you have an electric water heater, usage can increase if you use an unusual amount of hot water over a given period. Houseguests – which increase the number of showers and laundry loads for example – can kick usage up. Simple strategies to reduce the amount of hot water needed can be quite effective, such as using cold-water wash cycles in the laundry, taking showers instead of baths, using the dishwasher instead of running water from the faucet, and installing low-flow showerheads and aerators.

Electric heat tapes. During periods of extended cold weather, heat tapes around pipes, under mobile homes, and in other places can increase usage. Engine block heaters for tractors and trucks can also increase usage during frigid weather. Always select devices with thermostats, or install a timer to limit unnecessary run times.

Livestock/animal care. Livestock water anti-freeze systems, heat lamps for chickens, and even indoor fish tanks, especially if they are in a cold room, can all increase usage.

Winter = more time at home. One of the other drivers of higher usage in the winter is simple, but often overlooked: we spend more time inside. When we do, we often use more power. Lighting, entertainment systems, holiday-related cooking, laundry and water heating, all can add up. And, even if you don't use electric heat, simply moving heat with fans and circulators – whether that heat is generated by an oil or propane system or pellet or wood stoves – takes electricity.

SmartHub: Information is Power

Your best defense against receiving an unexpectedly high electric bill is to monitor your usage on-line using the SmartHub platform. With SmartHub you can view monthly, daily and hourly usage, and even set up text or email alerts when usage is higher than normal. You can also pay your bill, get outage notifications, and more. If you have not signed up for VEC's online portal SmartHub, now might be a good time. We've produced a simple sign-up step-by-step video you can find here: www.vermontelectric.coop/smarthub. (You'll need your account number handy.)

Here are the steps to sign up:

- Go to our website, vermontelectric.coop
- At the bottom left, click on the blue "My Account" box
- A green box will pop up. At the bottom, click on the text "New User? Sign up to access our self-service site."
- Fill in your account number.
- Enter your last name or business name
- Enter the email address for the account
- Click "submit."
- Select a security question, and type in the answer.
- Click "submit."
- You'll see a notification that a password reset link was sent to your email.
- Open that email and click "verify account."
- Choose a password, and type it in.
- Click "submit"

This will take you to your SmartHub portal – you have successfully signed up!

If you need help or want to learn more about the features of SmartHub, please don't hesitate to call Member Services as 802-635-2331.

When Equipment Isn't Working Right

Sometimes an appliance that that keeps running because it's not working properly can cause high usage. Common culprits are well pumps, septic pumps and water heaters. What about my electric meter? Could that the problem? Nowadays, utility electric meters are extremely accurate. Members do have the right to get their meter tested once a year. In the vast majority of cases, however, a meter test shows the meter is working properly and higher usage is the result of the activities outlined above.

Are You Ready for the Next Power Outage?

A VEC lineworker approaches a line during Winter Storm Bruce in 2018.

Despite VEC's ongoing efforts to minimize outages, storms that knock out power are a fact of life. Below are a few steps you can take before a storm hits to allow you and your family to weather possible outages more comfortably:

Build/restock an emergency kit. This kit should include at a minimum: flashlight(s) or headlamp(s); extra batteries; first aid kit; manual can opener; bottled water; non-perishable food. Additional items could include a radio (battery powered or hand crank); sets of warm clothing and sleeping bags and/or blankets; toiletries including towelettes/wipes, hand sanitizer, diapers and prescription medications.

Plan for medical needs/devices. If someone in your home is dependent on electric-powered medical equipment, make sure you have a battery backup or make alternative arrangements to ensure their needs are met.

Stock water. Before a storm arrives, fill a bathtub if you have one, so you have water to flush the toilet. (Avoid unsupervised bathroom access to children). Fill large containers for drinking water or buy bottled water.

Charge devices and fuel vehicles. Be sure cell phones, computers and tablets are charged and vehicles are full of fuel.

Watch the forecast. Keep updated with storm alerts and news from the National Weather Service.

Stay informed. Get updates on outages and estimated times of restoration on VEC's Outage Center as well as on VEC's Facebook and Twitter feeds. Radio and television stations may offer general outage information as well.

Keep your distance from downed power lines outside. Always assume every line is energized and dangerous. If you're in a vehicle and downed wires are on the car or across the road, stay in your car until emergency crews arrive. Don't touch anything that might be in contact with a downed line.

Locate a shelter. If your home becomes unsafe or you need resources during a major storm or during longer term outages, dial 2-1-1 to find the closest shelter in your area.

Check on elderly neighbors and relatives. Be sure they are safe, warm and secure.

Stay off roads. Eliminate unnecessary travel. Traffic lights may be out, and roads may be congested and they may have downed lines and trees on them.

Use generators and stoves safely. Never use a generator, grill, camp stove or other gasoline, propane, natural gas or charcoal-burning devices inside a home, garage, basement, crawlspace or any partially enclosed area.

Prepare for the surge when the power comes back on. To avoid damaging equipment when the power comes back on, turn off or disconnect any appliances, equipment or electronics you were using when the power went out, with the exception of one light. (This will help you know when the power comes back on.) When the power comes back on in your home, it doesn't necessarily mean all repairs in your area have been made. Remain vigilant for and stay away from any downed lines or trees in your area.

Take care of your food. For detailed instructions on keeping food safe during outages visit the www.foodsafety.gov.

Slippery Winter Roads Can Mean Car-Pole Accidents

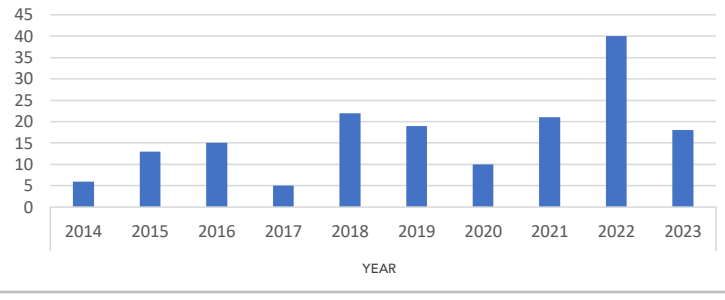
Snow and ice season is upon us. That often means slippery roads.

Besides posing the risk of property damage, injury or even death, traffic accidents in our territory – no matter what time of year they take place – can knock the power out to significant numbers of VEC members if vehicles collide with utility poles or other utility equipment. Depending on the amount of equipment repair necessary and the location of the collisions, these "car-pole" accidents can cause power outages of several hours to hundreds of members.

For instance, early on December 31, 2022, a car-pole accident in Newport (see photo) knocked power out to about 360 members for 12 hours and 39 minutes.

"Our request to VEC members and the driving public is this: Please drive to conditions by slowing down in bad weather and increasing your braking distance - and always keep a sharp eye out for hazards," says Peter Rossi, VEC's Chief Operating Officer. "Fewer accidents on the roads is a good thing, and fewer collisions with utility equipment in particular means we can do a better job keeping the lights on for our members."

Number of Car-Pole Accidents in VEC Territory by Year
(2023 numbers as of Oct 31)



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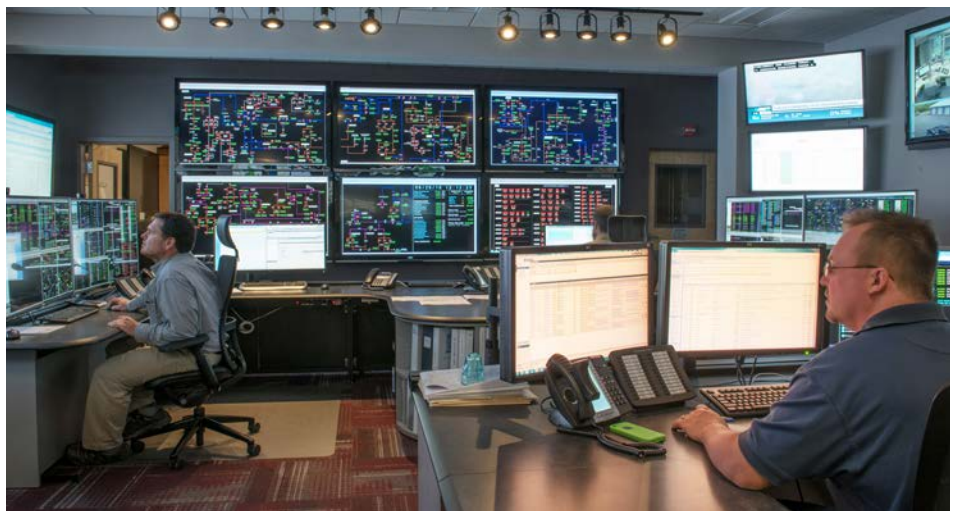
VEC Control Center: On for Members, 24/7/365

VEC's Control Center is the hub of all of the co-op's system operations. The center, which can be operated from VEC headquarters in Johnson or its Newport facility, runs all day every day to assure smooth delivery of electricity all the way from power sources through transmission and distribution networks to members' homes and businesses.

Scott Rockwood, Chief System Operator (at far right in photo), took a few questions recently about the Control Center and the System Operators who run it.



What exactly do System Operators do?

Our System Operators do a range of things, some of which you might say fall into the "monitoring" category and others you might call "response."

Can you explain what you mean?

Their monitoring role includes watching carefully to be sure the voltage and usage across the system is smooth and usable for our members. They monitor the power flows on all of VEC's transmission and distribution facilities, including interconnection points with neighboring utilities such as Hydro-Quebec – all to assure that the power VEC delivers is safe and of high quality when it arrives at members' homes or businesses. Operators also monitor the co-op's 41 substations and primary metering points to be sure they are working as intended. They also keep an eye on the technology and systems that are designed to protect the co-op's physical infrastructure and our cyber security systems. Finally, the Control Center helps monitor incoming weather threats, so the co-op can prepare well ahead of time for storms.

What about their "response" role?

Unplanned outages is our main concern. These power outages can be caused by storms – whether wind, heavy snow, soaked ground, sometimes a combination of all three. Other times outages are caused when motorists collide with utility poles – we call them "car-pole accidents." There can also be interference with our system from animals like squirrels or birds that cause outages.

Whatever the cause is, when the power goes out, operators can dispatch crews to outage areas and coordinate restoration efforts and remain in contact with crews as they work to assure safety. Many times during outages, operators have to re-route the flow of power across the VEC grid in order to keep electricity flowing for members. We are lucky that VEC has a direct tie to the Canadian power system (Hydro-Quebec) so that if we have an outage in a certain area, we can draw directly from their grid until we fix our own system. We are the only Vermont utility with this direct tie.

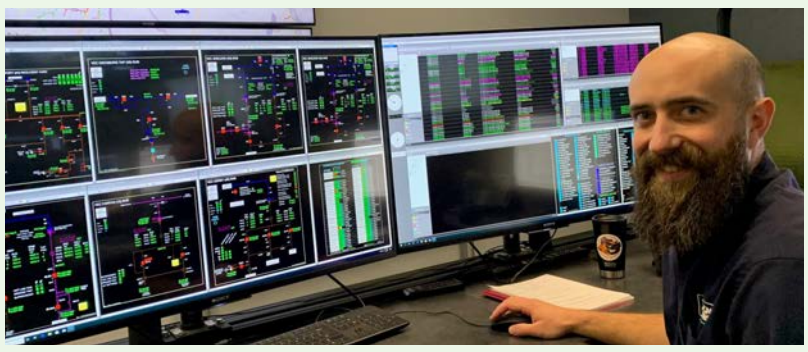
What else do System Operators manage?

For planned outages – when we have to make repairs or do upgrades to the system, they transfer loads so that crews can work safely and we minimize outages for members. They work with the New England grid operators to assure there is enough power for the region during emergencies, log and track the presence of crews working on the system, whether they are VEC employees, contractors, or crews from other utilities, and more.

System Operators frequently get off-hour calls regarding structure fires that have cut the power from a home or business. They get calls from members who are reporting outages, or other potentially dangerous situations like trees on a line, or a downed power line, which requires them to de-energize circuits, if needed. Generally speaking we have two operators working during the day, and one during the night.

What types of skills are needed for this sort of role?

A must is attention to detail. Good, clear communications skills are critical. People who have dispatching experience and/or a strong understanding of electricity can be good System Operators. You need to be able to prioritize, think on your feet, and respond quickly during emergencies. You have to be able to manage high-stress situations and be able to handle what comes at you. System Operators need to be precise. Everything is done according to a set procedure. Finally, being able to work and collaborate as a team is an important skill in this work.



Day and Night, Holidays and Weekends

VEC's System Operators work in 12-hour shifts that cover every hour of every day every year.

"All of us at VEC, and our members, owe these hard-working people a debt of gratitude for working day-in-and-in-day out including holidays and weekends, to keep the power safely and reliably flowing," said Scott Rockwood, Chief System Operator.

VEC's other System Operators are, in alphabetical order:

- Alex Baron (photo at lower left)
- Craig Jewett
- Julianne Jones
- Melanie Messier (upper left photo)
- Brian Sylvester

CEO UPDATE *Continued from page 1*

and members safe, meet all regulatory requirements, and provide excellent electric service to our members.

Next Steps

The VEC Board approved the rate request on October 31 and now the Public Utility Commission will review the rating filing with input from the Public Service Department. VEC will provide the latest information on the VEC website and you can always contact us if you would like more information or updates.

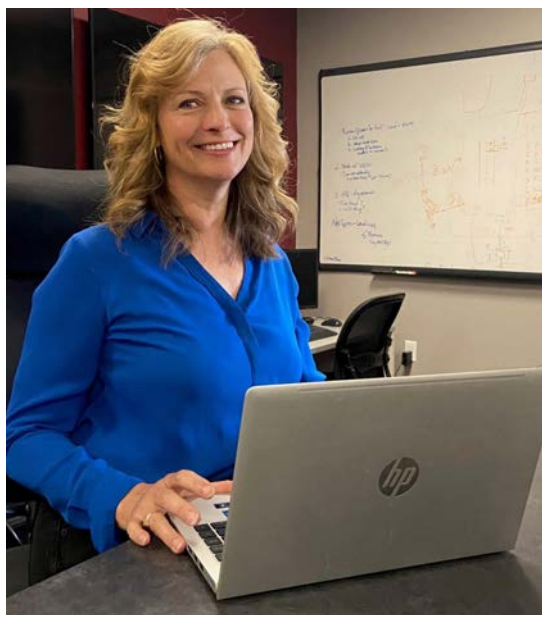
In Other News

In this issue of Co-op Life, check out our feature on VEC Control Center operations. Our system operators work 24-7, 365 days-a-year to keep our complex grid running and to safely integrate all the new distributed generation on the VEC system. If you are interested in learning more about the future of the energy grid and how VEC is tackling these challenges, see the story on our recent VEC webinar where I discuss these issues and answer member questions with Cyril Brunner, VEC's Innovation and Technology Leader.

Also, as we head into the holiday season, we encourage our members to consider contributing to the VEC Community Fund and also letting local non-profits know about the availability of funding. Read about some of the recent grant awards including one to a food pantry run by the Abenaki Nation of Missisquoi Food Shelf and one to Montgomery Center for the Arts for renovation of their historic building.

Above all, please know VEC remains committed to our member-owners and we take pride in providing high quality and cost-effective service. If you have any questions or concerns, please be in touch.

Four Simple Steps for Strong Cybersecurity



Hi! Belinda Gunnell, VEC's Innovation and Technology Coach here. Here's a quick reminder of four simple but important cybersecurity practices that can help keep you, and your household, more cyber-secure.

Use strong passwords and a password manager.

Choose long, random, unique letters or phrases including all character types (uppercase, lowercase, numbers, and symbols). And set up a password manager - it's a powerful tool that makes it easier for you to create strong passwords.

Turn on multifactor authentication (MFA).

MFA is a second security step designed to be sure you are who you are after you log in using your username and password. Enable MFA on all your online accounts that offer it, especially email, social media, and financial accounts. Use authentication apps or hardware tokens for added security.

Recognize and report phishing emails, texts, and calls.

Be cautious of unsolicited messages. If you are inclined to respond, always verify the authenticity of requests by contacting the individual or organization through a different, trusted communications channel.

Ensure your software is updated.

Do software updates when necessary. When available, turn on automatic updates to keep operating systems and applications up-to-date.

Solar Power For People, Not Profit.

Vermont Electric Cooperative is member-owned and committed to the best interests of our members and their communities. This is why we developed VEC Co-op Community Solar—an easy and efficient way for all VEC members to get great value while supporting clean electricity.

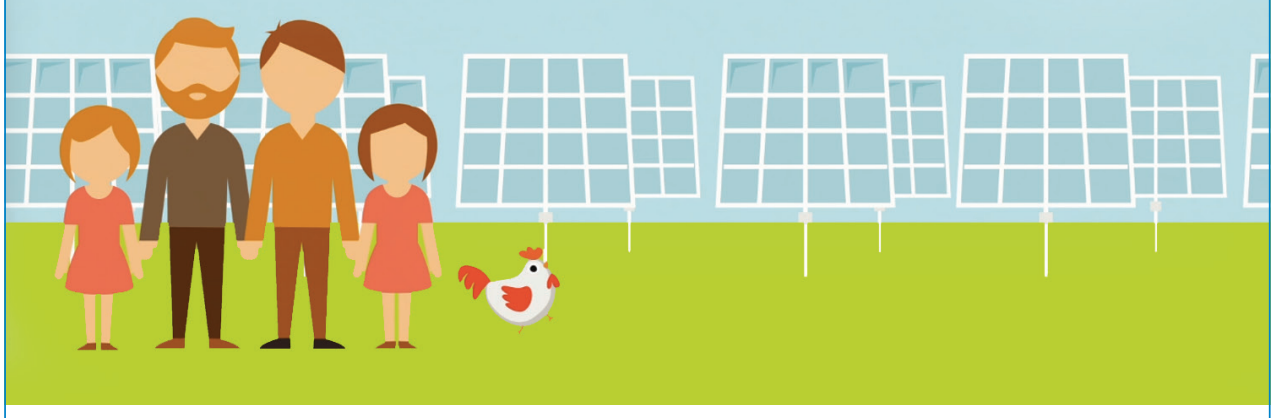
VEC Co-op Community Solar is perfect for folks renting their home and for houses with a shady site or unsuitable roof.

Members simply make a one-time upfront payment (starting at just $100) to sponsor a portion of the solar array and receive a guaranteed fixed monthly credit on their electric bill.

Participants can opt out at any time for any reason, and get back a prorated portion of their sponsorship. Ten and twenty year terms are available and so is affordable financing.

With one project up and running in Alburgh, and two projects in development in Grand Isle and Hinesburg, now is a good time to support solar with VEC Co-op Community Solar.

For more information, visit vermontelectric.coop/solar or call 1-800-832-2667.



VEC COOP COMMUNITY SOLAR

Headquartered in Johnson, Vermont Electric Cooperative serves 32,000 members, 2,882 miles of distribution line, 2,056 square miles of territory, and 75 communities in eight counties.

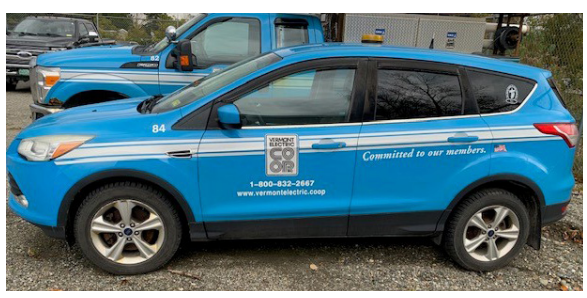
VEC Has Vehicles for Sale

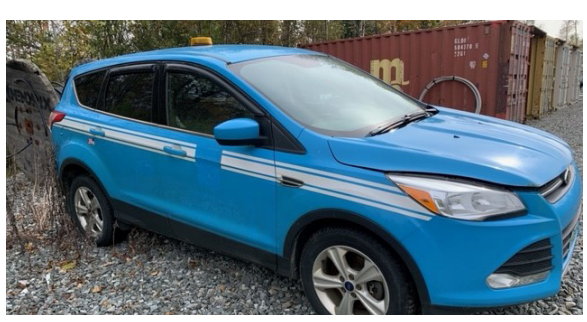
VEC is selling two used 2014 Ford Escapes by sealed bid.

Both of the Escapes have some rust and mechanical issues. One of them, known at VEC as Escape #83 (Vin #40875) has over 212,000 miles on it. For information about this vehicle, which is located at VEC's Newport facility, please contact Alex Russell at 802-730-1220.

The second, Escape #84, (Vin# 63674) has over 164,000 miles and is located at VEC's Johnson Warehouse. For information on this Escape, please contact Joe Genest at 802-730-1144.

Bids for the vehicles need to be received by 3 pm, Friday, December 1, 2023 and should be mailed to Vermont Electric Cooperative, 42 Wescom Road, Johnson, Vermont 05656, attention Amanda Cochran.





Efficiency Vermont

Boosting resilience in your home in the wake of floods and other climate hazards

Flooding in Vermont in the summer of 2023 damaged hundreds of homes. Thousands are working to rebuild. Along with more frequent ice storms, higher temperatures, and other extreme weather, many more are thinking about the future.

Our changing climate means warmer air. Warmer air holds more water vapor than cooler air. That's one reason why 2023 was Vermont's rainiest summer in 75 years. Some flood-hit Vermonters are replacing heating systems and appliances in flooded basements. Others are repairing entire floors or even whole buildings. And still others are helping friends, family, and neighbors recover.

No matter how recent floods affected you, there's growing interest in making homes more resilient. That means preparing homes to handle a changing climate better. Improving resilience can make your home warmer and more efficient in Vermont's northern climate. It can also include upgrading or moving your home's heating, ventilation, and electrical systems to better withstand flooding. The goal is to improve your home so it's "hardened" against future floods and other climate challenges.

Take steps now to prepare your home for weather events, floods, and blackouts

Vermont's cold winters—and old housing stock—make for a chilling combination. Many homes can easily become more resilient through weatherization. Insulating and air sealing your home can reduce energy use, increase safety, and improve comfort. Better airflow in your home can protect against mold, pests, and drafts. And if a blackout happens, you can safely stay in a well-weatherized home longer. (And that home can better resist hazards like frozen pipes for a greater period of time.)

"Air sealing is probably the thing that's going to affect you the most, in terms of comfort," said Li Ling Young, an energy expert with Efficiency Vermont. "Air sealing is what's going to make it possible to control the temperature, the humidity, and indoor air quality of your home."

You should also make sure your home has a good "hat." That means air sealing and insulating the top of your home. This is important whether you have a flat ceiling (with an attic above), or a sloped ceiling that follows the roof. Air sealing helps keep warm air in, and prevents moisture from finding its way to the roof deck. This can extend the life of your roof. It also improves the comfort of everyone inside. If your heating equipment vents through a chimney, like a woodstove or older furnace or boiler, a well-sealed attic can even improve safety through good chimney draft.

The "boots" of your home—the basement—is another area to improve air sealing and insulation. Close up holes and cracks between the underside of the floor and the top of the foundation wall. Make sure any basement windows and bulkhead doors are sturdy and well-sealed. Someday that could keep flood waters out of your house.

Invest in upgrades to boost your home's resilience

Upgrading your home heating and hot water systems to use less energy is another way to add resilience. It's also an opportunity to move those systems out of reach from future floods.

"After this summer's floods, we heard about a lot of damage to mechanical systems located in the lowest part of the building," said Efficiency Vermont energy expert Matt Sharpe. He found equipment like oil furnaces, natural gas burners, and fuel oil tanks "were inundated when basements were flooded."

Getting these systems out of the basement may be possible. Boilers, furnaces, and hot water heaters that are "sealed combustion systems" can be moved higher in your home. That's because they can safely vent directly through sidewalls. There are also "combi" boilers. They can heat your home and provide hot water without a large tank. These units can be wall-hung high off the floor, or even placed in a small closet. If moving systems out of the basement isn't possible, moving them off the floor may be an option. Hot air furnaces, for example, can be hung from a basement ceiling. This won't require moving the furnace to a new location. And it can bring down costs and challenges around finding enough space. But moving fuel-based systems isn't feasible for every home. Consult an electrician and a heating contractor about what's possible.

If your heating system has been damaged, or you're just ready for a replacement, heating with cold-climate heat pumps is another solution. Heat pumps are electric, so there's no fuel to burn or store. Ductless heat pumps—sometimes called mini-splits—don't have any basement components. They can be hung on walls in rooms to provide heating to the whole home, or to an area of a home. Another type of heat pump, ducted heat pumps, can work with your home's existing ductwork to provide central heating. The outside component of heat pumps can be installed on a raised stand or mounted on an outside wall to keep it out of harm's way.

If your home is well-insulated and air-sealed, heat pumps can usually meet most of your heating needs. But a supplemental or "backup" heat source is always a good idea. Wood stoves, or more advanced pellet furnaces and boilers, are one option. New models are more efficient and cleaner than ever. And using local, reliable, and low-cost wood or wood pellets for fuel make them a resilient option.

Getting your water heater out of the basement may be the biggest challenge to making your home resilient to flooding. Most water heaters take up a lot of space. Moving one can also be expensive, because it involves relocating a lot of plumbing work. For some homes, an insulated space for a water heater can be made in a mudroom, a breezeway, or even an attic. If you decide to move or upgrade your water heater, heat pump water heaters will save the most energy. Just remember to make sure there's enough space to disperse the cool air that comes off a heat pump water heater.

Tankless, "on-demand" water heaters may also be an option. There are electric, natural gas, or propane-powered options. They take up the least amount of space and are ideal for locating somewhere in your home other than your basement. However, gas-powered tankless heaters have to be vented. The limited output of tankless water heaters may also be a barrier for larger households.

No matter what kind of heating or hot water system you have, there's one more piece to the resilience puzzle: your electric panel. Moving the panel out of flood-prone areas helps ensure it won't get submerged. And moving your panel is also a chance to upgrade it. An upgraded panel can accommodate more electric appliances in the future. That can include electric clothes dryers, cookstoves, and heat pumps. It can also make room for adding a home electric vehicle charger in the future.

Long-term solutions

Solar panels can generate the electricity you need to power your home. Excess electricity usually goes right into the grid. Or it can be stored for when you need it most in a home battery backup system. In the not-too-distant future, that solar energy could also go directly to charging an electric vehicle. In the event of a blackout, that home battery could run your home for hours or days, depending on how efficient your home is. Some utilities will even pay you to use the energy in your battery to meet peaks in energy demand. That means your battery can help your neighbors by adding power to the grid.

As electric vehicles become more common, their large batteries could one day be plugged right into your home. That would send power to your lights and appliances—instead of the car's motor. Carmakers like Ford already offer systems that can turn EVs into a home battery back-up to power your house during blackouts.

Combined with solar panels, you could one day power your home, your car, and your home battery with solar energy. And with powerful storms more likely due to climate change, that kind of resilience can keep your lights on, your car charged, and send stored energy to support the electric grid. That's as resilient as it gets.

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