

WEC CO-OP CURRENTS

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

June 2011

Washout: WEC's Office Flooded In May Storm

Central Vermont took a licking on Thursday evening and Friday morning, May 26 and 27, when six inches of rain drenched the region in an intense downpour, accompanied by nearly constant lightning and threats of a developing tornado. Streets were flooded in several communities as storm-drainage systems were inundated beyond their capacity and bridges and culverts, clogged by debris, spewed water into the roads. The villages of Plainfield and Cabot were especially hard-hit, with bridges, roads, and parking areas destroyed.

In East Montpelier, the hillside behind Washington Electric Cooperative's office building became saturated, as the culvert – designed to carry storm water underneath the building and parking lot, below routes 2 and 14 and over to the Winooski River – was overwhelmed. Consequently, mud, water, and septic waste filled the area, indoors and out.

"Around ten o'clock that night Dan [Weston, WEC's operations director] called from his home to tell me that the dispatchers, who were on duty to cover the storm, were reporting an inch of water in the building," General Manager Avram Patt said on the Saturday after the storm. "I called in later, and talked to [Field Engineer] Brian Wilkin. He told me the water was rushing in from the back and covering the whole floor

downstairs with nearly six inches of water. The people who were taking outage calls and dispatching the storm were opening the front door to let the water out and moving things inside the building to try to protect them from damage. We got a backhoe in there during the night to try to divert the water from the rear of the building.

"By Friday morning there was three or four feet of mud and gravel across the whole parking lot. The road contractors had just finished paving our little access street, which was created after the Route 2 and Route 14 intersection was reconstructed last summer. There was new landscaping, and trees had been planted. Much of it was washed away."

Across the intersection, at Buy-Right Auto Sales, a section of the parking area had buckled, and two of the automobiles were wedged against each other in a deep, V-shaped crevice. Route 2, at both ends of the village, was flooded and impassable through much of the morning, and a section of Route 14 between East Montpelier and Barre was closed off – and remained so for two weeks. The little village was something of an island above the water – but a muddy, messy, and polluted one at that.

For WEC, the upshot was that its headquarters became virtually

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A "Keep Out" warning for boaters? The Winooski River was well over its banks in East Montpelier on the morning after the May 26 flood.

Apres WEC, Le Déluge WEC Holds Its Annual Meeting Just Before The Storm Voters Return Three Directors, Affirm HQ Contract

Who could have known, as 153 people came together on Wednesday evening, May 25, to celebrate Washington Electric Cooperative's 72nd Annual Membership Meeting, that in a mere 24 hours so much would change for the Co-op and all of central Vermont? Wednesday was a warm and pleasant evening on the hilltop where the Montpelier Elks Club is located, the early-summer weather conducive to a good turnout of members and guests. Matters seemed well in hand

as WEC's officers and membership discussed the Co-op's short- and long-term future.

Yet by the following evening the region was engulfed in a tremendous storm; the National Weather Service broadcast tornado warnings (which thankfully did not come true), and floods washed away roads and bridges, knocked down power poles, and inundated homes and businesses in low-lying areas.

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Washington Electric Cooperative

East Montpelier, VT 05651

Inside

A word of caution. Sale of CVPS could have ramifications for control over Vermont power decisions. See President's Message, page 2.

The long view. DPS Commissioner guides WEC members through state's energy planning work. Page 3

Mayhem on the Brook Road. Plainfield lost a bridge and much of the road in the great washout, and WEC lost some power poles. Pages 4 and 5.

Too much water for Wrightsville – and that was *before* the May 26 flood. Turns out you can't generate hydropower when the reservoir is so full. Story on page 8.



ROW Management Coordinator Mike Myers signs members in at the WEC Annual Meeting on May 25.

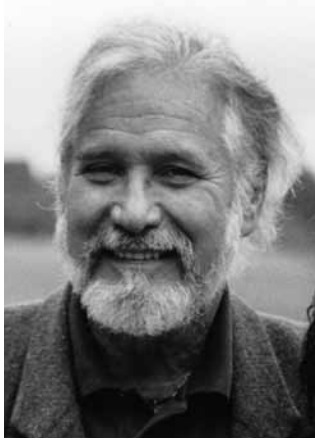
President's Message

A Spring With No Letup; Plus... CVPS Sale Demands A Close Look By Vermont Regulators

By Barry Bernstein

Most of us may have thought we were due a break after the long, cold winter and the abnormally wet spring melt. However, Mother Nature has had other plans as we've moved toward the summer solstice on June 21. The May 26

storm dumped six inches of rain in six hours over many of our communities in central Vermont, with Barre, Montpelier, and St. Johnsbury being very hard hit. While, fortunately, most of our service territory was spared, some of our members were heavily impacted, as were the road systems that connect us all. This includes WEC's office in East Montpelier, which sustained more than \$200,000 in damages as a result of storm water and sewage backup



running through the first floor.

During hard times like this I really appreciate and am proud of our neighbors and communities, as folks have pitched in to help each other out. Over the next several months please remember to try to shop locally, especially at those businesses who

are struggling to get back to normal after sustaining significant losses. Special thanks to Governor Shumlin and the Emergency Board for helping to make \$1 million in 1-percent loan funds available to Vermont businesses hurt by flooding. I'd also like to acknowledge the leadership in difficult times provided by Mary Hooper and Thom Lauzon, mayors of Montpelier and Barre, respectively.

How will the predominance of foreign-owned utilities influence the control of VELCO and future decisions regarding power purchases and development of Vermont's renewable-energy resources?

CVPS sale

The recent announcement by Central Vermont Public Service Corp., Vermont's largest electric utility, serving 187,000 customers, to sell out to Fortis, a Canadian company raised serious concerns throughout Vermont. The sale, if approved by the Vermont Public Service Board, would mean that the state's two largest utilities – CVPS and Green Mountain Power Corp., purchased in 2007 by Gaz Metro – both would be Canadian owned. Since the two utilities are also majority shareholders of VELCO – the company that owns the electric-transmission infrastructure in Vermont, over which all wholesale power flows in and out of the state – this places significant control of Vermont's electric distribution and transmission network in Canadian hands. It should be noted that Vermont Gas Systems Inc., which supplies natural gas to Chittenden and Franklin counties, and the hydroelectric dams in the Connecticut and Deerfield rivers, are also owned by Canadian companies.

What does this mean for the development of our own in-state power resources, particularly renewable ones? Will Canadian-controlled companies be as concerned for Vermonters' interests as locally owned utilities are? How will the predominance of foreign-owned utilities influence future decisions regarding such issues as power purchases? Is there a danger that Vermont would lose its ability to influence future decisions that could essentially make our state a transmission corridor for Canadian power going to the energy-hungry cities south of us?

These are just some of the questions that need to be addressed and have been raised by Gov. Shumlin, former PSB Board Chair (and WEC member) Richard Saudek, and others.

Has anyone thought about public or cooperative ownership of CVPS and VELCO as alternatives?

The sale of CVPS and its collateral

implications need to be fully explored before any approval is granted by state regulators of the company's purchase by Fortis. Before such a sale takes place, the full ramifications to Vermont's energy future and our energy independence need to be reviewed with full public input.

Vermont has missed a number of significant opportunities for energy self-determination in the past, the 2005 purchase of the Connecticut and Deerfield River dams being the most recent, and we must be careful not to lose control of our resources and energy future going forward. When George Aiken was governor he fought against out-of-state control of Vermont's electric utilities (primarily, at the time, Boston-based corporations). Let's hope we do not forget the importance of Vermont's remaining independent and in control of our energy future.

WEC Annual Meeting

I want to thank DPS Commissioner, Elizabeth Miller, for her presentation on Vermont's energy future and the 20-year energy plan (see "A Diverse Energy Future," page 3). Her talk was very well received by our members attending the Annual Meeting, and was pertinent to the important energy decisions that must be made in Vermont. Copies of her slide presentation can be obtained from the Co-op.

The Co-op's rate case

At this writing, WEC is in discussions with the DPS over our application before the Public Service Board for approval of the rate increase that we implemented – provisionally, as a temporary surcharge – in January. This is all part of the approval process. If the Co-op and the DPS were to reach a mutually acceptable agreement, the parties would then take the proposed agreement to the Public Service Board, seeking its approval.

We will keep members apprised of the progress of our rate case.

The next few months will be very hectic for WEC staff, who have been displaced to the doublewide in the WEC parking lot. We ask for our members' patience when you call or come into the office, as everyone is trying very hard to keep things moving forward while at the same time we are in the midst of rebuilding the interior of our offices.

I hope we all get to enjoy summer, hopefully with a bit less rain. 🌧️

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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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.

Miller: A Diverse Energy Future, And the Challenges of Getting There

Elizabeth Miller is the commissioner of the Vermont Department of Public Service, appointed to the position by Gov. Peter Shumlin in January. The DPS differs from the Public Service Board (PSB) in that it is not a permitting agency, but rather an arm of state government charged with representing the interests of citizens in matters regarding regulated industries, including electric utilities. Miller was the guest speaker at Washington Electric Cooperative's 72nd Annual Membership Meeting on May 25 at the Montpelier Elks Club.

Miller is overseeing the preparation of a Comprehensive Energy Plan & Twenty-Year Electric Plan for the administration. Fittingly, her talk to WEC members was titled, "Energy for Vermonters: Weighing Our Choices and Making a Plan." Miller was an engaging speaker whose presentation helped WEC members put their Co-op's policies and challenges into a broader, statewide context.

As Miller explained, "The state is charged with doing an energy plan every five years with a 20-year forward look. We actually haven't had a comprehensive plan since 1998, although a tremendous amount of work was done during that time; policies have been evolving. But we needed to take a comprehensive view. The governor was very clear that he wanted a plan at the executive level for our state's energy future."

The 20-year energy plan will address "the whole picture," Miller said, including heating fuels and transportation as well as electricity, with the goal of reducing energy consumption across the board. She indicated that the administration's plan would share the Legislature's goals of prioritizing conservation and energy produced within Vermont – and took a moment to praise the Legislature for its passage of H.56, "The Vermont Energy Act of 2011," signed that day into law. Among many provisions, the bill expands support for net metering on a larger scale in Vermont.

"If we can lessen Vermonters' energy use we'll be helping the economy," Miller said, "and by turning to in-state energy [sources] where possible, the better it is for our sustainable energy future, for economic growth, and for creating jobs."

Miller used pie charts and other graphics to demonstrate trends, goals, and statistics. Her first chart – "Total Energy Usage In Vermont" – revealed roughly equal, one-third proportions presently going to transportation, residential, and commercial purposes. Twenty-three (23) percent of the total comes from renewable sources, mostly in the electricity sector; that's good, Miller said, because the state's goal



DPS Commissioner Elizabeth Miller was the guest speaker at WEC's Annual Membership Meeting. Her address focused on Vermont's energy challenges and progress on the state's Comprehensive Energy Plan.

is 25 percent. What's not good, she said, displaying another graph, is that the trend line for total usage is going up. The energy plan under development will seek to bend that line downward.

The news was similar regarding greenhouse gas emissions – a pattern of reductions in emissions that looked good until you compared it with targets set by RGGI (the Regional Greenhouse Gas Initiative, in which Vermont is a partner).

"We're not going to hit the 2012 goal," Miller said. "It's possible we can hit the 2028 goal; this graph shows that the trend is in the right direction but the curve needs to be steeper."

Twenty-three percent of Vermont's energy usage comes from renewable sources, mostly in the electricity sector. That's good, Miller said, because the state's goal is 25 percent; what's not good is that the trend line for total usage is going up.

Vermont's, most immediate challenge, Miller said, is to make the wisest choices for addressing a drop off of "committed resources" for electricity when presently contracted supplies begin reaching termination dates in 2013. In this regard, she told WEC members, their Co-op is better situated, with production at the Coventry generating station, which is fueled by landfill gas, contracted into the 2030s, along with other stable sources.

"You're committed well into the future," said Miller. "You're in good shape. You have a different picture from

the statewide picture because of the work your Board of Directors has done."

Report on renewables

Because Vermont is not a state with fossil-fuel reserves (coal, oil, natural gas), in-state generation mostly means renewables. So where do we stand with those resources now?

Miller had the answers.

Biomass: The commissioner said biomass provides 6.5 percent of the state's electric load. "This is mostly Ryegate and McNeil [large woodchip-burning electrical plants], Coventry, and biomass heating plants in several Vermont schools and some other facilities."

Geothermal: Geothermal systems contribute indirectly to the state's energy picture by providing a baseline of heat from the earth (and in some cases from water), thus reducing the demand on other sources. But Miller said that in Vermont geothermal systems account for less than 1 percent of our energy.

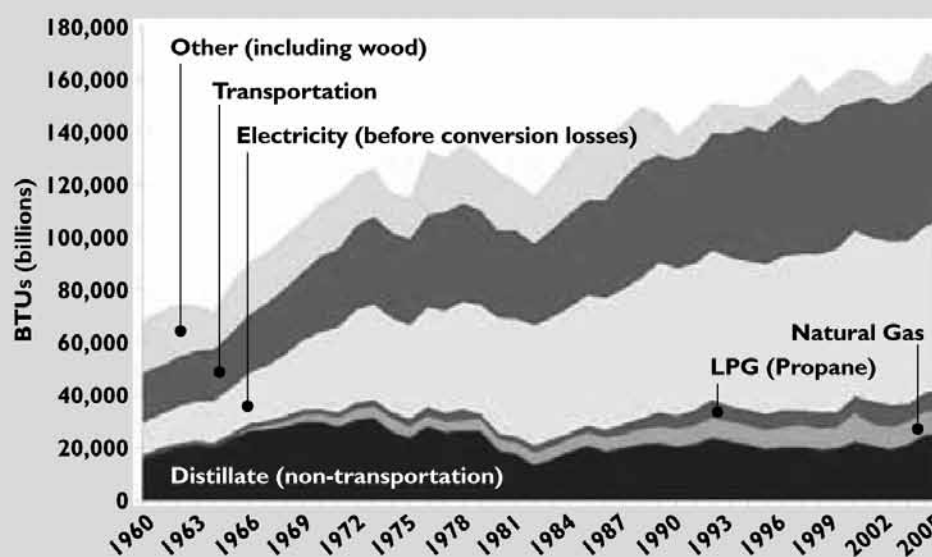
Solar: "There has been a lot of legislation and initiatives by utilities in Vermont to encourage solar energy," Miller said. "It's not much of our load right now [less than 1 percent], but it's going up." Miller also commented on Vermont's progress with net metering, which allows individuals and groups who generate their own electricity to channel their excess power into their utilities' power lines, for credit. "It's amazing how many net-metering applications come across my desk in a given week," she said. "It is really worth doing."

Wind: The only operating wind-electric facility in Vermont is GMP's 14-year old, 6-megawatt (MW)

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Vermont's Energy Consumption by Category

Vermont's energy consumption has risen significantly from 1960 to 2005, most notably in the transportation and electrical sectors. Without reducing consumption and increasing investments and activity in conservation and efficiency, it's likely those numbers will continue to rise.



Washout

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unusable. The garage and operations center – about a mile away on a still-passable section of Route 14 – was not impacted, so throughout the ordeal and the days that followed the Co-op kept up with demands in the field, dispatching line workers to attend to problems caused by flooding, winds, and fallen trees. But the office was a mess.

You can't simply close down an electric utility to make repairs, so staff members were hurriedly scattered around to other locations and the Co-op did its best to respond to members' needs, even as it confronted the problem of what to do with its own building.

"The Member Services Department was the worst hit," said Patt. "There were several inches of water on the floor, and the septic system had backed up and mixed with the water. It was not possible to work in there. So on that first day [Friday, May 27], we had no Member Services Department."

By the second day the department was installed in makeshift quarters generously provided by Goddard College. WEC's IT manager, Kevin Stevens, worked feverishly to set up enough equipment there to enable those employees – who are the main link to WEC's members – to get back to work answering phones, processing bills and payments, and responding to members' needs; but it was not an entirely smooth transition, since so much time had been lost and the quarters and connections were just temporary.

The three-person Finance Department works on the second floor in WEC's building (there is only a small portion of office space up there), so they were able to continue working once the downstairs had dried out. Patt and Products & Services Director Bill Powell work in a corner of the downstairs least affected by the flooding, so they, too, stayed at their posts.

"We got contractors in quickly and they removed the carpets before fungus and mold developed," said Patt. "But it



WEC Operations Director Dan Weston (left, above) and Maintenance Foreman Rich Hallstrom survey the damage to the Co-op's poles and wires on Brook Road in Plainfield. They had to walk to the site because the road was barricaded to traffic. At right, a broken tree lies across the conductors.



smelled. By the third day I felt like I was working next to a cat litter box."

The Engineering Department installed itself at the operations center, so within a couple of days WEC was fully operable and preparing for what comes next. It didn't take long to figure out what that would be.

"We knew we would have to gut the building and start from scratch," said Patt. "So we made the decision on the first day to bring in a doublewide office trailer and set it up in the parking lot. By June 6, most of our people were able to work from there. The Old Brick Church next door is generously allowing us to use their meeting room, their bathroom, and their kitchen. We expect to be working this way pretty much through the summer, while our building is restored."

Recovery underway

Washington Electric Co-op has worked out of the modest East Montpelier building since soon after the Co-op was founded in 1939. As WEC has grown and its needs and responsibilities have increased, the pattern has been to attach a new room here, a small wing there, and generally make do with the original building (except for the addition of the operations center and warehouse on Route 14, in 1973, home base for the line workers and where the vehicles and equipment are stored and maintained).

Because of its age, the office building was in many respects outdated;

this includes inadequate insulation in some sections of the building; the workspaces and lighting for some of the staff was poor; and the server room where the IT equipment has been kept lacked the climate controls (regulating temperature and humidity) necessary for protecting sensitive, expensive, modern equipment. If there was anything good about the flood, it's that the redesign and reconstruction that are now necessary will enable Washington Electric to address those issues at the same time.

"We were insured," Patt said, "although we have to wait for the adjuster's decisions and contractors' estimates to learn specifically how far



In places, nearly all of Brook Road was washed away, as the Great Brook aggressively expanded its territory.

the coverage will go. We do have flood insurance as part of our insurance package – which is affordable if you're not in a flood plain, as we aren't. Gutting the building gives us the best opportunity to do energy-efficiency work for thermal advantages as well as state-of-the-art energy-efficient lighting."

Substantial excavation work will be done behind the building, with better drainage and a design that will divert water across the parking lot should the system be overwhelmed. To the extent that such necessary work exceeds insurance coverage, and that important design improvements are not paid for by insurance, Patt said the costs would come out of WEC's capital budget, not the operations budget. Those expenses will not directly affect members' electric rates.

The first concern for WEC employees was to become fully functional in their temporary quarters. The trailers were delivered on Monday, June 6.

"It has been a strain, particularly on our Member Services folks," said Patt, "and on our manager of information systems specialist, Kevin Stevens, who has worked incredibly hard, with help from almost everyone really, to hook up electricity and all our computer networks and telephone lines at



Water overwhelmed the culvert system behind WEC's office building (shown, left, some 12 hours after the flood), sending dirt, water, rocks, and septic waste into the building and across the parking lot.


temporary locations. Everyone's been doing the best they can."

And "friends-indeed" have shown their colors. WEC particularly is indebted to those who provided critical material support: to Goddard College, which hastily arranged for temporary workspace for staff; and to the Old Brick Church, which has opened up its meeting room, kitchen, and bathroom facilities. Colleagues at Vermont Electric Co-op and New Hampshire Electric

Co-op generously offered technical and staff assistance, but WEC was able to decline their offers, with thanks. Others have provided moral support, often through the time-honored tradition of food! Hunger Mountain Co-op in Montpelier sent over a welcome lunch during those first emergency hours, both to WEC staff ensconced at Goddard College and those still working in the office. La Capra Associates – WEC's energy-supply consultants –

sent a congratulatory lunch when the office-trailers arrived.

"We've had a lot of nice offers of help," said Patt, "and when they find out there's really not much they can do, they buy us lunch! And that's really appreciated."

Co-op Currents will report on the progress of refurbishing WEC's headquarters, and other long-lasting effects of the flood, throughout the summer. 

Co-op's System Escapes THE FLOOD With Limited Damages

For several central Vermont communities the intense May 26 thunderstorm and floods were a disaster. For Washington Electric Cooperative's electric-distribution system, surprisingly, not so much.

There were damages, and at one point, briefly, four the Co-op's eight substations went down. That power interruption affected roughly 5,000 homes and businesses – half of the Co-op's membership. But it had nothing to do with structural or equipment damages at the substations; rather, the outages were caused by failures on Green Mountain Power's transmission lines that carry power to them. The affected facilities were WEC's East Montpelier, Maple Corner, Walden, and Moretown substations.

What was important to WEC members, of course, wasn't who owned the lines or why the power went out, but how long the outages lasted. With the exception of the Moretown substation, the interruptions were, thankfully, brief, around a half hour.

"GMP did their job well," said WEC Operations Director Dan Weston. "GMP had a lot of challenges in this storm; they experienced some very high water issues in and around Montpelier and Barre, and they couldn't even get to some parts of their system to make repairs. But the outages on those transmission lines did not take long for them to track down and correct, so all but our Moretown substation came back on pretty quickly. We then made phone calls to some of our members and were able to establish that the majority of our system, probably 98 percent, had come back up once power was reestablished."

The Moretown substation was affected the longest. WEC members whose power comes through that facility waited more than two hours to get their electricity back.

In a storm this severe, there were bound to be some damages to WEC's system. Weston described the most-affected area as swath through the center of the Co-op system, generally extending from Williamstown and Northfield north to Calais and East Montpelier.

"That's what hit the office," Weston pointed out, in reference to WEC's East Montpelier headquarters: "those torrential downpours."



WEC's new, temporary, office building – a doublewide trailer designed with office space inside – was installed in the parking lot on Monday, June 6. For Manager Avram Patt, pictured on landing, a clean and fresh workplace was a welcome change.

Worst hit was the Brook Road in Plainfield, which extends south toward Barre Town. There (not for the first time) the Great Brook became a bucking bronco of water, tearing away at its western bank and undermining the road itself. In portions, the road was reduced to a couple of feet of remaining surface – and that, crumbly, undercut, and insecure. Down in Plainfield Village, the Brook Road bridge was washed out and houses were threatened.

Back up the hill, some WEC power poles lost their footing as the brook swelled, and fell into the newly formed gully. The power lines stayed intact, but lay across the road and along the ground and in the trees on the other side.


"That was the nature of the damages for us from this storm," Weston said. "A few broken or washed out poles, and trees uprooted by wind and saturated ground and falling into our wires. The damage was dramatic in those places, but on the whole this storm was not as destructive for us as one might imagine."

The problem on the Brook Road was where to put the replacement poles, considering that the ground on which they had stood no longer existed. Oddly enough, the temporary solution – with the town's blessing – was to put them pretty much in the middle of the remaining road. When Plainfield is able to rebuild the Brook Road and its banks, WEC will find more permanent solutions.

During the night of the storm, as reported elsewhere in this issue, the very people who were dispatching the line crews were being overrun by water

and mud at the Co-op's own building. Still, the number-one job for the staff was seeing to outage repairs.

"The line crews and dispatchers were not pulled off their jobs," Weston emphasized. "The priority was restoring power – and we've kept right at it since then, cleaning up the problems left by the storm."

NOTE: Although WEC escaped with limited damages, the May 26 storm and those that followed for several days were severe, and there may be threats to WEC's system that we don't know about. These could take the form of broken, weakened, or leaning trees, hovering dangerously over the power lines. WEC urges members who see potential problems to contact us. 

Annual Meeting

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The Co-op's work plans – described Wednesday in reports by President Barry Bernstein, and General Manager Avram Patt – were not significantly altered by the storm: WEC will proceed with the reconstruction this summer of its East Montpelier substation, and with the gradual introduction of AMI (Automated Metering Infrastructure). But the night after Annual Meeting the Co-op's office building in East Montpelier was flooded and rendered almost unusable, and all plans took a backseat to making Washington Electric fully operable as soon as possible. (See "Washout," page 1)

No one foresaw all this on Wednesday evening. Instead, the Co-op and its members were taking care of business, starting with the election of three candidates for the Board of Directors (all of them incumbents this year) for three-year terms. The majority of votes had been cast earlier by mail, and were added to 10 votes cast at the meeting. Re-elected were Directors Donald Douglas of East Orange (1,079 votes), Marion Milne of Washington (1,079 votes), and David Magida of Middlesex (1,061 votes). There were 15 assorted write-in votes.

Bernstein observed that the 10-percent member-participation in the vote was considered a good turnout among electric cooperatives, particularly in an uncontested election for directors.

The voters also supported Washington Electric's participation in the upcoming 22-year (2016-2038) power-supply contract between Vermont's electric utilities and Hydro-Quebec. WEC will have an unusual role in that contract, handing off its percentage of HQ power in the first eight years or so to Vermont Electric Co-op, because WEC anticipates having sufficient power during that period from its own and other contracted sources. Vermont Electric Co-op will pay for the HQ power, and Washington Electric will be able to reclaim it, temporarily or permanently, as the need arises. These provisions were approved by the PSB (Vermont Public Service Board), and



It's The Barrel Man! Charlie Hall, of West Topsham – known for his barrel business and his enthusiasm for homemade electricity – made sure not to miss WEC's Annual Meeting.

overwhelmingly (1,218-10) by WEC's membership, with the encouragement of the Board of Directors.

After an hour of socializing over a dinner fit for localvores – locally produced ham and turkey, salad, bread, and ice cream, with brownies baked by the Elks Club staff – Bernstein called the meeting to order by welcoming a number of guests: local state senators and representatives, utility and state-agency officials, consultants in WEC's power-supply projects, and others. Next, Bernstein and General Manager Avram Patt presented service awards to Co-op staff members who had reached employment milestones: Safety & Environmental Compliance Specialist Scott Martino (20 years); Products & Services Director Bill Powell (20 years); and Class A Lineman Dennis Bador (40 years – a great achievement). Patt received a service award for 15 years with the Co-op.

This was followed by the surprise presentation by the Board of Directors of a Certificate of Appreciation to Vice President Roger Fox of Walden "For 20 years of Service to Washington Electric Co-op and its Members." The certificate read, in part:

"In addition to his commitment to the membership and to a cleaner and sustainable energy future, Roger has also paid particular atten-

tion to assuring effective and open functioning of the Co-op's Board of Directors, member communications, and to the Cooperative Principle of democratic governance."

Officers' Reports: "Your money," and how it's used

While the evening's featured event was an address by guest speaker Elizabeth Miller, commissioner of the Department of Public Service (see "A Diverse Energy Future," p. 3), the reports by Patt, Bernstein, and Treasurer Don Douglas also covered important territory. In his Treasurer's Report, Douglas reiterated the causes of WEC's applying to the PSB last November – earlier than the Board had anticipated – for a 23.81-percent rate increase, which was instituted provisionally in January. In 2010, the treasurer noted, WEC was forced to withdraw \$1.77 million from its deferred-revenue account to cover expenses and meet its lenders' capital requirements.

"And that," Douglas said, "pretty much used up what we had."

The Board had expected the deferred-revenue account to provide a longer reprieve before a rate increase was needed.

"But the value of our renewable energy certificates [RECs] plummeted, and the value of the excess energy we sold back into the market also plummeted," said Douglas. "The deferred-revenue account basically isn't there for us anymore, which meant we needed an increase in rates."

Douglas reminded the members that WEC is a nonprofit, cooperative utility, and that it has had a capital credit refund program since 1999; each year since then the Co-op has "retired" margins from earlier years by sending those refunds to members. To date, approximately \$2.5 million has been paid to members and former members, and more will be coming in the future as WEC earned \$259,721 in margins in 2010. Those margins (which would be profits, and would be distributed to shareholders if the Co-op were an investor-owned utility), were assigned to members' capital credit accounts in proportion to how much electricity they purchased last year.

"That's your money," Douglas said. "We've been returning money to the members since 1999, starting with our first margins. We're now up to 1991 – returning more than 50 years of margins over the past 11 years."

Bernstein, following Douglas with his President's Report, described the 2010 rate-increase application (now under review by the PSB and DPS) as perhaps the hardest decision the Board has had to make. But he underlined the necessity of obtaining the funds WEC needs, saying, "We're not going to make short-term decisions that really don't serve the Co-op."

He also pointed out the improvements WEC has made in terms of electricity and member service.

"I'm going on 40 years as a Co-op member," said Bernstein, "and I remember in the 1970s multiple double-digit rate increases, and when the lights went out you just lit your candles and didn't say anything."

Next up was Avram Patt's Manager's Report. Patt noted highlights of the "Service Quality and Reliability Monitoring and Reporting Plan" (SQRP) required annually by the PSB and reported to WEC members in the April 2011 *Co-op Currents*. In 2010 WEC met all but one of its 12 service-quality targets – programming errors had caused mistakes in one billing cycle – and Patt praised WEC's staff members for the achievements.

The biggest news Patt presented was WEC's preparations for making "significant" progress in the new four-year work plan for installing system-wide Automated Metering Infrastructure. Vermont is moving toward a statewide AMI infrastructure, and WEC will do its share. AMI – also called "smart metering" – provides two-way electronic communication between utilities and the meters at customers' homes and businesses. It will simplify billing, improve efficiency by helping companies locate and repair faults and outages more quickly, and enable Co-op members to track their personal electricity usage through a secure Web site.

Patt also had this to say:

"You may have read that some people have raised health concerns about automated metering because of the wireless nature of the technology, and the impact of electromagnetic fields that may occur from having a smart meter installed at their home. WEC does not have a position on that issue, but the important thing to know is that there are two different types of AMI systems that can be employed: Radio Frequency Mesh (or 'RF'), and Power Line Carrier, which uses electric lines rather than radio frequencies to transmit metering information. We have chosen a Power Line Carrier system, not because of health concerns about wireless radio frequency meters, but because Power Line Carrier makes the most sense for WEC for a number of other reasons. But this should allay anyone's concerns about health issues related to our meters, since they will not be the wireless radio frequency kind."

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Bob Murphy staffs Efficiency Vermont's display table at the Co-op's Annual Meeting, showing members the wonders of modern energy-conservation technology.



WEC President Barry Bernstein, with an elk watching his every move, calls the Annual Meeting to order. Seated, at left, is Manager Avram Patt.

Annual Meeting

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On members' minds

Co-op Annual Meetings are a forum not only for WEC's officers and administrators, but for members to have their say and get answers to their questions.

Calais Co-op member Alice Blachly asked why WEC had signed onto the Hydro-Quebec contract with expectations of needing more power in the future, when the Co-op makes claims about conservation, efficiency, and generating its own electricity.

Patt replied that most of the anticipated increase will be through growth in membership, not through existing members consuming more power.

"In this area of the state, if someone builds a new house it's most likely to be in our service territory, which is rural," he said, "because that's where the land is. Also, over the next 10 to 15 years

we may see people using electricity for things they haven't been, like transportation – electric cars. We expect to see a modest amount of growth that way."

Member Alexandra Thayer, from Plainfield, urged the Co-op to find a way to support members installing solar hot-water systems. (Thayer and her husband, Ed Hutchinson, installed such a system and are delighted with it.) Patt was not able to say how WEC could provide assistance – though he steered interested members to Products & Service Director Powell for information – but he endorsed Thayer's opinion.

"If you have some money to invest in your home, if it were me I'd invest in solar hot water first."

Finally, WEC member Katie Anderson (Peacham) passionately criticized the First Wind, 40-megawatt wind farm project now under construction in Sheffield, which the Co-op has supported, and from which

WEC and other Vermont utilities will purchase power. Anderson said the project was destructive and implored WEC members to show support for the idea of compensating residents within view of the Sheffield project. Just seven people raised their hands in agreement. Anderson was followed by member Annegret Pollard, who also spoke vehemently against wind projects, focusing her comments on the GMP/VEC project in Lowell.

Bernstein thanked both members for their comments, and addressing Anderson said, "We appreciate your expressing your beliefs about wind. Not everyone shares the same perspective, but obviously it's an emotional issue."

With that, the meeting turned to the presentation of door prizes – always a highlight – and then people filed out to a peaceful evening sky, little knowing what turmoil the sky would bring over the next 36 hours.

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Wet Spring Temporarily Idles Wrightsville Dam

Water, Water Everywhere, And Not a Drop for Power

Stating the obvious: You need water running through the turbines of a hydroelectric plant in order to produce electricity. So water is good, right?

Actually, not always. The spring of 2011 was one of the wettest on record, even before the May 26 storm and the flooding it caused. Farmers endured saturated fields and early crop damage; Lake Champlain overflowed its basin, spilling water across roadways and into camps and homes in low-lying areas of the basin, and inundating state parks.

And of all things, high water levels impeded hydroelectricity generation in Vermont, including at Washington Electric Cooperative's 1-megawatt (MW) hydro station at the Wrightsville Dam in Middlesex. There was too much water in the reservoir to make electricity.

The Wrightsville hydro station gets overshadowed by the Co-op's 8-MW generating facility in Coventry, Vermont, which is fueled by landfill methane and produces more than half the amount of power WEC supplies to its 10,500 members. Still, a megawatt of production at Wrightsville is nothing to sneeze at, especially for a relatively small utility like Washington Electric. Run a 1-MW facility for 24 hours and you're producing 24 megawatt-hours of electricity (members' bills are calculated in kilowatt-hours, which is one-thousandth of a megawatt-hour). During the course of a year WEC's hydroelectric station supplies around 3,200 MW/h of electricity for Washington Electric, sometimes up to 5 percent of its needs.

There's also something else neat about the Wrightsville power dam: The electricity it produces goes directly into the local distribution system supplied by WEC's East Montpelier substation. Almost everywhere else, including at

Coventry, power stations feed their electricity into the grid – the region-wide electric system operated by ISO-New England. But WEC members served by the East Montpelier substation are getting the very electrons generated at their local power dam. It's home-grown.

Except that, for much of May, it wasn't. The explanation lies in something called "head pressure."

"Head pressure is produced by the vertical drop of the water; it's caused by the altitude of the pond – the distance between the pond and where the turbines sit," said WEC Engineering & Operations Director Dan Weston.

"The reservoir elevation got so high in the spring that it exerted too much water pressure on our turbines. Under those circumstances you can't run the turbines because it overpowers them."

In fact, you can't run the turbines

because they turn themselves off.

There are protective devices on each of the three that sense when the water pressure is excessive and would endanger the turbine.

"It shuts down the butterfly valve that allows water to flow through that particular turbine. The control devices worked exactly as they should," said Weston.

At 666 feet above sea level, the #2 generator tripped off. The pond elevation continued to rise, to 678 feet. WEC refrained from putting the station back on line until the elevation dropped to 662 feet.

The Wrightsville turbines are designed to different sizes to maximize production and enable the Co-op to operate the system most efficiently. For example, the smallest of the three generates 75 kilowatts (kW), and is

useful when the flow of water through the system is at its lowest, though still sufficient for generating power. During even dryer times, Weston said, "what comes in, goes out." WEC's operation of the dam is subject to regulatory requirements that mandate a minimum flow in the North Branch to protect the health of fish and the overall aquatic ecosystem.

The most productive seasons for the Wrightsville hydro station are the spring and fall – the spring (actually the latter part of the winter, through May) because of the runoff of water from higher elevations, not to mention those famous "April showers"; in the fall (September through December) there is typically a lot of precipitation in Vermont.

The summer is when the plant is most likely to be idle – "It putters along, unless we have good rain events," said Weston – though we'll see what happens in this year of unusual weather.

Water is the lifeblood of human existence – in fact, of all life on Earth. But we've seen this spring that there can be too much of a good thing, even for generating hydroelectricity. 🐸



The Wrightsville Reservoir, two weeks after the flood. The line of debris in the foreground reveals how amazingly high the water line was at its pinnacle in May – far too high for operating WEC's power station.

Elizabeth Miller

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wind farm in Searsburg. However, another four or five planned facilities are working their way through the state permitting process, including First Wind's 40-MW Sheffield site, from which WEC plans to purchase power. "If all those projects are approved, wind would achieve around 6 percent of our supply, comparable to biomass," Miller said.

Efficiency: The cheapest and cleanest energy is the energy you don't buy or consume. Miller said efficiency efforts were the underpinning of all the state's renewable-energy initiatives. For that reason, the energy-efficiency surcharge that Vermonters pay is a public benefit whether citizens undertake efficiency/conservation

programs in their own homes or not. Miller pointed out that efficiency reduces the emission of greenhouse gases, reduces the cost of electric transmission and distribution projects, and lowers the risk of malfunctions and accidents at generation stations of all types.

She acknowledged that some renewable-resource projects are controversial, particularly wind. Others are at rudimentary stages of development. But Miller encouraged a long-term view of the energy evolution we're experiencing today.

"In 20 years we're going to have a diverse energy picture in Vermont," she said. "We will have a reasoned and balanced approach and a diverse portfolio."

Mapping a roadway toward that portfolio is the purpose of the energy-planning work the administration and

Legislature are doing, she said.

One commissioner, many opinions

During a questioning period WEC member Lori Barg, of Plainfield – herself a developer of small-hydro sites – urged Commissioner Miller to include hydroelectricity in her planning for in-state renewables. (Hydro power was not mentioned in Miller's summary of renewable resources.) Miller assured Barg that it was her intention to do so.

Bud Haas, a former WEC board member from Bradford, then complained to Miller about GMP's recently announced 23-year contract to purchase power from the Seabrook, New Hampshire, nuclear plant, with the state's approval. The plant is now owned by Florida-based NextEra Energy Resources, LLC. Haas said

the deal stood in stark contrast to the purported goal of supporting in-state resources. Referring to the Fukushima nuclear crisis in Japan, he added, "The unthinkable happened. I hope the power [GMP] bought to sell in Vermont will not find its way to this Co-op."

In response, Miller said that the hardest part of her charge, to represent the interests of the ratepayers of the state, was that the ratepayers had differing opinions. Strongly held opinions about nuclear and wind energy were both examples of that dilemma, she said, and she hears from proponents of all sides.

But then she added, in reference to nuclear waste, that "the description of nuclear energy as, quote, 'clean,' is not an adjective I would use." Haas was among many in the audience who applauded that remark. 🐸