



www.washingtonelectric.coop

CO-OP CURRENTS

Vol. 77, No. 1

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

January 2016

Moving Power Lines Across An Owned, Regulated Landscape

We live upon a shared countryside, in an environment we all affect and which affects all of us. It's an environment that we use and enjoy, and which all, or at least most, of us want to protect. That's why there are zoning laws in many of our towns, and why, in towns where there aren't, state regulations like Act 250 provide similar protections. Beyond that, there are environmental permits protecting wetlands, and town and state roadway permits that govern what individuals, businesses, and even the towns themselves can do to the road and the land beside it.

And, finally, there's private property. Eighty-one percent of Vermont's land is in private ownership – one of the highest percentages of all the U.S. states. The percentage is certainly higher in central Vermont, because the large publicly owned tracts, such as the Green Mountain National Forest and the Missisquoi National Wildlife Refuge, are elsewhere. Private-property owners have tremendous power over what can and cannot take place upon their land.

Into this complex environment – meaning the legal environment and the time-honored cultural environment that puts a premium on people's domain over their property,

and the physical environment, too – comes Washington Electric Cooperative, looking for places to put its power poles. Sometimes the Co-op needs a little extra space for guy wires and anchors to brace certain poles against the pressure that occurs when the power line curves along a road or a bend in the right-of-way (ROW) through a forest or field. A pole on the opposite side of the road may even be needed, connected to the main pole by a taut overhead wire, to counter that stress and keep the system from being tugged in one direction until it teeters.

Relocations closer to the road are WEC's official policy. What worked in 1945 doesn't work as well today.

Co-op members might figure that all this pole-placement work has long since been accomplished by Washington Electric. WEC was founded in 1939, and its busy buildout to serve rural areas in Washington, Orange, and Caledonia counties took place in the early '40s.

The trouble is, says Utility Field Technician Mike Patterson, a longtime member of WEC's engineering department, "After a while, everything gets old."

WEC's engineers – Mike Patterson, Brian Wilkin, and Steve Hart – are the people who design the power-distribution system, which has grown to more than 1,250 miles long.

continued on page 4



Co-op Utility Technician Mike Patterson contemplates the recently completed renovation of a forest-bound right-of-way, and modernization of the electric-distribution system, in Walden. Mike sought to negotiate an alternative route with neighboring landowners; when that didn't work out he and WEC's line workers upgraded the system "in place," to provide a new level of reliability for local members.

Net Metering Countdown To 2017

WEC and Other Players Weigh In on Proposed PSB Rules

Net metering was introduced in Vermont in 1997, and in the years since then the program has undergone continuous refinement. Changes, largely performed by or at the behest of the state Legislature, have sought to attract more and more homeowners and business owners to the idea of generating power on their own property – mostly with rooftop solar arrays – and contributing kilowatt-hours of that "green" energy beyond what they use themselves to the electric grid. Net metering helps stimulate Vermont's renewable-energy sector – a growth area in the state's economy – and combats climate change by replacing fossil fuel-generated power with

green, renewable power.

People with net metered energy systems receive credits for the power they contribute to the grid; those credits offset money they would otherwise pay to their utilities for power they did draw from the grid.

With those social and environmental objectives in mind, the Legislature over the years has invited net meterers to apply their credits not just to their energy costs but to any charges on their electric bills; now, some people with productive systems often pay no power bill at all. And in a rule enacted in 2014 in response to the Legislature, the state Public Service Board (PSB) increased

continued on page 6

Washington Electric Cooperative

East Montpelier, VT 05651



Inside

The call is out for Board candidates, but time is getting short. For potential candidates, information and deadlines can be found on page 8.

Lighting advice from Efficiency Vermont. In this issue we carry EVT's "Ask The Home Team" feature, guiding you through options for modern, energy-efficient bulbs. Page 3.

Money matters. WEC's president "unpacks" the relative impacts on Co-op members of rate increases, capital credit distributions, and net metering fees. Page 2.

PSB proposes carrots rather than sticks to make siting decisions more palatable for renewable energy projects. Page 6.



Line maintenance and outage repairs are accomplished more quickly, economically, and safely when the poles and wires are accessible from the road, as in this location (above) in Marshfield. Stories in this issue address the promise, and the problems, associated with that goal. Pages 1 and 4.

President's Message

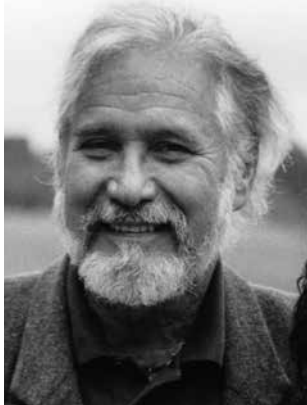
A 'Wintry Mix' Of Messages

Setting the Record Straight on Net Metering and Co-op Costs; And News From the Co-op Community

By Barry Bernstein

It's the start of a new year and we're now experiencing winter. It is amazing how long the autumn/summer lasted, well into December, with 60-degree F weather. Our Co-op was fortunate in 2015 to avoid any major storm expenses, especially after coming off the December 2014 storm, called Damon, which was the most costly in WEC's history. We did have to devote resources in 2015 to continuing the extensive cleanup necessitated by that 2014 storm.

I wish to thank our employees who



worked on Christmas Eve and Christmas Day to make sure that our WEC members who lost their power due to winds on Christmas Eve got their power back and could fully enjoy Christmas with their families. Of course, it meant that those employees lost much of the Christmas time with their own families, and while that is part of their jobs I want, very much, acknowledge their dedication and thank all of those who worked on behalf of our membership. And just as much, we all want to thank their families for their understanding.

Net Metering, And Money Matters

I want to address a few questions from members that have recently come to my attention. I received a letter from a WEC member concerning his understanding of our current net metering program – or at least as it had been explained by an employee of a large Vermont solar company. I also read a letter to the editor in *The Times Argus* from a Co-op member concerning past Washington Electric Co-op rate increases and recently proposed net metering rules from the Vermont Public Service Board. (See page 1 of this issue of *Co-op Currents* for more coverage of the PSB's proposed new rules).

First, let me say that WEC's net metering program is going well, with 333 kilowatts (kW) of production capacity either connected or approved for connection since July 2014 added to the 1,400 kW capacity that was installed prior to that date. This total of around 1,730 kW has brought us to 11 percent of our "peak" power requirement (percentage of peak power is the yardstick the PSB uses in its net metering requirements).

WEC has been strongly supportive of net metering from the start, and active in the program. We are also a winter-peaking utility, supplying our members' electricity needs with 100-percent renewable power. We generate and purchase power from several local sources, including the Coventry plant fueled by landfill methane and the Wrightsville hydroelectric plant, as well as Sheffield Wind, the Vermont small power producers group, and hydro from New York and Quebec. We are also active in the REC (renewable energy credit) market, both selling and purchasing RECs and meeting the 100-percent-renewable threshold.

Still, it's unfortunate that our members are not getting accurate information from one of the largest solar installers in Vermont, and I urge any WEC members who are considering installing net metering at their homes to give our "energy coach," Bill Powell, a call at the Co-op to get the facts on WEC's program. As members, we share in WEC's poles-and-wires infrastructure costs, which we all rely on to keep our power on 24/7, at about 13 cents-to-14 cents/kilowatt-hour.

Our rate increases over the past 16 years have totaled 25.49 percent. That's an average of 1.59 percent/year. Those rate increases did, however,

come during a four-year year period (2011-2014), after not having an increase at all for 11 years. The primary causes were a sudden major crash in the REC market and increases in regional transmission costs passed on to all New England electric utilities.

During that same 16 years your Co-op returned an average of approximately 1 percent per year to all current Washington Electric members, in the form of a capital credit return on your November electric bills. In total, WEC has returned more than four million dollars (\$4,863,983) to our members since we began the capital credit retirements in 1998.

The net effect on members' bills of the rate increases, balanced against capital credit returns, is a one-half (0.005) percent annual increase for all members during those 16 years – and less for those who received additional capital credit refunds because they were members during the period of 1939 to 1993. Noteworthy also is that, out of those annual capital credit returns since 2002, members have donated \$276,295 to the WEC Community Fund, which distributes more than \$20,000 each year to local social service and community groups.

Those of us who have been Co-op members for a long time are well aware that our system's reliability has improved exponentially over that time frame, and that we have, incrementally, divested ourselves of nuclear and fossil fuel power so that we are now 100-percent renewable.

Member News

I offer congratulations to two Co-op members: Wilmer Brandt, of Marshfield, who turned 96 this month and has consistently attended both our annual and community meetings; and Georgia Myers, of East Calais, who just retired after 16 years of actively supporting the Woodbury Food Shelf.

On a sadder note, I want to mention the recent death of a young and very talented Co-op member, Elizabeth Catlin, who took her own life. Betsy struggled with severe depression for many years, while still making significant contributions to our community. Her parents and family were so forthright in sharing Betsy's mental health struggle, in her obituary and during her memorial service, and speaking publicly to shed light on this important issue. Depression and mental illness touch many Co-op and Vermont families, but often it's kept in the dark. Winter can be a very difficult

continued on page 8

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., Route 14, P.O. Box 8, East Montpelier, Vermont 05651. The cost of this publication is \$.505, 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.

Board of Directors

President	BARRY BERNSTEIN (May 2016)	1237 Bliss Road, Marshfield, VT 05658 Bbearvt@myfairpoint.net	456-8843
Vice President	ROGER FOX (May 2018)	2067 Bayley-Hazen Rd., East Hardwick, VT 05836-9873 rfox@pivot.net	563-2321
Treasurer	DONALD DOUGLAS (May 2017)	21 Douglas Rd., East Orange, VT 05086 dondougla@gmail.com	439-5364
Secretary	ANNE REED (May 2016)	3941 Hollister Hill Rd., Marshfield, VT 05658 annereed48@gmail.com	454-1324
	ROY FOLSOM (May 2016)	2603 US Rt. 2, Cabot, VT 05647 RoyGrnsy@aol.com	426-3579
	STEPHEN KNOWLTON (May 2018)	160 White Rock Drive, #2, Montpelier, VT 05602 knowlsf@auburn.edu	223-2230
	DAVID MAGIDA (May 2017)	632 Center Road, Middlesex, VT 05602 vtmagida@aol.com	223-8672
	RICHARD RUBIN (May 2018)	3496 East Hill Rd., Plainfield, VT 05667 rrubin@sover.net	454-8542
	MARY JUST SKINNER (May 2017)	P.O. Box 412, Montpelier, VT 05601 mskinner@sover.net	223-7123
	PATTY RICHARDS General Manager patty.richards@washingtonelectric.coop	WILL LINDNER Editor Willind@sover.net	TIM NEWCOMB Layout

Editorial Committee

Patty Richards Donald Douglas David Magida Anne Reed Will Lindner

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 Deborah Brown, 802-223-5245.

This institution is an equal opportunity provider and employer. If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov.

Third-Party Payment Services: They are *not* WEC

Third-party bill-payment services are businesses that people can hire, as the name suggests, to handle their bill payments for them. This can apply to almost any kind of bill, including monthly utility bills, payments for trash-hauling services, regular medical bills, mortgage payments... the whole gamut. There are any number of reasons why people elect to use a bill-paying service; they may want to ensure that their bills will be paid on time while they're traveling; senior citizens, or their adult children, might contract with such a company to reliably handle payments for someone who has difficulty keeping track of their obligations.

Naturally, third-party payment companies charge a fee for their service.

But what's important for Washington Electric Co-op members to know is that WEC is not affiliated with any of these companies. *None of them.* The reason this needs to be stated is that

the Co-op has heard from members who have been surprised, confused, and possibly misled when they have visited the web sites of one or more of these services, entered Washington Electric Cooperative's name as one of the companies whose bills they wish to have paid, and then seen WEC's logo pop up on their computer screens.

This gives the appearance that the bill-paying service is affiliated with the Co-op – and, by implication, that the Co-op endorses its service.

This is not the case. Washington Electric has no relationship with any bill-paying entity. They operate on their own.

Because the web's reach is so universal, bill-paying providers can capture the logos of virtually any business on line. By flashing the logos on the screen, when prompted by a customer's entry of the company name, they seek, implicitly, to assure the potential customer, accurately or not, that they're accustomed to

making financial transactions with that company.


It's entirely legal for them to do this. And it seems that these services are pretty widespread. According to Wikipedia (admittedly, a questionable source, given that anyone can modify entries on this site), third-party billing "serves nearly 12 million households in the United States," providing "hundreds of millions of authorized transactions each year."

For Washington Electric Co-op members, the message from WEC is "buyer beware." A bill-paying service may be entirely legitimate and trustworthy, or it may not. WEC recommends that people investigate the companies as thoroughly as possible before contracting with them. And never provide credit card numbers, Social Security numbers, bank account numbers, or any other access to your finances on line, or at least until you are very certain of the company's legitimacy and the security

of its web connections.

Make no mistake about it. If you are dealing with any third-party bill-paying service, you are not dealing with Washington Electric Co-op. WEC invites its members to call (223-5245, or toll free 1-800-WEC-5245) if they have any questions.

And here's another suggestion. WEC members seeking a guaranteed way for their Co-op bills to be paid, temporarily or permanently, can sign up for WEC's Automatic Clearing House service, called ACH. This provides an automated transfer to WEC of the correct amount of money from a designated bank account. No third party need be involved, and you can terminate the service whenever you wish.

Call WEC and speak to a member services representative to find out how it works and to get started when, and if, you wish. 


Ask The Home Team A Feature Provided by Efficiency Vermont

Changing Your Thinking About Light Bulbs

Q. I went to the hardware store to buy a few new light bulbs for my house, and I was totally overwhelmed by the options. How do I know which one is right for me? I used to always go by Watts, but this doesn't seem to translate to some of the new options.

A. Picking the right bulb can definitely be confusing – with rapid advancements in lighting technology it is hard to keep up with all of the product options out there. When choosing a bulb that is right for you there are a few key things to consider:

- **Brightness.** You mention selecting bulbs by the number of Watts. That was the best way to pick the right *incandescent* bulbs, but with new, efficient bulb options it is all about lumens. Watts describe the power used, but Lumens are a measure of a bulb's brightness; the higher the number of Lumens, the brighter the bulb. If you're looking to replace a general 60-Watt bulb (thinking in terms of incandescents), look for a CFL or LED with 800 Lumens. To replace a 75-Watt bulb, go for 1100 Lumens. And for a 100-Watt bulb, choose one with 1700 Lumens. Keep in mind that the bulb needs to be right for the fixture you are using; what's right for a floor lamp may not be the correct choice for your ceiling fan.
- **Color.** This choice is entirely based on your preference. Depending on where you plan to put your new bulb, you may decide you'd like it to have a warm, or a cool, glow. The "light appearance" of the bulb is measured in Kelvins (K). The higher the number of Kelvins, the cooler the light. For something that looks like your old incandescent you should look for a bulb in the 2700K to 3000K range; for cooler light go for a bulb in the 4100K to 5000K range.
- **Cost.** In Vermont you can get an efficient bulb that requires just a small amount of electricity to power, for a relatively low price. ENERGY STAR CFLs start at \$0.99 and ENERGY STAR LEDs start at \$4.99. In addition to the point-of-purchase price you're willing to pay for the bulb, you should also keep in mind the length of the bulb's life and the cost of powering it over time. Generally speaking, LEDs cost the least to operate and they last the longest, making them a worthwhile investment.

If you forget the exact number of Kelvins you want, or if you aren't sure how to determine how long the bulb will last, look for an energy information label on the light bulb box. You'll find most of these facts there. You can also visit the Efficiency Vermont website (www.efficiencyvermont.com) for more information on lighting and interactive tools for choosing the right bulb. 

The Vermont Public Service Board requires all electric utilities to publish this Herbicide Use Notification periodically. Members of Washington Electric Cooperative are reminded, however, that it has long been the policy of this cooperative not to deploy herbicides in the right-of-way management program.

PUBLIC NOTICE

PUBLIC NOTICE

HERBICIDE USE NOTIFICATION

Vermont utilities maintain electric line rights-of-way with several methods, including the selective use of herbicides on trees and brush. They also encourage low-growing shrubs and trees which will crowd tall-growing species and, thus, minimize the use of herbicides. The application of herbicides may start as early as April 1. **Requests to utilities for notice by mail, however, must be made by February 15.**

The Public Service Board requires Vermont utilities to carry out vegetation management techniques which allow maintenance of electrical systems in a cost-efficient manner.

The types of herbicide treatment used to maintain vegetation on utility rights-of-way include the following applications: stump, injection, basal, soil, and foliar. These are the commonly used methods; your local utility may use other methods. Landowners have the right to request that a utility apply herbicide treatment on cut stumps only or that a utility refrain from applying herbicide. In the latter case, the landowner has to pay the utility an administrative fee. Only electric utility rights-of-way that have tall-growing tree species with the potential of threatening the electric utility system are treated.

Utilities advertise by radio and newspaper prior to herbicide applications on all lines. Utilities typically treat rights of way once every four-to-six years, depending on the utility's specific vegetation management cycle. Please check with your utility regarding the vegetation management cycle of a particular line.

Some utilities identify their poles with metal letters and numbers, e.g., V.E.C. (Vermont Electric Co-operative), or V.E.L.C.O. (Vermont Electric Power Company). These markings are not found on every utility pole. However, by checking of several poles on a line, you should be able to find a marked pole and determine which utility owns it.

Persons owning or occupying land within 1,000 feet of a utility right-of-way may request in writing that the utility notify them individually by mail anytime but at least 30 days prior to treatment of the line with herbicides. The landowner or resident is responsible for contacting the utility, in writing, to request placement on the mailing list. The utility should be provided with sufficient information as to the exact location of the residence and land. It is the duty of each landowner or resident to make the utility aware of the location of any potentially affected water supply, and any environmentally sensitive areas where herbicide application ought to be avoided.

CONTACT YOUR ELECTRIC UTILITY WITH QUESTIONS OR SUBMIT THE COUPON PROVIDED

If you have further questions or concerns contact:

Agency of Agriculture
James Leland
116 State St., Montpelier, VT 05602
1-802-828-2431

Consumer Affairs & Public Information
Dept. of Public Service
112 State St., Montpelier, VT 05620
1-800-622-4496 or 1-802-828-2332

LANDOWNER REQUEST TO BE ADDED TO HERBICIDE TREATMENT NOTIFICATION MAILING LIST	
Name	Town/City of Affected Property
Street Address	Telephone Number (Home)
Town	(Work)
State	Zip Code
Electric Account Number	O.K. to use Work Number: Yes <input type="checkbox"/> No <input type="checkbox"/>
Property of Concern: <input type="checkbox"/> Year Round Residence <input type="checkbox"/> Summer Residence <input type="checkbox"/> Commercial Property	Best Time to Call
<input type="checkbox"/> Water Supply <input type="checkbox"/> Land <input type="checkbox"/> Other	
Line and Pole Identification: Utility Initials	Numbers
We need all of this information in order to determine if you qualify for personal notification. If information is unobtainable, please state why. Use an extra sheet of paper if you need more space.	
RETURN TO YOUR LOCAL UTILITY	
VELCO15	

Moving Power Lines

continued from page 1

Once their calculations are complete the line workers build the system to the engineers' specifications. WEC's infrastructure – its power-distribution system – exists because generations of Washington Electric engineers have done the painstaking work not only of figuring out how sections of power line can be constructed to get electricity from "here" to "there" in 41 towns, but also negotiated hundreds if not thousands of 30-foot-wide easements across people's property and along town roadsides.

Well, then how come more needs to be done?

One answer lies in Mike's observation that "everything gets old." Poles and wires (conductor) must be replaced periodically – preferably, before they break under the stress of a storm. When they're replaced they are also upgraded, as both the wires and poles installed today are heavier and stronger than the equipment put in place by utilities decades ago.

But that's just part of the answer. Equally important is that the world has changed since the system went up. Central Vermont used to be a land of dairy farms, and the cheapest and fastest way to get power from one to the next was across open fields. Farmers agreed to these rights-



Memo to Walden-area Co-op members: Your power lines are getting more modern, more reliable, and more resilient, and it's thanks to these guys — all of them line workers involved in the Cobb Road-Maple Lane rebuild. From bottom, left: Jason Preston, Jason Smith, Maintenance Foreman Amos Turner, Construction Foreman Kevin Lanphear, Hans Pope-Howe, and Apprentice Patrick Morrissey; from top, left: Apprentice Mike Bent, Apprentice Scott Matheson, Kyle Sands, and Mike Baril.

of-way, perhaps with adjustments here and there, because they wanted the power and could cohabitate with the apparatus that brought it to them.

Now, many of those fields have

become forests, causing WEC to put a great deal of work and significant financial resources into re-clearing the corridors through them to safeguard against storm damages

and outages, and to preserve power quality – preventing people's lights from flickering when branches brush against

continued top of next page

'You Keep Trying' Imagining Improvements, Through A Pickup Truck's Window

Mike Patterson is standing in ankle-deep snow in a just-recleared and reconstructed section of power line, 0.78 miles long, in the woods off Cobb Road in Walden. A long line of sturdy, new power poles, a rich brown in color, stretches into the distance, crossing over small ridges and disappearing in the direction of Maple Lane. It's January, and WEC's off-road construction team had just finished the project a few weeks earlier. They replaced thinner, frailer poles that had been in place here since the 1940s.

Not only are the poles newer, there are more of them in this right-of-way (ROW) corridor than there were of the old ones. As part of the reconstruction, Maintenance Foreman Amos Turner and his crew upgraded the conductor (wires), using a thicker alloy that retains power quality better than the '40s-era wire, and of course is stronger; but snow piles up more heavily on the broader wires, so the construction crew, led by Foreman Kevin Lanphear, set poles closer together to withstand the load. It was Mike, one of the Co-op's field technicians, who designed the rebuild; he explains that an optimal distance between utility poles is around 250 feet if circumstances allow. The old poles here had irregular spans – 380

feet, 350 feet... one span was 445 feet.

The spruce and pine along the ROW are trimmed back from the wires, making for a very visible and open corridor, and the "danger trees" – weak and leaning trees that loom over the corridor from just outside – had been removed. Underfoot, the ground beneath the snow feels fairly tidy and safe to walk upon. Lineman Hans Pope-Howe had been in there with the Co-op's Bobcat track vehicle, grading the terrain and clearing away loose rocks and debris.

"It's beautiful," Mike says appreciatively, as his eyes take in the reconstructed power system and the manicured right-of-way surrounding it. "It's a great result."

What could have been

It's not, however, the result he had tried for hours, days, and weeks to obtain. Cobb Road and Maple Lane intersect at a point not far off of Route 15. Houses are few and far between, and the whole area is wooded – typical WEC territory. The roads form two sides of what's roughly a rectangle, and the renovated ROW, which has a curve in it, forms the other two sides.

The new ROW Mike had in mind would have paralleled the roads, tucked behind the bordering trees to

make them less visible. Mike is right: the reconstruction in the old corridor came out beautifully; the right-of-way contractors cleared away the brush and trees and left a nicely sculpted passageway as far as the eye can see. The updated poles and wire should last 50 years or more. It's all good.

But the vegetation began growing back the day the ROW contractors left. (It's Vermont.) The infrastructure, even though it's stronger, will become more vulnerable as trees begin leaning into it; a prodigious snowstorm like the area experienced in December 2014, or a microburst like nearby West Danville experienced in July 2012, could cause a lot of problems. This would be true even if WEC had been able to relocate near the roadside – but the right-of-way, "beautiful" as it is, is three quarters of mile through forest; you can only reach the beginning and the end with a bucket truck; other than that, it's by snowshoe or maybe snowmobile or six-wheeler (after the damage has been scouted on foot), shuttling equipment back and forth, climbing poles in nasty weather...

That's linemen's work, and WEC's staff does it well. But it's slower, it stretches resources if it's just one of many areas hit by a widespread outage, and it could be more dangerous than necessary.

So Mike tried to engineer an alternative, which meant reaching out to property owners along the two roads. In these situations, he says, some people are willing to talk and some just aren't. You try to put pieces together; you cross the road with the lines (in your planning) if someone on one side objects but the person on the other side doesn't. If the objector owns the land on both sides you've got a problem.

To help people understand what he's proposing Mike will stake out where he believes the poles would be. "Even though this is in the early stages, it has to be reasonably close to what we'll want to build," he explains, so that entails preliminary engineering work, calculating stresses, distances, and ground conditions. "I'll say, 'This is what we'd like to do. What are your thoughts about it?'"

"We're not a hardball company," he says. "We don't just try to have our way. But a lot of work goes into just giving them something to think about and respond to."

When the answer is no, the Co-op goes to work rebuilding cross-country, but upgrading, refining, perfecting – pursuing this second choice in a manner that drives reliability.

continued bottom of next page

the lines in the wind.

Then there's this:

The woods on dark and stormy nights are a hazardous place to work. Responding to outages, linemen and their scouts, who are called birddogs, have a hard time shining their lights through trunks and branches to find the damage. When the right-of-way is off-road, whether through the woods or across a high-elevation hillside, these searches are mostly done on foot.

Mike Patterson, who birddogs during major outages, knows what it's like.

"You're going along and the visibility is lousy and you can't tell what you're going to encounter. There might be streams, there might be fences, and especially when there's a foot of snow on the ground you can't tell what's underneath – rocks and roots and old branches. Next thing you know you find yourself in the middle of a [frozen] pond."

All this, of course, at 3:00 in the morning. Even with WEC's advanced metering infrastructure (AMI), which uses electronic communication to guide linemen toward the locations and probable causes of outages, this off-road work is risky and slow. As a result, outages take longer to fix.

"You're going along and the visibility is lousy, there might be streams or fences, there's a foot of snow on the ground, and next thing you know you're in the middle of a [frozen] pond!"

So the engineers, the line workers, and the entire Operations crew are always on the lookout for opportunities to move the right-of-way to where it's safer and more accessible. WEC members, too, are the beneficiaries, as line relocations cut down on outages and the time it takes to end those that do occur. Relocations closer to the road, therefore, are

WEC's official policy. What worked in 1945 doesn't work as well today.

That's where the environment – the physical and aesthetic environment, and the regulatory and cultural environments – comes into play. When Mike or Brian or Steve find a better way to route the power lines there are agreements to secure, requirements to meet, permits to acquire, skeptical minds to convince.

Frequently, their best-laid plans don't pan out. It's not a disaster; WEC will already have a right-of-way, in most instances, and can rebuild there. And when it happens it's often because that's the preferred outcome by at least some WEC members, who have declined to agree to an alternative ROW. They are member-owners, and theirs is the final say.

In terms of service, safety, and long-term costs, it's not the first choice




The right-of-way between Cobb Road and Maple Lane in Walden (above left) is off-road and three-quarters-of-a-mile long, but it will be much more accessible and resistant to bad weather thanks to a stem-to-stern reconstruction project. WEC engineer Mike Patterson now has his eye on the ROW nearby, off Noyestar Road (right). The poles are aged and leaning, and the terrain is hard to navigate. He's hoping portions of these lines can be relocated closer to the roadside.



for the Co-op, Mike points out. "But that's what we've got to do."

So it gets done. And with better equipment today, and improved

construction practices, it gets done far better than half a century ago – even on sub-optimal terrain. 

Stories

The alternative rights-of-way that are proposed to WEC members don't come out of nowhere. They are created in response to conditions that concern the Operations Department: a comparatively high number of outages; places where the infrastructure has gotten old, to head off outages before they occur; hard places for the crews to reach for maintenance and repairs. By the time the engineers approach WEC members with an idea for re-routing the ROW nearer to the road, they've done their homework and know where the poles and wires should go.

But that doesn't mean the members will see it that way.

"People don't want to see change in their surroundings," Mike says. "And they don't want to see poles and wires."

Knowing that's true – and, by the nature of their job, being outdoors people themselves – WEC's engineers work to mitigate the impact a relocation might have, setting the power lines behind trees, for example, but close enough to the road that they might be reachable by the lift arm of a bucket truck.

Still, even people who agree to weigh the option might be unconvinced.

"People have their reasons," Mike explains. He's had years of experience (he's been with WEC since 1992), so he knows there are lots of factors in people's decisions. Urgency, or the lack thereof, is one of them. "When the sun is shining and the sky is blue and the power is on, forget it!" he says.

A contrast to that was an experience he had in Williamstown during the memorable December 2014 (Winter

Storm Damon) outages. He was birddogging for a line crew when he mentioned to a woman who came out to speak with him that her house might be better protected from outages if WEC could re-route the lines that serve it.

"Anything!" she said.

He returned the next day to stake a corridor on her property that would work better. Soon afterward, she told him, politely, that other family members were opposed to the idea. Not coincidentally, her power was back on.

He tells another story, about a WEC member in a very rural area that in the early 1990s had experienced repeated outages.

"After a while he went out and bought a \$1,000 generator," says Mike, "and then he didn't care that much if the power went off. When I asked him about



Utility Technician Mike Patterson, truckside on Noyestar Road in Walden. Along with his fellow engineers, Steve Hart and Brian Wilkin, Mike works constantly to bring improvements to Washington Electric's very rural, and therefore challenging, distribution system.

relocating the lines on his property he said "Who needs it?"

What Mike didn't say was that his neighbors down the road might need it.

Mike and his fellow engineers – Brian Wilkin and Steve Hart – roll with the punches. They appreciate the people who will speak with them and entertain an idea. It's the people who won't even respond to their efforts to reach them that make the job hard.

Noyestar Road


Not far from Cobb Road and Maple Lane is another area Mike is working on, along Noyestar Road. The poles you can see from the roadway, often disappearing into the woods as the power line veers into remote, sometimes scrubby areas, are old and skinny. ("Look at that one," Mike says,

pointing at a weathered pole some distance away. "That's a Miller 1940. Guaranteed.")

He wants to rebuild here, too, and is finding a receptive ear among some property owners, disinterest among others. The Walden School District wants him to move his plan across the road to avoid setting a pole near the soccer field. "But the guy across the road says no," Mike says. He's turning ideas over in his mind. "That person's willing to talk about [allowing the wires to go] underground," he says, with "riser" poles at the ends that connect back to the overhead lines. The underground solution is a costly one for the Co-op, not a great precedent to set. But would the other benefits of this long relocation project justify that cost? He's thinking that one out.

He drives along slowly, scanning the terrain.

"I'm gonna put a pole here, tighten this up a bit... Can't put a pole there; it's too wet... This part's not bad, but we could tweak it... Here's where a young guy is building a house out of an old camp; if we can do this he won't have to pay for a line extension himself, which will save him hundreds of dollars... Once I put together a right-of-way I'll apply for the town highway permit."

When Co-op members flick the switch they expect the lights to come on. That sounds simple enough. Spending a few hours in a truck with Mike Patterson, or any of WEC's Operations crews, reveals the hours of calculation, planning, negotiating, rugged physical work, and sometimes the disappointment, that make that "simple" act possible. 

Net Metering Countdown To 2017

continued from page 1

the cap on how much net-metering utilities must accept on their systems. The cap had been the point at which the collective generating capacity of those systems reached 4 percent of the utility's peak-power demand; the 2014 legislative change increased that to 15 percent of peak.

It's to be expected that net metering would go through such adjustments. As the solar industry has matured, the cost of solar has declined significantly from the early roll-out of net metering plans. Plus, utilities have gained experience with the program and are better able to assess its true economic value and effects upon their operations and their customers – those who are involved with net metering as well as those who are not.

Now, another adjustment is before us. Act 99, the catalyst for the 2014 alterations, also instructed the PSB to redesign the net metering program for implementation on January 1, 2017 – now less than a year away. (That was expected to be the expiration date for federal tax credits for renewable energy systems, which could have affected

participation rates; those credits were recently extended.)

In response, the PSB convened an "Act 99 Working Group" of net metering stakeholders which met frequently last year to provide input and advice. Washington Electric Cooperative was among the participants. On December 7 the PSB circulated a draft net metering rule to Working Group members, and took comments from them until January 13. Some of the participants were nonprofits with public membership, who contacted their supporters and urged them to weigh in; and while the PSB invited citizens' comments, many people weren't aware, and the weekday meeting schedule may have discouraged participation.

Inevitably, the responses the Board did receive to its plan were mixed.

WEC's reforms partially reflected

Washington Electric Co-op was in a unique position, because the PSB's 2014 reforms allowed this Co-op – and *only* this Co-op – to design and implement its own net metering program, good until 2017. The reason was that WEC had already surpassed the PSB's goals for net metering participation (at least 10 percent of peak



Home-sized solar net metering systems typically generate power from panels on the roofs of houses – or, in this case, somewhere in Vermont – a barn, or outbuilding. Some are placed on racks built upon the ground.

and renewable energy (WEC's power portfolio is 100-percent renewable).

This provided WEC an opportunity in 2014 to institute reforms in net metering that were crafted in large part to ensure that members contribute more equally to the costs of operating and maintaining the cooperatively owned utility. Because of the Legislature's

previous reforms, members who could zero out their electric bills with net metering credits no longer contributed to those expenses, even though members without net metering had no such "out" from those costs. To address this imbalance, new participants – those who enrolled in net metering

continued on next page

PSB Rules Get Creative About Siting

Public concern, and sometimes anger, about the siting of renewable-energy projects has become a subject that the state's political leaders and state agencies know they'll need to address. It's a form of growing pains for the renewable energy movement.

First, commercial-scale wind projects attracted criticism for their appearance, their effects on certain ridgelines, and for noise that neighbors, in some cases, have complained about. (Washington Electric Cooperative is a supportive customer of Sheffield Wind, and assisted that project financially in its formative stages.) More recently, large solar arrays have attracted similar complaints about their visual impact, land usage, and the degree to which towns and residents have or haven't been able to weigh in on siting decisions. The issue is likely to grow even more contentious as proposals have been put forth for new solar sites covering hundreds of acres.

Net metering, in its "traditional" form – small (say, 15-kilowatt) roof-mounted or ground-mounted solar generating systems on an individual's private property – has not been much of an issue in the siting debate. That's changing somewhat, as group net metering projects proliferate. These can be 500 kilowatts or more, and are co-owned by people who may live near or not so near to them, but who are all served by the same electric utility whose territory includes the community solar project. The participants purchase shares and divide up the net metering benefits.

Official response to the wind- and solar-siting concerns could take place

The net metering draft indicates that, here, regulators see the possibility of wielding a carrot, rather than a stick, to address concerns about the kinds of development some people vehemently dislike.

in a number of regulatory forums. But interestingly, it showed up also in the draft net metering rule circulated last month by the Vermont Public Service Board, the document that proposes a new design for net metering to replace the current program on January 1, 2017.

This particular document gets at siting issues not by outlawing development in specific areas or on certain kinds of land, or by mandating participation by town or municipal boards. Instead, the draft rule proposes to provide incentives that give net metering projects greater per-kilowatt-

hour returns – called "siting adjustors" – if they select "beneficial" locations.

The preferred types of settings described by the PSB draft are:


- Structures, whether new or existing, whose primary purpose is not to generate power (like rooftops on homes and building) – co-location, in other words, which avoids land being set aside solely to host power production that some people find unsightly;
- "Brownfields." The PSB describes these as "real property, the expansion, redevelopment, or reuse of which may be complicated by the release or threatened release of a hazardous material." Typically, these are places where the soil is contaminated by a previous industrial or commercial activity, making them too expensive for most developers to rehabilitate. They are brownfields, in other words, and also white elephants;

- Sanitary landfills. Many towns in Vermont had small landfills in the past, and most of those – and most of the larger landfills, too – aren't operating anymore; yet they linger on as basically undevelopable land, useful for very little except, perhaps, solar panels;
- The disturbed portion of a gravel pit;
- Places where a proposed renewable energy project can demonstrate the support of all adjoining landowners;
- Where there is an "on-site primary off-taker" – confusing verbiage that basically means that 50 percent or more of the power generated there will be used by the owner, or a renter, of that property (avoiding a scenario where a large system might be built to service customers some distance away, to the inconvenience of local people);
- In a town-designated area, meant to serve the purposes of net metering for renewable energy.



Larger solar projects, like this one in Williamstown, are cropping up more frequently in Vermont. As they proliferate, and as proposals for new ones become much larger than this, some members of the public have grown concerned about land use. The draft PSB net metering rules are one place where this concern is taken into consideration.

The level of incentives for this kind of "beneficial" siting, compared with the per-kWh returns that individual and group net meterers will get for their energy produced at less-desirable locations, was the subject of some of the responses the PSB received regarding its proposed rules.

But whatever tinkering takes place, the draft indicates that regulators see the possibility of wielding a carrot, rather than a stick, to address concerns about the kinds of development some people vehemently dislike. The carrot approach could be far more advantageous to the future of the renewable energy projects we need in a warming state, nation, and world. 

Net Metering Countdown To 2017

continued from previous page

after July 2014 – now pay the Co-op’s standard “customer charge” and a “grid-service fee” that approximates the costs collected from non-net-metering members to help with WEC’s basic operational expenses. (The Co-op felt it could not change the rules for members who had enrolled in the original net metering program.)

The PSB’s draft rule of December 5 includes provisions very much like these.

“It was gratifying to see that the Public Service Board proposed flexibility that would essentially allow our current program structure to continue,” says WEC General Manager Patty Richards. “We know that others had the same concerns we did, and that without meaning to, earlier reforms had shifted costs unfairly to ratepayers who aren’t involved with net metering. We plan to continue offering this important program. Doing it in a fair and sustainable manner is a central

tenet in our approach to net metering. The grid service fee that we implemented for net metering covers a portion of the utility’s fixed costs, helping assure that we’re there for people with solar generating systems, incorporating their excess energy and providing power when their panels aren’t producing.”

Richards’ official comments to the Public Service Board stated, “WEC believes the draft rule is both responsive and consistent with the requirements set forth in Act 99.”

However, as WEC’s spokesperson, Richards provided several recommendations. Some reflected WEC’s experience with its unique net metering program.

Energy audits: Richards urged the Board to give utilities the option to require home energy audits of at

It’s to be expected that net metering would go through such adjustments. The cost of solar has declined significantly from the early roll-out of net metering plans, and with experience utilities are better able to assess economic value and effects upon their operations and their customers.

least some applicants for their net metering programs. WEC does this for “high-use” applicants (for residential members, this means at least 750 kilowatt-hours/month) unless they can document a 5-Star Energy Rating or its equivalent. Whether to implement the auditors’ recommendations remains the homeowner’s (or business owner’s) choice; yet Richards pointed out that “Maximizing energy efficiency has long been recognized as a policy goal under Vermont law.” Energy audits also help an applicant avoid the costs of purchasing an inappropriately sized solar generating system.

So far, just a very few participants have needed an energy audit; the provision has not proved to be a deterrent to net metering and the expansion of renewable energy.

Cap: Among WEC’s other recommendations were that the final PSB rule include a 25-percent cap on the net metering requirement for utilities, providing an opportunity to reassess the program as it grows.

Credits: WEC proposed that the rate at which utilities credit residential net meterers for “excess” power they provide to the grid be a “blend” of their residential rates – if, like Washington Electric, the company has an inclining rate structure. (WEC has two tiers of residential rates, one quite low for each member’s initial 200 kWh/month, and the other substantially higher.) Using a blend of rates, rather than the highest rate, would moderate a utility’s loss in revenue, while still providing the net metering family a good return on its solar investment.

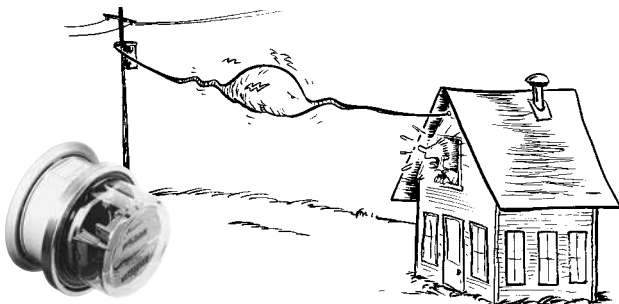
Grandfathering: WEC supported the PSB’s proposal for a time limit on how long utilities “grandfather” net-metering customers who entered the program before customer charges and grid fees were imposed. While it would not be fair to change the rules

continued on page 8

WEC CO-OP STORE

WHOLE HOUSE SURGE PROTECTION

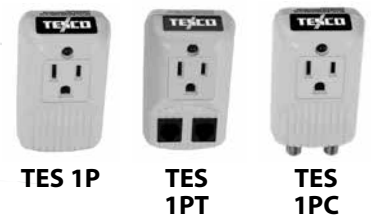
Protect individual appliances, valuable equipment with a meter-based SURGE DEVICE. Be Safe, Not Sorry! Special Member Discounts!



A Full Line of “Plug & Play” (DIY installation) Surge Devices

Highest protection, compact size. Three models, all in stock.

TESCO TES 1P.....	\$21.00
TESCO TES 1PT.....	\$27.00
TESCO TES 1PC.....	\$27.00
TESCO 8CRJ45 Satellite Dish Surge Protector...	\$99.00



If you own a single item such as a TV, a DVD player, a computer connected to the internet by a cable or satellite provider, audio equipment or pay TV service, without surge protection you’ll have to make up the replacement cost out of pocket in the event of a surge striking. TESCO devices offer full protection and an iron-clad warranty for all connected equipment.

Your equipment is exposed to power surges until you connect your equipment to one of the TESCO family of products. Be safe, not sorry!

Home Performance with



ENERGY STAR® is a fee-for-service program designed to improve home comfort, durability, health & safety and to reduce homeowners’ energy costs.

Services provided as part of a Home Assessment?

- A comprehensive home audit, which may include an evaluation of your heating system, lighting, appliances, windows, building tightness and insulation effectiveness (blower door test, infra-red/thermal scan test)
- Professional advice on ways to improve the comfort and durability of your home, as well as to solve problems and lower your energy bills
- Assistance in prioritizing improvements
- Information on energy-saving products

Contact the Co-op’s Energy Coach at 802-224-2329 or Efficiency Vermont (1-888-921-5990) for information on Home Performance with ENERGY STAR® and incentives from Efficiency Vermont available to discount cost of audit and recommendations.



Call the Co-op at

800-932-5245

or visit us on the web at:

www.washingtonelectric.coop/pages/prod.htm

It's Your Co-op, Too, So How About Running For The WEC Board?

Washington Electric Cooperative is a member-owned utility. What are members? Members are its customers, whose houses, camps, businesses, farms, and other buildings get their electric power from WEC's poles and wires. Collectively, they own the Co-op, and Co-op members can exercise that influence most directly by serving, with other members, on WEC's Board of Directors. This isn't a sham, or a mere advisory group for a corporate-owned utility; it's the real seat of power for the Co-op, making policy and guiding financial decisions.

Maybe you'd like to serve on that nine-member board. After all, democratic institutions are at their best when their constituents participate.


In December, *Co-op Currents* announced the time and place for the upcoming 77th Annual Membership Meeting. It's Tuesday, May 3, at the Canadian Club on Route 14 in Barre. The annual meeting is where the final voting takes place, although most people vote by mailed ballot in the weeks beforehand. Here's what candidates need to know.

Running for the board starts with a "candidate's packet," which contains the materials needed to seek election. Interested people should contact WEC Administrative Assistant Debbie Brown at 802-224-2313. She will explain the contents of the packet and what a candidate must do to qualify. Among other things, the packet contains a petition that must be signed by at least 25 WEC members (it is not a commitment on their part that they'll vote for the candidate). A very short biography, touching on work and related experience and history as a Co-op member, is also needed. Candidates should submit a photograph, to be published in *Co-op Currents*. If they prefer, they can contact the editor, Will Lindner (WillLind@sover.net), and he will take your photo. There's still time for all this, but the deadline is approaching. The Co-op must receive the completed packet materials by **Friday, February 12, 2016**.

People can, if necessary, miss the above deadline and get the materials to WEC instead by **Friday, March 4**. It will put them at a disadvantage, because they won't be included with other candidates in the introductions in the next issue of *Co-op Currents*.

Tuesday, March 15, is the deadline by which candidates must submit their answers to a list of questions, which will be published in the Official Annual Meeting issue of *Co-op Currents* in April. They can be mailed, e-mailed, or delivered personally to the Co-op.

The elections also provide an opportunity for members to petition for changes to the Cooperative's bylaws. You can obtain a copy of the bylaws through the Co-op or read them at the WEC website. The signatures of at least 50 WEC members must accompany the petition. The deadline for bylaw-related materials is **Wednesday, February 10**.

It's your electric Co-op. Maybe you should jump in. 


President's Report

continued from page 2

time for many Vermonters, especially those who struggle with depression. It is so important that we all recognize, stay aware, and offer our support to family, friends, and neighbors who struggle with this issue. My heart goes out to the Catlin family for their loss and their willingness to honor Betsy's life by their openness.

I also want to mention the 2016 \$15 Habitat stamp, which is available on the Vermont Fish & Wildlife Department website and as a voluntary add-on on this year's hunting or fishing licenses when purchased online at vtfishandwildlife.com. The

funds raised by buying the Habitat stamp help Fish & Wildlife leverage federal funds to bring in \$100,000 to habitat conservation in Vermont. Thanks to the Washington World for publicizing this program, and to Co-op member Louis Porter, commissioner of the department, and his staff for highlighting this program which benefits us all.

The days are getting longer but we all know we have a lot of winter ahead of us. Let's all take advantage of getting out and enjoying our beautiful community. When you are out and see our Co-op employees working in the field, please stop and just say hello or give them a Vermont wave. I know they will appreciate it. 

Change in Office Hours

Washington Electric Cooperative's office and administrative building, just off Route 14 in East Montpelier Village, will be closing an hour earlier on Fridays. The new hours for Fridays will be 7:30 a.m. to 4:00 p.m. The office has been remaining open until 5:00 p.m. The reason for the change, General Manager Patty Richards explained, is that very few Co-op members have been making use of that final hour on Fridays to visit the Co-op, so it makes more sense to align WEC's staff resources with the members' actual needs and usage.

The hours for Monday through Thursday are unchanged. On those days, WEC's office hours will continue to be 7:30 a.m.-5:00 p.m.

This small change in office hours will be effective February 16. (The office will be closed on Monday, Feb. 15, for President's Day.)

Net Metering Countdown To 2017

continued from page 7

before those members have had time to substantially recoup their investments, having two systems – one more economically advantageous than the other – is not justifiable over the long run.

"Ultimately, having all members in one program contributes to equity and fairness among all WEC members, and reduces administrative issues in the future," Richards wrote.

Pondering 2017 and beyond, Richards says, "A new WEC program won't be identical to our current one. We'll have to update some numbers [alluding to the charges and fees] because they're influenced by our maintenance and operations costs, how many people are on our net metering program, and other factors. But it would be similar, and would help us continue to expand net metering for more members while ensuring that it's workable for us and fair to everyone."

Environmental community's concerns

The PSB received very critical responses from some quarters, who argued that the draft plan undermined financial incentives that have made net metering successful.

The Vermont Public Interest Research Group (VPIRG) and the Vermont Energy and Climate Action Network (VECAN) sent letters to their members urging them to "make [their] voices heard" by contacting the PSB by January 13.

The organizations both argued that:

- 1) Changes in how net meterers receive credit for electricity they generate will reduce their financial support by 20 percent or more. Net meterers receive an "adder" on top of their utility's residential rate for power they generate; the adder by itself can be as much as 20 cents/kWh. "That's a generous incentive, and one we recognize needs to be moderated," VECAN said in its letter. "But the draft rule goes too far in the other direction." The greatest damage is done, the organizations contend, by applying the adder only to a system's

"excess power generation," rather than (as presently) to all the kilowatt-hours produced.


- 2) A provision in the draft rule that requires participants in group net-metering projects (typically, larger-than-rooftop projects that are co-owned by multiple people, who share in the net-metering benefits) to live within 10 miles of the system "will only slow down community solar," according to VPIRG.
- 3) The proposal to limit the grandfathering of pre-2017 net metering projects to 10 years – then requiring those owners to pay the fees that will apply to new projects – "will hurt existing customers and discourage others from going solar this year," before the rule takes effect next January (VPIRG).
- 4) Adding new fees for net meterers will drive down participation. "It's reasonable to disallow the practice of net metering customers to zero out all of their electricity costs," VECAN agreed, but the groups said the fees were vague, and that there should be caps upon them.

Net metering will continue in Vermont. It has a powerful, wide-ranging constituency, including Washington Electric Co-op, and it enables people to act upon their beliefs

concerning self-sufficiency and responsible climate stewardship. But the rules will change in 2017, probably accommodating some of the input of respondents like VPIRG, WEC, and others.

And it's a near certainty that sometime after that the rules will change again. They'll have to, because the playing field – Vermont's economy, Vermont's environment, and the myriad effects of "distributed generation" projects upon utilities' systems – will continue to shift, constantly.

For now, though, it's steady as she goes for Washington Electric.

"While we've reached 11 percent of peak with our net metering program, we still have 4 percent left to go," says Richards. "We encourage everyone who is interested, even tentatively, to contact us and learn more about net metering. We would love to welcome new systems into our program." 

"We know that others had the same concerns we did, and that without meaning to, earlier reforms had shifted costs unfairly to ratepayers who aren't involved with net metering."
— WEC General Manager Patty Richards