



Act 56, And WEC's 'Energy Transformation' Plan For 2017

Program Will Provide Incentives for Audits, Weatherization, and More

2017 will be a year of change for Americans, for Vermonters, for Washington Electric Cooperative members, and the Co-op itself, in many ways. Among those changes for WEC, and for all of Vermont's electric distribution utilities, will be programs that we and they will introduce at the start of the year to respond to the 2015 legislation known as Act 56. Lawmakers devised the idea of requiring electric utilities to work with their customers to conserve in all areas of energy use; not just electricity but fossil fuel uses as well. Inevitably, the costs of complying with these legislative requirements will be reflected in the Co-op's rates.

The plan that Washington Electric has drafted and presented to the Vermont Public Service Board (PSB) includes measures that will encourage, and in some circumstances assist, WEC members to:

- weatherize their homes, which will be the primary focus of WEC's plan;

- replace fossil fuel-fired water heaters with ENERGY STAR® heat pump water heaters;
- install solar water-heating units;
- switch to pellet boilers for their primary home-heating source;
- install cold-climate heat pumps as a component of their heating systems.

"Weatherization is paramount to our plans. We want our members

to think about energy efficiency first," said WEC General Manager Patty Richards. "Once they've tackled issues like air leakage in homes and efficiency in other energy uses, they can minimize the dollars they need to invest in new energy technologies like heat pumps and solar hot water systems."

An additional component of WEC's "2017 Annual Plan for

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Part of WEC's 'energy transformation' strategy: its electric vehicle charging station at the I-89 Exit 9 parking area.



WEC provides the first 200 kilowatt-hours of electricity at a bargain rate each month to every Co-op member, and the Reeds, who live in Washington, are well aware of it. They keep their electric bills enviably low simply by paying attention to their energy usage. Pictured, from left, are Mason, David, Sunny, and Marlene. Story on page 4.

Backup Generators For Emergency Relief

Each year, as winter approaches, the employees and Board members at Washington Electric Co-op begin worrying all over again about people whose safety might be imperiled in a snow or ice storm severe enough to cause power outages. WEC members often live in rural areas, isolated from family, friends, and neighbors.

WEC President Barry Bernstein mentioned, at the Co-op's October 5 Community Meeting in Cookeville, that he has had the experience of coming into the office to help answer phone calls during outage incidents, and has been surprised to learn, when talking to people, how many of them don't have backup heating systems – such as a woodstove – for times when they lose electric power. That increases his concern, he said.

And it's a fact of life that many

WEC members are also growing older.

So what can the Co-op do to help them?

Most important is doing all we can to strengthen the system's ability to withstand severe storms. But outages are going to happen, and sometimes they'll cause such extensive damage to the power lines that they might last for days at a time. Winter Storm Damon, in December 2014, was a case in point.

This was why Dan Weston, Washington Electric's Director of Engineering & Operations, brought up a subject at the Community Meeting that has received scant attention: that the Co-op has a small number of industrial-quality, well-maintained electric generators that it can make available to local fire departments,

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Washington Electric Cooperative
East Montpelier, VT 05651

Inside

New WEC rates take effect in January. The increase will be noted as a "surcharge" pending the PSB's final ruling. Manager's Report, page 3.

Net metering revisions to start Jan. 1; some participants will be affected immediately. For a summary of how the program will change, and why, see page 6.

A call for candidates. With three terms expiring and a director choosing not to run again, the 2017 Board elections offer a chance for members to serve. Page 8.

Holiday cheer, and reminders concerning winter preparedness, as a new year approaches. President's Message, page 2.

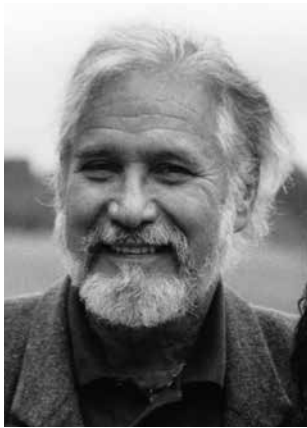
WEC's employees pitched in again this year for their favorite seasonal community service event, the annual Stuff-A-Truck food drive. Shown here delivering our staff's contributions are Maintenance Foreman Amos Turner (center), and Apprentice Linemen Mike Bent (left) and Patrick Morrissey (right).

President's Message

Seasonal Thoughts On Safety, Costs, And Generosity

By Barry Bernstein

As the end of a very busy year closes out we continue to experience ups and downs in our weather patterns – COLD, WARM, SNOW, RAIN, WARM, COLD – as the winter solstice approaches us. Please be prepared for the unknown in terms of weather, and have a safe and happy holiday with your family and friends.



five-gallon plastic storage containers filled to hold drinking water (it's a good idea to freshen those up periodically); a land-line telephone that's not battery operated, and an emergency list of who to call.

This is really important: Please call WEC (1-800-WEC-5245) to let us know if your power goes out. That helps our line crew be more effective and efficient in getting your power back on.

If you have a backup generator please make sure that it's wired correctly. (Call us, or call an electrician, for advice on this.) Gas-powered generators must not be used in confined spaces in or near your house, because carbon monoxide poisoning is

a deadly serious threat.

Don't forget to change the battery on your smoke alarm. And get a carbon monoxide monitor – they are well worth the investment.

The Time To Give

Here are two great programs provided by your Co-op.

WARMTH. I would like to encourage our members to consider donating to this statewide program, which provides emergency assistance for low-income Vermonters who have run out of heating fuel or whose electricity is about to cut off. An easy way to contribute to WARMTH is through Operation Roundup, which I and more than 1,400 other WEC members do. You can sign up through our Member Services Representatives, to have your monthly electric bill rounded up to the next-higher dollar. You can also choose to have a set amount added to your bill above that, whether it's \$1 or \$5 or whatever you amount you choose. WEC forwards these contributions each month to the WARMTH program, and they make a difference.

Community Fund. We also have the WEC community fund, which is supported by your donated capital credits. For 2017 we reached a record, with donations increasing from \$31,000 to almost \$40,000, contributed by more than 1,300 of our members. The fund distributes modest grants to not-for-profit organizations that serve Co-op members and other residents, mostly in the central Vermont area where our 41-town service territory lies. No administrative fees are retained by WEC – 100 percent of the money donated to the fund goes to the community organizations that are helping our neighbors.

You can ask our Member Service Representatives about either of these charitable programs, and they can help you sign up any time.

Alert: Those Costly Space Heaters

As winter approaches beware of the free-standing electric heaters and electric fireplace insets for sale at local hardware stores and chain stores. They may be inexpensive to purchase but they are very expensive to operate at 22 cents/kWh, no matter what they say on the box. Every winter we have members calling us who cannot figure out why their electric bill suddenly got so high, and it's often because they purchased one or two "Amish" type electric heaters. Even if sales representatives claim they are efficient, using 1,000 watts instead of 1,500 watts, these units rack up dollars fast. Your bill will go up significantly the longer they're on.

These heaters also have a cumulative impact on WEC's peak

electric rates. When they all come on at the same time in cold weather the supplemental power we need to purchase costs more (supply and demand). I encourage our members instead to call the WEC Energy Coach, Bill Powell, for consultation on other ways they can resolve their heating problems, without resorting to these so-called "efficient" space heaters.

Energy Issues

We continue to try to keep our members informed on the issues we address on your behalf. This month's Co-op Currents has updates on the rate increase (page 3); Tier III – referring to the new state law, under which we will assist members in reducing their fossil fuel use, and their overall home/business energy usage through weatherization (page 1); and the new net metering rules we expect to see in January (page 6).

Gaz Metro/GMP

I want to clarify a point I made in announcing our coming rate increase in our October issue. I wrote that GMP, under "alternative regulation," makes adjustments to cover its costs on a quarterly basis, rather than filing with the Public Service Board for rate increases as WEC and Vermont's other utilities do. That wasn't completely accurate. Since the beginning of 2014, GMP has adjusted its rates once a year in October. The adjustment reflects storm costs, power costs, transmission, and all other operational cost changes for the previous 12 months; it can also include cost decreases from various revenue sources that are shared with its customers.

My point was that WEC is required to take a different route – going through a very public rate-increase process, as we have just begun to do again with our recent filing.

Thanks To Our Staff Members And Others -- And Happy Holidays!

I want to thank all of our Co-op employees and our right-of-way contractor crews for their hard work and dedication this past year, whether just doing their daily work or being there for all of us during after-hour outages or major-duration storms. They are quite a special group.

My many thanks to your Co-op Board of Directors, who really do work hard on your behalf. And to Vice President Roger Fox, Treasurer Don Douglas, Secretary Annie Reed, General Manager Patty Richards, Director of Engineering & Operations Dan Weston, Operations & Construction Services Manager Brent Lilley, Director of Finance &

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Co-op Currents

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

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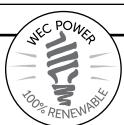
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The Board of Directors' regularly scheduled meetings are on the last Wednesday of each month, in the evening. Members are welcome to attend. Members who wish to discuss a matter with the Board should contact the president through WEC's office. Meeting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

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To call the Co-op, dial 223-5245 Mon - Thur 7:30 am - 5 pm and Fri 7:30 am - 4 pm.; toll-free for reporting outages & emergencies, 1-800-WEC-5245.

Manager's Report

Rates To Rise On WEC's Power Bills In January

Factors Range from REC Revenues (Down) to Transmission Costs (Up)

By Patty Richards

WEC filed on November 15 with state regulators to increase our electric rates by 6.52 percent. The increase will take effect on January 1st and it will appear as a temporary surcharge on your bill. The Vermont Public Service Board (PSB) will open a docket and the Public Service Department will closely review the Co-op's filing. A final determination by the PSB will be made within approximately seven months. Assuming that the PSB grants a rate increase, it will then cease to be designated as a temporary surcharge and WEC will institute the final approved rate. We will compensate our members retroactively if the approved increase is less than 6.52 percent.

Your Co-op makes every effort to hold rates steady, and to minimize increases when they are necessary. We were able to avoid rate increases in 2015 and 2016; the last increase, prior to this, went into effect in August 2014, which means we have been able to hold the line on rates for almost two and a half years.

Looking further back: In February 2000, WEC increased rates by 3.50 percent. We were then able to avoid increases for 11 years. In 2011 that changed, and we received approval for a 19.3-percent increase. Feedback from our members indicated they strongly favored smaller but more frequent rate increases to the considerably larger one that we instituted in 2011; we have abided by that preference. Two smaller increases followed: a 2.27-percent



The decline in REC revenues is attributable to lower regional energy sales (lower loads across all New England states) and higher production from renewable projects.

increase in January 2012, and in August 2014 rates increased by 3.78 percent.

In totality, a review of the past 17 years reveals that WEC's rates have increased by 2 percent on average per year, which is in line with inflation. No one likes rate increases, including WEC staff and Board of Directors. Many of the staff (those who are Co-op members) and all of the directors pay the same electric rates that other WEC members do. WEC is a not-for-profit company; when we raise our rates there are no considerations of dividends for investors, because there are none. This rate increase is

necessary for WEC to receive sufficient revenues to provide efficient and reliable service to our members and to ensure a level of financial performance required by our lenders.

A summary of the primary cost drivers is noted below and captured in the pie chart:

- The main driver of WEC's rate increase is a pattern of declining Renewable Energy Credit (REC) revenues. This single item represents a 3.04-percent impact on rates. It is important to note that, while falling REC revenues is the biggest factor behind this rate increase, RECs have been central to our ability to keep rates in check over the past several years. We have received RECs since 2005, when our Coventry generating plant came on line – providing power from a source of renewable energy – and in many years our sales of those RECs have provided some \$2 million – \$3 million in revenues. Without those dollars, rates would be more than

18 percent higher than they are today. These revenues have allowed us to make important investments in right-of-way clearing (critical to preventing outages) and upgrades to our electric system that brings power to you at your home. The decline in REC revenues is attributed to falling prices for these credits, which is caused by lower regional energy sales (lower loads across all New England states) and higher production from renewable projects. REC market prices have declined significantly, due to supply exceeding demand.

- WEC is experiencing increased power costs, which are largely attributed to higher transmission costs from ISO-NE (operator of the New England regional grid) and Green Mountain Power, which provides sub-transmission services to us in many places in our WEC territory; plus higher "capacity market costs" which are assessed by the regional power operator (this is a term that refers to charges which assure there are enough power plants located in New England to keep the lights on). Power costs

account for a 1.56-percent increase to our rates.

- WEC's operation and maintenance costs have increased, in part, due to rising health care costs and wages for personnel, which is an issue for every employer. This line item resulted in increased costs to rates of 1.18 percent.
- WEC is raising its net TIER (Times Interest Earnings Ratio) benchmark to 1.90. This is a financial measurement of WEC's ability to pay its lenders the interest owed on debt. The higher net TIER reflects the need to meet both Rural Utilities Service ("RUS") and National Rural Utilities Cooperative Finance Corporation ("CFC") loan-covenant requirements. The proposed rate increase results in a Debt Service Coverage ("DSC") level of 1.36, which is CFC's minimum DSC requirements, and only 0.01 above CFC's minimum operating DSC requirements.

The WEC Board and WEC employees continue to look for ways to reduce costs going forward, to minimize the need for future rate increases.

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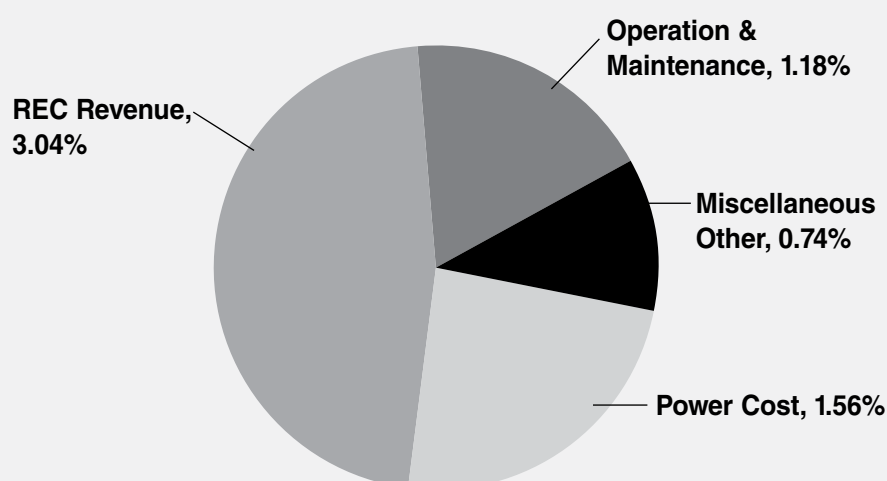
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Components of WEC's 6.52% Rate Increase



President's Message

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Administration Cheryl Willette, Products & Services Director Bill Powell, Member Services Supervisor Susan Golden, Administrative Assistant Dawn Johnson, and General Counsel Joshua Diamond of Diamond & Robinson. Thanks also to Ron Shems from Diamond & Robinson, and consultant John Murphy of Stantec for their recent work on our Coventry generating plant related to our air

quality permit and our new state-of-the-art gas scrubbing technology, due to start up this month.

I want to wish all of our valued WEC employees, their families, our WEC members and their families, and all those who work with us to assure that we bring you clean, economical, and 100-percent renewable power, generated as close to our service territory as we can, a very happy, healthy and safe holiday season.

Living Below 200 kWh A Month

Not Much of a Sacrifice for the Reeds and Their Menagerie

When you arrive at David and Marlene Reed's house on White Hill Road in the Town of Washington, you're greeted (with excessive fanfare) by Sunny and Mason. Sunny has pretensions about being a beagle, but her coloring and size suggest that there's something else in her lineage too. As for Mason, he's a sure-enough Bassett hound. David and Marlene promulgate what, to an outsider, appears to be a fiction, which is that Sunny and Mason belong, respectively, to their son in White River Junction and their daughter in Barre. If possession is nine-tenths of the law, these flop-eared little loudmouths are Washington residents.

One thing that's not in dispute, however, is that the Reeds have forged a lifestyle that enables them to live virtually every month within Washington Electric Cooperative's first 200-kilowatt hour (kWh) block of low-cost electricity. David, who is 74, seems to be a compulsive record keeper: he has a three-ring binder containing probably every piece of paper ever generated about his 1970 Ford Ranchero, and a collection of WEC electric bills that

attest to their frugal use of power. Their bills from 2015 came in routinely at 193 kWh, 186 kWh, 188 kWh, and so forth. (That September, though, the Reeds apparently went nuts and used a whopping 198 kWh! They were back under control the next month, in the low 190s.)

The bills for every Co-op member list the costs of WEC's first 200 kWh and of power consumed above that amount. The differences are stark: \$0.097900 for the first 200 kWh, and \$0.218590 for all additional power.

WEC's purpose for the two-tier rate structure is to ensure, as best as it can, that all members will be able to afford sufficient power for their basic electricity needs. Speaking up at WEC's recent Community Meeting in Cookeville, Co-op member Dan Wing observed, "I don't know where you're going to buy it (electricity) for less." The Reeds were sitting at the next table, and David

"You don't have to live in a cocoon," says David, "and you can still get your energy usage right down if you pay attention to detail." Informed of this statement, the Energy Coach, in his WEC office, shouts "Can I get an amen!"

arose to announce that they live within that limit with no problem.

So it's not surprising that their bills in 2015 were enviably low, most of them \$33 or \$34 a month. The outlier was the December-January bill (technically a 2016 bill, but mostly for power consumed in the final month of 2015): 293 kWh, for a cost of \$56.

"Christmas lights and such things," David

explains.

They don't seem to be suffering for all this frugality. They've got a warm and comfortable home, which they've been building around themselves since they moved to the land with their children in 1979, and which Marlene concedes will probably never actually be completed because it doesn't really have to be. ("You know, 'the shoemaker's children have no shoes and the dentist's children have rotten teeth,'" she says, citing familiar adages.) It's a labor of love, and David is continually working on improvements.

Equally important is that it's a comfortable labor of love. Even David's occasional use of his welding equipment to work on friends' and relatives' cars and trucks scattered around the yard seldom push their kilowatt-hours above 200.

The Reeds' commitment to live near or within WEC's low-cost tier of power crystallized around 2009. That's when David decided to take the Co-op up on its offer to lend out testing meters so that members can determine which appliances or other equipment are drawing the most electricity – an offer that still exists, by the way. (Advice: call WEC's Energy Coach, Bill Powell.)

"It showed us that around 40-percent of our power was going into our 30-year-old refrigerator," David recalls.

They shopped around and purchased an EnergySTAR refrigerator to replace it. "And that," David says, "was the first huge difference that we saw."

They followed up with other lifestyle decisions. The Reeds don't have an electric stove, electric water heater, or electric dryer, using propane for those appliances instead. There's a hole in their kitchen cabinetry where their dishwasher used to be (they wash the dishes by hand now).

An important habit they've gotten into is, as David expresses it, "We unplug stuff."

Marlene, smiling mischievously, looks at it the other way: "We plug in when needed," she says.

"Everything that has a clock or an electronic display is drawing energy all the time," David points out, referring to what Energy Coach Bill Powell calls "phantom power." Therefore, when the

coffee maker isn't making coffee, out comes the plug. It takes a mini-second longer in the morning to brew coffee when you have to plug it in first – hardly a major sacrifice. Small economies like these add up.

"You don't have to live in a cocoon," says David, "and you can still get your energy usage right down if you pay attention to detail." Informed of this statement, the Energy Coach, perched in his WEC office, shouts "Can I get an amen!"

The Reeds do make a concession with the router for their computer, letting it stay on (although they shut the computer itself down when not in use) because waiting for it to wake up and get its bearings constitutes, in their view, a legitimate inconvenience. "You've got to strike a balance," David acknowledges.

They have a boiler in their basement for heat, but more important is the large-box woodstove nearby with a grate placed in the ceiling above it that carries the heat directly up to the living room. With the house's fairly open floor plan, the downstairs is quite comfortably heated and the stairway allows the warmth to rise to the second floor. But just to make sure that little or no electric or fossil fuel energy is being wasted, the Reeds frequently turn off the boiler if they're going out for a while.

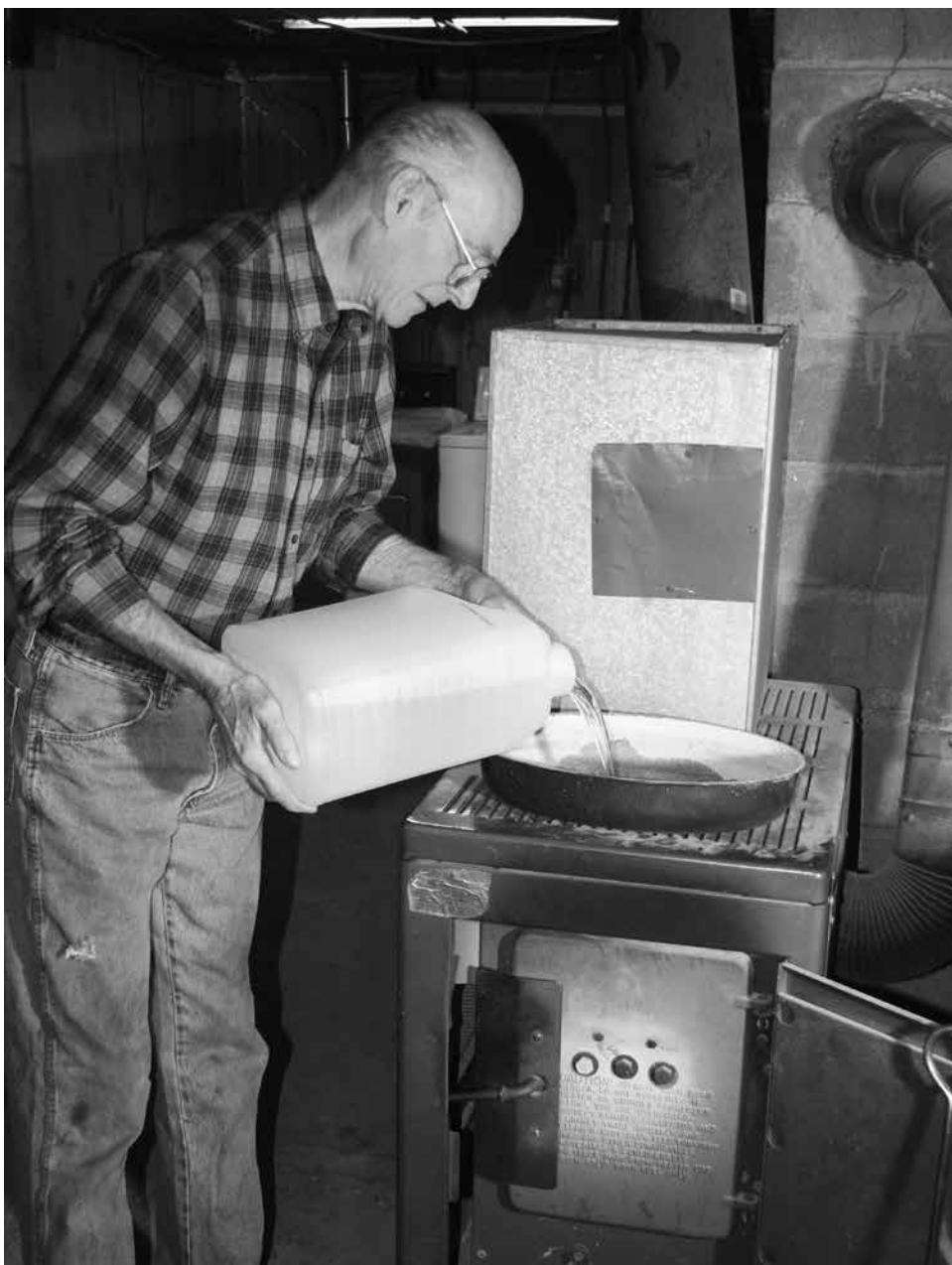
"If you leave it on all day you're just heating the water, letting it cool down, heating it again, letting it cool down again... There's no benefit to you," David reasons. (A digital thermostat could be another way of addressing this problem, but why quibble?)

Anticipating the obvious challenge to their frugal use of electricity – "Well, you're spending money on gas for your kitchen appliances!" – David performs some quick calculations. The Reeds buy electricity, propane, oil, and wood, but they're as careful with their usage of the fossil fuels as they are of electricity; and as for wood, David buys log lengths and cuts and splits it himself. (It's a lot of work, but he's not much of a sitter-arounder anyway.) In total, for those four energy sources, he figures that he and Marlene spend about \$2,000 a year.

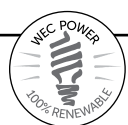
Life on White Hill Road

David and Marlene Reed are originally from Connecticut. They met in the 1960s as students at Danbury State College and migrated to Vermont in the late '70s because they wanted some land. They found their current 19 acres in Washington during visits to relatives that Marlene had in the area.

David spent 39 years as a math and science teacher, first in Connecticut and then for one year in Chelsea, Vermont, and 24 years in Williamstown. He retired in 2004, but has never quit working, finding an assortment



David Reed pours water into a pan atop the wood-burning stove in his basement in Washington. There's a boiler next to it that runs on oil, but with an unattached pipe conducting the stove's heat to a grate in the ceiling above, where it flows into the living room, the boiler is almost an afterthought. And the pan serves as an excellent humidifier.





Like all Bassett hounds, Mason (above, left) is a guy with lots to say. Center, Marlene and David economize by buying log-length firewood, which David cuts and splits by hand. At right is Big Red, who – despite what looks like a comb – is actually a chicken, not a rooster. Big Red is a valued and contributing (eggs) member of the household.

of part-time jobs, including delivering newspapers. He now works 25 hours a week at a Bond Auto Parts store – cars, and their inner workings, being another of his fascinations.

But it's the science and math background, he says, that orients him to the sometimes nit-picky particulars of conserving energy.

Marlene was a music education major back in Connecticut, and has taught music and directed choirs in schools and churches. In Vermont, she was a para-educator at Washington Elementary School, and later went

into food service at Williamstown High School. Like David, though, her resume is peppered with a slew of other jobs: substitute teaching, running a deli at Vermont Law School and a restaurant in Chelsea. She finally, formally, retired last June. She still loves music and sings with a local gospel quartet, the Joyful Hearts.


With Marlene at home more, the Reeds are anticipating that their electric use might rise, but they're intent on staying below the 200-kWh borderline. To be perfectly candid, that really means getting back below 200,

because their son recently gave them his used cathode-ray TV to replace their small-screen television, and to David's dismay their WEC bills began creeping north of 200 kWh.

"It turns out that just because things are free doesn't mean they'll save you money," he observes. They'll soon be in the market for an EnergySTAR-rated flat-screen TV, which ought to do the trick.

Sunny and Mason don't use any electricity, which is good because they're home all the time. So are Emma, a 20-pound Maine coon


cat, and Big Red, a chicken, both of whom also technically belong to the Reeds' daughter, Martha. Big Red lives outdoors in the summer and in the basement, comfortably near the woodstove, in winter. Her favorite trick in both seasons, when she's not molting, is hopping up the narrow wooden cellar stairs and depositing her daily egg at the top, just on her side of the door to the Reeds' living room.

If they happen to be on the other side, the Reeds can hear it thump as it hits the landing. 

WEC CO-OP STORE

WHOLE HOUSE SURGE PROTECTION

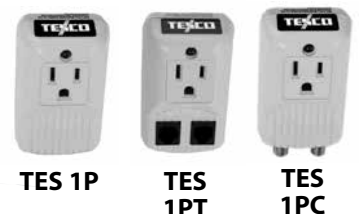
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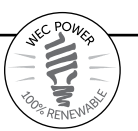
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The Factors Behind Vermont's New Net Metering Rules

WEC Hosts a Workshop to Explain

Vermont has recalibrated its statewide net metering plan.

After nearly two years of study and consultation with stakeholders, the Vermont Public Service Board (PSB), which regulates and oversees the state's 17 electric utilities, has created new rules for the program that will go into effect on January 1, 2017. The rules come in response to Act 99, which the Vermont Legislature passed in 2014. Lawmakers directed the PSB to review and update a program that has been in effect, with incremental changes along the way, since 1998.

The rules taking effect in January provide a regulatory format for new net metering systems in the years to come; they are designed to keep the program sustainable and productive while minimizing cost shifting and addressing environmental impacts. Yet they will also affect existing net metering installations – in some cases, immediately. That includes the approximately 260 member-owned, net-metered electric generating systems connected to Washington Electric Cooperative's powerlines.

To acquaint their owners with the changes that lie ahead, WEC quickly convened an informational workshop on Thursday, December 8, at the Old Brick Church next door to the Co-op's office building in East Montpelier.

"We sent letters to everyone with a net metered system already on our lines to explain what changes we expect to see, and encourage them to come," said Patty Richards, the Co-op's general manager. "We wanted to alert them because if they've had their systems for ten years or longer they will be impacted immediately by the new rules, and it will show up on their January electric bills. These changes are directed by the state. Ten-year-old, and older, net metering systems everywhere in Vermont will be affected on January 1, 2017."

In time, more-recent systems will also come under the revised rules.

"When an existing net metering system eventually reaches the ten-year mark, it will be governed by these rules as well," said Richards. "So if a system is three years old today, in seven years it will switch over. Eventually, the 2017 rules will apply to everyone."

Some of the financial incentives that have been in place for several years, and were designed to stimulate participation in net metering, have been reduced. Yet, to a significant degree, those reductions are counterbalanced by new incentives in the 2017 program. The PSB's goal continues to be to inspire Vermont ratepayers to add more home-generated renewable power to Vermont's grid, but to return to the

original conception of the program: primarily encouraging small, home-sized installations of 15-kilowatt (kW) generating capacity or less.

The PSB has also folded other objectives into its revamped program. For the first time, net metering rules will provide incentives for people to install their systems in environmentally benign sites (examples include rooftops or the surfaces of other existing structures, or on brownfields) and disincentives for using open, undeveloped property and agricultural lands.

Net metering activity in Vermont has grown to include large installations up to 500 kW generating capacity. An issue in the Board's deliberations was whether those facilities should continue receiving the same premium prices for their power as the roof-mounted solar panels or small-scale wind turbines in a resident's back field that the net metering program originally contemplated. A 500-kW system generates a lot of power, and when utilities are required to pay high prices for that power it applies upward pressure on their rates. By contrast, a home-owned 15-kW system is designed to provide sufficient power for its owner. When a surplus of power is produced it is channeled into the grid, and other ratepayers purchase it through their utilities; but the impact of these modest systems on the utilities' rates is small.

In the final rules, it was decided that the larger solar installations could still participate, but the financial package has been changed. Through a combination of financial incentives for small systems and premiums paid

"Ten-year-old, and older, net metering systems everywhere in Vermont will be affected on January 1, 2017."

— Patty Richards

for siting systems in preferred locations (such as rooftops or previously developed land), the PSB hopes to tip the balance in the program toward the smaller-sized systems. In fact, large systems

located in green fields will receive penalties.

Furthermore, the Board added a provision in its new net metering rules requiring that 50 percent or more of the power produced must be used by the entity hosting the generation. These changes are likely to nudge the program closer to its original purpose: encouraging people to generate their own clean power, but at a scale that is sustainable, reduces the cost to Vermont's ratepayers, and lessens the impact of renewable energy generation upon the environment.

The basics

In practical terms, the rules for systems installed in 2017 and beyond come down to this.

- **Credits:** The owners of net metered generating systems will be credited for their excess generation – the energy they produce that surpasses their own needs and passes into the electric grid – at 14.919 cents/kWh. The credits are banked and can be used to pay for future electricity use (when they consume more power than they generate). Unused credits can accumulate from month to month for one year. After 12 months they expire.

The credit rate (14.9 ¢/kWh) is less than utilities have been paying for surplus net metered power. WEC, for example, has been paying members

19 cents or 20 cents, depending on the size of their generating systems. However, under the new rules people will be able to increase the value of the credits they receive through the "adjusters" that encourage siting their systems in preferred locations, and through transfer of their renewable energy credits. These provisions can add an additional 4 cents for every kWh generated – and it's important to note that this 4-cent adjuster applies not just to the extra power generated, over and above the owner's use, but to every kilowatt-hour that the system produces. It's a major incentive and a big change from prior net metering plans.

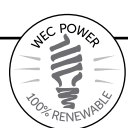
- **Charges:** Under the revised rules, new participants will not be able to "zero out" their electric bills. Net meterers have been able to do that because their credits for excess power could be monetized and applied to any charges on their electric bill, not just the power they purchased. The 2017 alteration means that everyone will eventually pay their utility's basic monthly customer charge, which WEC and the other companies rely upon to help cover some of the costs of operating, repairing, maintaining, and upgrading their electric systems. Net meterers will also resume paying Vermont's Energy Efficiency Charge (EEC), which supports Efficiency Vermont and its gamut of efficiency programs that benefit the entire state – such as "buying down" the retail cost of compact fluorescent light bulbs so they're affordable for everyone.

For the past two years, Washington Electric has paid net metering participants those premium rates of 19 cents and 20 cents per kWh, but WEC

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For the first time, the 2017 net metering rules address environmental and siting concerns. One feature of the rules is an "adjuster" that increases the value of the credits people receive for their excess generation when their solar panels are placed on an existing building, such as the barn at left.



WEC's 'Energy Transformation' Plan

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Tier III Compliance" (Tier III being the provision of Act 56 with the greatest operational and financial impact on Washington Electric Cooperative) is to continue installing publicly available charging stations for electric vehicles (EVs) within its service territory. WEC currently has four of these stations in operation, with a fifth scheduled to come on line in East Montpelier during 2017. It's notable that of all the energy sectors, bringing transportation in line with Vermont's renewable energy goals is the hardest nut to crack, especially in rural areas like WEC's service territory. Statewide, gasoline-consuming cars, trucks, and buses are responsible for 50 percent of the greenhouse gases expelled into the atmosphere.

"The Tier III program goals are intended to move members away from fossil fuels for heating and transportation," Richards explained. "We're starting small, but we expect the programs to catch on and generate significant participation in the future. Beginning now, we are encouraging our Co-op members to think seriously about how these 'energy-transformation' measures can be advantageous for them. Besides lowering their total energy usage and reducing their greenhouse gas emissions, the improvements we're promoting, when linked to weatherization, make homes more comfortable and healthy for their occupants."

The weatherization and residential fuel switching provisions represent one of the most significant expansions of services in many years for the Co-op, taking it beyond WEC's basic mission of providing affordable and reliable retail electricity for its 11,000 members. It's an opportunity to assist members to make changes that will have positive implications themselves, for the State of Vermont, and for our climate.

"Act 56 was created by the Legislature specifically for the purpose of moving our state and its residents further toward Vermont's goal of deriving 90 percent of our energy – in all energy sectors, not just electricity – from renewable sources by 2050," said Richards.

"WEC is in an unusual position, compared to most of Vermont's other utilities, in that we are already 100-percent renewable," she explained. (The Burlington Electric Department is the only other Vermont utility that can make that claim.) "Tier I and Tier II of Act 56 require utilities to incentivize and add more green distributed power to their portfolios, and secure more power from large, utility-scale renewable power sources. We're already there, and that's why our thrust relates to Tier III, which focuses on transferring people off of fossil fuels to renewable energy. Our contribution will be to work with members to reduce or eliminate fossil fuels used for home heating and hot water, and replace those with systems powered by solar energy or by electricity, because electricity from WEC is 100% renewable."

Teaming with Efficiency Vermont

Making a significant dent in thermal fossil fuel usage is not something the Co-op could accomplish on its own. Therefore, WEC teamed up with the Vermont Energy Investment Corporation (VEIC) in drafting its Tier III action plan, and will combine its resources with those of Efficiency Vermont in carrying the plan out. (VEIC is the administrator of Efficiency Vermont, or EVT). Funded largely by an "energy efficiency charge" on every Vermont customer's electric bill, EVT provides expertise and a broad array of services to residents, municipalities, and businesses to reduce their energy usage and the emissions of greenhouse gases produced by fossil fuel combustion.

WEC's and EVT's goals for 2017 are ambitious, but, Richards believes, realistic. Within the Co-op's 41-town service territory, WEC aims to increase the projected 40 homes for which EVT expects to provide weatherization services by 15, so that more member-owned homes will substantially lessen their energy usage by adding insulation, reducing air infiltration, and other "tightening" techniques. Total: 55.

EVT's 2017 projection for ENERGY STAR heat pump water heater installations is 25. WEC's goal is to increase that by 10. Total: 35.

For solar hot water systems, EVT

and WEC each envision at least one installation. Total: 2.

Pellet boilers, for residential settings, are gaining in popularity. EVT foresees assisting in three installations in the Co-op's area in 2017, and WEC will work to add another. Total: 4.

EVT had not projected any completed cold-climate heat pump installations paired with weatherization in WEC territory, but the Co-op will strive to recruit five homeowners for this modification; including weatherization will boost the heat pumps' efficacy in Vermont's cold winters. Total: 5.

On the surface, a law that requires utilities to increase their kilowatt-hour (kWh) electricity sales sounds like a boon for the companies. But Act 56 also sets targets that the utilities must meet, or pay a financial penalty if they don't: 2 percent of their overall energy sales for these purposes in 2017, steadily increasing to 12 percent by 2032. WEC's target for the coming year is to save an equivalent energy value of 1,533 megawatt hours (MWh) in lifetime energy savings by moving members off fossil fuels through its Tier III programs.

It will cost money for WEC to meet these targets, even though it comes at an inopportune time for the Co-op, which recently petitioned the PSB for a 6.52-percent rate increase. WEC has budgeted \$48,000 for its Tier III efforts in 2017, for costs associated with incentives and for financial assistance

for people who qualify under the income-eligibility guidelines set by the Vermont Agency of Human Services.

Importantly, low-income WEC members who take part in WEC's Tier III home-weatherization opportunities will be served through the state's Weatherization Assistance Program. This will help to conserve the money Washington Electric is investing, potentially broadening the impact of the program.

So how will this work?

Each partner – WEC and VEIC/EVT – brings something to the table. Washington Electric maintains ongoing communication with its members through bill inserts, an informative website, and *Co-op Currents*, which is sent to every member household, business, school, and office in WEC's service territory eight months a year. With additional public-service advertising through EVT, the Annual Meeting and community meetings that WEC holds each year, and with the assistance of WEC's well-informed member services staff, the Co-op will make the Tier III opportunities known to its members in Washington, Orange, Caledonia, and Orleans counties.

A great resource that EVT provides is a network of contractors who deliver Home Performance with ENERGY STAR thermal (meaning, heat-related) energy-audit and weatherization services.

"Weatherization efforts are the bedrock to WEC's Tier III plans," says Richards. "In every part of our new program, whether it's cold climate heat pumps or the water-heating technologies, a well-insulated and –weatherized home makes those following investments even more effective."

Of course, the energy audit needs to be affordable. People whose incomes make them eligible for financial assistance (using the state's guidelines for social services) can have \$300 of the energy-audit costs covered by the Co-op.

After the audit is completed, WEC will contribute to the costs of implementing the improvements recommended by the Home Performance with ENERGY STAR contractors. Contributions from Washington Electric will range from \$600 for weatherization improvements to \$250 for heat pump water heaters, \$500 for solar water-heating systems, \$1,000 for pellet boilers, and \$250 for cold-climate heat pumps. WEC will provide this assistance on a first-come/first-served basis until the Co-op reaches its 2017 budget limit of \$48,000.

Act 56 is one of several examples of Vermont getting serious about advancing renewable energy, addressing climate change, and improving the existing housing stock of its residents.

"These are laudable goals," said Richards, "so we hope that more and more of our Washington Electric members will choose to participate. We'll be providing further information to our members as 2017 gets underway."



The "blower door test" is a means for measuring air infiltration, and can also be used after weatherization measures have been performed to determine their effectiveness. Above, technician Bruce Courtot, then with VEIC, performs a test at a home in Plainfield in 2010.

Backup Generators

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emergency management coordinators, and to individuals in dire circumstances.

It's not any kind of formal program on WEC's part, and no promises can be made about their availability because there are, in fact, only four of these units in the warehouse waiting for the next time they'll be needed. But the Co-op can and does provide these resources, at no cost, on a first-come/first-served basis to help people or towns cope with an emergency.

Weston also mentioned this: "The most important thing we want people to know is that, if they're faced with a dangerous event, stranded without power and heat, it is entirely appropriate for them to call 911."

911 is often thought of as a number for people to dial to contact the police.

"But as of a few years ago," Weston said, "it also became a way to reach the dispatch services for a first-responder crew from a fire department or a local or regional emergency service. A lot of people seem to be reluctant to call 911 for that purpose, but it's really what they should do."

Weston also wanted people to know about the generators WEC can provide. Despite the fact that there are so few of them, he said, people and towns have put them to good use.

"They're premium quality and designed for long run times and a lot of use," said Weston. "During (Tropical Storm) Irene we loaned them out to

some of the fire departments; they went house to house in parts of their communities. If you power a house up for just an hour and a half you can keep it from freezing up, flush the toilets, maybe save the food in the refrigerator, and get the water pump going."

That said, for both the safety of the homeowner and of WEC linemen who may be working nearby, the Co-op must be particular about who connects the generators at each location. It involves pulling the outdoor meter, establishing connections, reinstalling the meter and turning the system on. It's not necessary for anyone to go inside the house. A WEC employee, or a fire department, or a group with a qualified electrician among them, are the options.

"Another reason we have them," Weston added, "is that in our efforts to continually improve and rebuild our power system we'll come across people who, for whatever reasons, cannot be without power – someone who works at home, or is on life support, or has a particular and very serious need. So if we have a planned outage – when we're taking down the system for a period of time while we work on it – we'll deploy one or two of these generators to help people manage. We did this several times when we were working in Cabot recently."

The major storms in recent years (Damon and Irene) had the benefit of making some Vermont communities eligible for federal funding which they've used to establish shelters – in local schools, for example – and equip them




WEC keeps a few well-maintained, industrial-strength generators in its warehouse, and can make them available during outage situations to Co-op members and local organizations (fire departments, town emergency committees).

with their own backup generators in case the storm has affected the shelters, too.

"For that reason," Weston said, "the demand for our generators has lessened. But it still exists."

Some of the troubling stories he has heard stick with him: an elderly couple stranded without power, with the additional burden that the woman was caring for her husband suffering from dementia (WEC promptly sent an employee with a generator); towns unable to plow their roads as diligently as they'd like because of budget restrictions. "They're plowing through the night less often," Weston said, "so it's not unusual for our utility trucks to be the

first entity to get through on an unplowed road. Often we're the first ones to come across people who are stressed out and need help."

Because WEC has just a limited number of these generators, and cannot always provide personnel to deliver and install them, their best use is likely to be as an additional resource for fire departments and emergency management committees that can assist a large number of people. But if they're available they can help individuals, too. Please don't hesitate to call if you or someone you know needs this kind of emergency assistance this winter. 

Net Metering

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has balanced those advantageous payments with a charge called the "grid service fee." Like the customer charge, its purpose was to help support the maintenance and operation of WEC's 1,250 miles of poles and wires (since the monthly customer charge falls far short of covering the Co-op's fixed costs). The grid service fee was designed to mitigate the unintended effect of net metering: i.e., driving up rates that would fall disproportionately on people without net metering systems. (Another term for this is "cost shifting.")

The grid service fee was instituted in 2014, when the PSB awarded WEC the opportunity to create its own net metering system in recognition of its superior performance in the program (Washington Electric had the highest rate of net metered systems installed of all the utilities in the state) – and because WEC had become 100-percent renewable, which meant that net metered solar and wind systems were offsetting renewable sources of power the Co-op had already invested in. The grid service fee was applied only to systems coming on line after July 2014. This was a pilot program intended to create a fairer and more sustainable net metering program for WEC and its members.


As of January 1, however, the grid service fee program will disappear. The Public Service Board did not include such a fee in its new rules.

So, rather than running three net metering programs – the original (or "Legacy") program, the 2014 program with the grid service fee, and the state's 2017 net metering plan – WEC will shift grid-service-fee members to the Legacy program. When their generating systems have been in place for 10 years, they will transfer to Vermont's revamped net metering program.

Logical adjustments

"The new rules show that the Public Service Board came to a lot of the same conclusions that we did when we were permitted to design our pilot in 2014," said WEC's Patty Richards. "They noted, as we did, that the cost of solar systems had come down significantly, and as a result there had been what they referred to as an unsustainable 'explosion' of net metering."

"We recognize that for people who invested in these generating systems, through a conviction that they were doing the right thing for their state and environment, the state's new rules present something of a shift in their plans and expectations. But we believe the PSB's rules will work for everyone."

The incentives for adopting net metering have changed, but for the right kind of installations they are still persuasive, and should also provide better outcomes for the state's ratepayers and for the environment. Co-op members who wish to learn more are encouraged to call WEC and look into the prospect of becoming net meterers themselves. 

Board, Bylaw Elections Coming Up

Washington Electric Cooperative's 78th Annual Membership Meeting is still several months away. It will be held during the first week of May, but so far the exact date and location are uncertain.

Yet it's not too early for WEC members to begin thinking about serving on their Co-op's Board of Directors – which is made up entirely of fellow Washington Electric Co-op members – and running for a Board seat in the upcoming elections. There are nine seats on the Board, and each year three of the terms expire and elections are held to refill them. One of the directors' whose terms will expire at this election cycle – David Magida, of Middlesex – has decided not to run for re-election. This makes it even more important for other WEC members to step up and run, and now is a good time to get started because election preparations take a little time. Incumbents Don Douglas of East Orange, who is WEC's Treasurer, and Mary Just Skinner of Middlesex, will both be seeking new terms.

People interested in becoming candidates should contact WEC Administrative Assistant Dawn Johnson at 802-224-2332 to request a candidate's packet that contains the materials necessary to run for the Board of Directors. There is a **Friday, February 10** deadline for all candidates to submit these materials, including a petition signed by at least 25 WEC members, which serves as an endorsement by fellow-members of the candidate's legitimacy. *Co-op Currents* begins its coverage of the Board elections in our March issue, with introductions of the candidates, followed in April by their responses to questions pertaining to their interests and backgrounds, and what their priorities would be as leaders of the not for profit, member-owned utility.

The elections leading up to the Annual Meeting also provide members an opportunity to petition for changes to the Cooperative's bylaws, Washington Electric's governing document. You can obtain a copy of the bylaws through the Co-op, or read them at the WEC web site. If there is a change you would like to see, as a Co-op member you have the right to petition for it and bring it to a vote of the membership. That takes some time, as the signatures of a minimum of 50 WEC members are required for this effort. Petitions for bylaw changes will be due on **Wednesday, February 8**.

We'll publish more related to the Board elections and bylaws in our January 2017 issue.

