

WEC CO-OP CURRENTS

'Better Homes And Gardens' – With an Eye on Power Lines

Don't do it." In three short words, Mike Myers – Washington Electric Co-op's right-of-way coordinator – summarized the most critical message to convey to property owners wondering whether they should try to clear away trees or branches growing close to the power lines. The message is the same whether people are concerned about safeguarding the lines that provide their electricity or whether their interest lies in landscaping and beautifying their property.

"It's a safety issue," Myers explained. "For any tree within 10 feet of a primary voltage line, you need to be a certified line-clearance tree trimmer, or a qualified line worker, to deal with it. It's an OSHA standard."

But would an OSHA rule – meant to set enforceable standards for workplace safety – apply to a homeowner engaged in maintenance of his or her own property?

"Technically, it might not apply," Myers acknowledged. "But that isn't the point. The 10-foot rule is a good, common-sense rule anyway. If something goes wrong and the tree

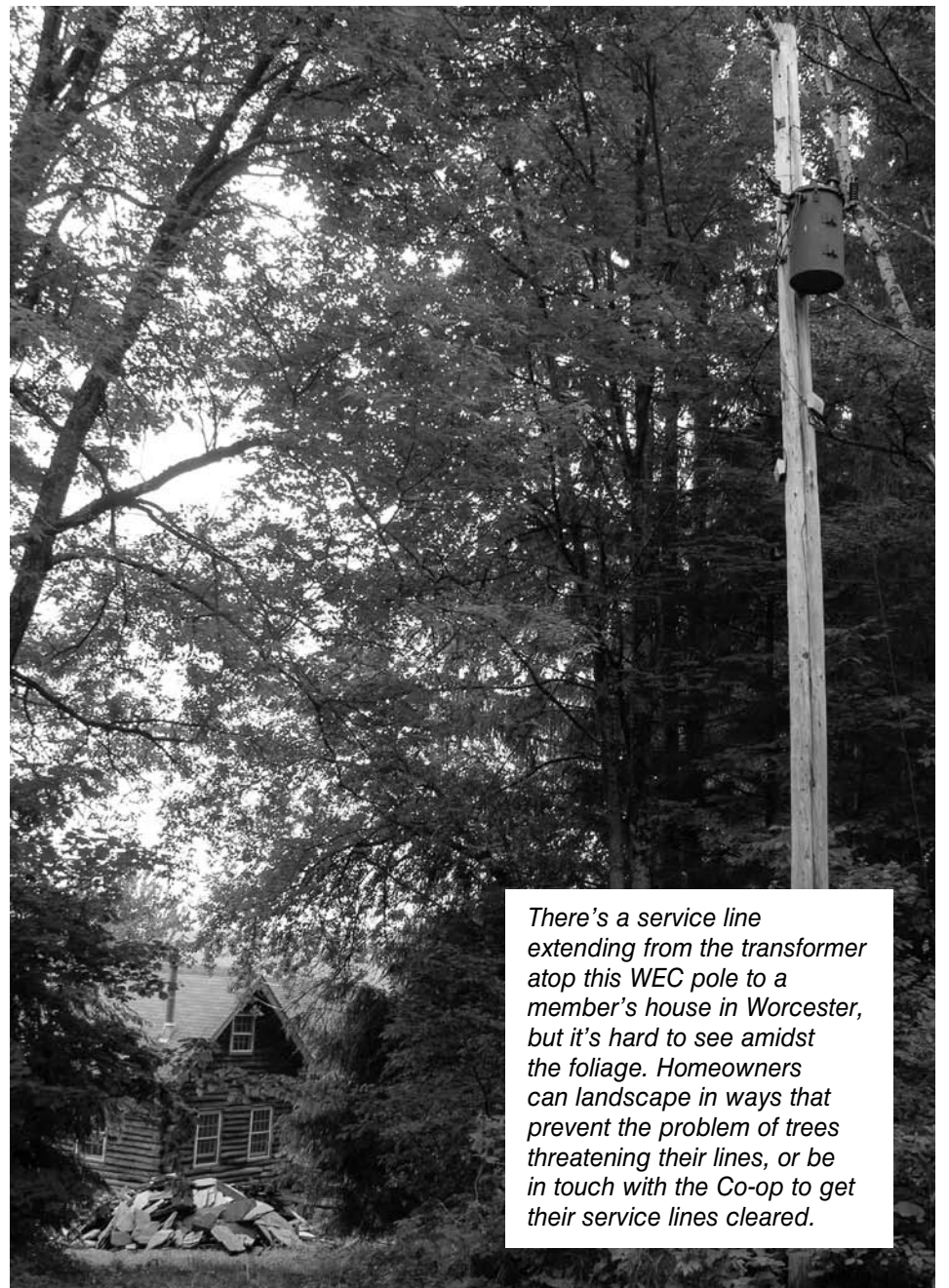
contacts the line, it can definitely kill you."

In reality, the 10-foot rule isn't stringent enough. Trees can be rooted farther than 10 feet from the power line corridor but be tall enough to fall into the line if they're blown down in a storm or are

WEC's Mike Myers is always willing to visit members to assess whether there is risk posed by a tree or vegetation.

cut intentionally by the homeowner. So the first thing people should do if they want to take down a tree is to look up, and to gauge whether it would reach the line – no matter whether the distance is 10 feet, 15 feet, or farther – as it fell. And the second thing they should do is doubt their own skill with a chainsaw. In Vermont, many of us tend to think we're pretty good at dropping trees. But in this instance that little voice of caution

continued on page 7



There's a service line extending from the transformer atop this WEC pole to a member's house in Worcester, but it's hard to see amidst the foliage. Homeowners can landscape in ways that prevent the problem of trees threatening their lines, or be in touch with the Co-op to get their service lines cleared.

Inside

Co-op's Annual Meeting held in Barre. The annual May get-together saw the re-election of three WEC directors, and a broad discussion of modern-day energy issues and their implications for Co-op members. Page 4.

Rate re-design on WEC's horizon. Washington Electric is working on a project required by the PSB, to assign accurate rates to utility-customer "classes." Will some WEC members pay more? Most won't; a few probably will (though slightly). See page 3.

'The Pledge' is coming. WEC will soon unveil a new program to help members save on power, and also help save the climate. Though it's not ready for prime time yet, the Pledge is previewed on page 6.

Reaching out to students. Energy is becoming an increasingly important subject in today's world, and the Co-op wants to help schools 'teach their children.' Page 8.



Manager Avram Patt, seated, listens to the always-entertaining WEC Treasurer, Don Douglas, at the Co-op's Annual Meeting. Coverage on page 4.

Washington Electric Cooperative

East Montpelier, VT 05651

EMPLOYEE MILESTONES

A traditional feature of the Co-op's Annual Membership Meeting is the announcement of Service Awards to employees who reach milestones in their careers with Washington Electric Cooperative. These awards are based on five-year lengths of employment.

Our employees are our best resource, and they deserve thanks and recognition from all WEC members because their work is vital to all of us, and they perform with skill and dedication.

In 2007 the following employees received Service Awards:



Shawna Foran:
Cashier/
Member Services
Representative
– 5 years



Elaine Gonier:
Member Services
Representative
– 5 years



Tammy Clark:
Member Services
Supervisor
– 15 years



Mike Patterson:
Utility Technician
– 15 years



Brent Lilley:
Senior Utility
Technician
– 20 years



MARKETPLACE

Remember Marketplace? It's a feature in *Co-op Currents* that hasn't received much use lately. Marketplace can help you sell items that may be of value to someone else, or help you find things you may be looking for. It's free, and *Co-op Currents* goes out to some 10,000 readers in the central Vermont area. You can submit items by mail (Co-op Currents, P.O. Box 8, East Montpelier, VT 05651) or e-mail (write to Executive Assistant Debbie Brown at debbie.brown@washingtonelectric.coop).

Co-op Currents

Co-op Currents (Publication No. USPS 711 -210 and ISSN No. 0746-8784) is published monthly except February, May, August and November by Washington Electric Cooperative, Inc., Route 14, P.O. Box 8, East Montpelier, Vermont 05651. The cost of this publication is \$.44, which is included in the basic monthly charge to each member. Periodical postage rates at East Montpelier and at additional offices. Postmaster: Send address changes to *Co-op Currents*, P.O. Box 8, East Montpelier, Vermont 05651.



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



Guest Speaker's Comments and Presentation Available Through WEC

Michael Dworkin, who consults on energy-related issues both nationally and internationally, and is the director of the Institute for Energy and the Environment at Vermont Law School, was the featured speaker at the Co-op's 68th Annual Membership Meeting on May 22, 2007. Dworkin's informative talk, concerning global energy trends and their effect upon Vermont, will be featured in the July 2007 issue of *Co-op Currents*.

However, Dworkin accompanied his address – titled "Changing Times: Drawing on the Co-op's Values to Meet the Challenges of High-Priced Energy, Climate Change, and Limited Resources" – with a slide presentation. (Al Gore isn't the only man with a slide show.) That presentation, which in large part speaks for itself, is available now by contacting the Co-op. It could be helpful for group discussions, research, or other uses. If interested, contact WEC Manager Avram Patt, who can e-mail Dworkin's Power Point presentation or mail a paper copy of the information.

Correction

In an Editor's Note following a letter to the editor from former member Rita Edwards in our March/April 2007 issue ("Sweet Sorrow"), we expressed appreciation to Rita for her service on the Co-op's Board of Directors "from 1987 to 1989." In fact, Rita served from 1983 to 1992. We regret the error, and thank Rita even more.

Editor, *Co-op Currents*

Washington Electric Undertakes Rate Design Adjustment

Cost Concerns Expressed at Annual Meeting

Washington Electric Co-op has begun a procedure called a Cost of Service Study and Rate Design Readjustment. Required periodically of all electric utilities by the Vermont Public Service Board (PSB), the goal of the study and the potential, minor shifting of costs among Co-op members that could follow, is to ensure that the rates people pay for their electricity more truly reflect what it costs the Co-op to serve them.

The rate design adjustment (to use a shorter term for the whole procedure) is not a rate increase. A rate increase affects all of the customers of a utility and brings increased revenues to the company. This procedure and its eventual outcome will be revenue-neutral.

Washington Electric has not increased its rates since 1999, and WEC's leadership does not envision an increase being necessary anytime soon.

Nevertheless, when you reallocate costs among people who share them, inevitably someone's costs will rise as others' fall – even if the shifts are small. So when Treasurer Don Douglas reported at the WEC Annual Meeting on May 22 that the Co-op had begun this process, some members spoke up in concern. Jackie Folsom of Cabot, who is married to Co-op Director Roy Folsom, expressed her fear that farmers like the Folsoms – many of whom are already struggling with the costs of their operations – would have to pay more for power. Former WEC board member Carla Payne of Cabot wanted to know the reason behind the study and rate adjustment, and why it's being done now.

Eventually WEC director Tim Guiles of Williamstown explained that it was hard for the board to address people's concerns specifically because the process is still in fairly early stages. People would be kept informed. Co-op member (and farmer) Steve Farnham of Plainfield asked if the work was being carried on in open meetings that WEC members could attend. The answer can be found in the Co-op's bylaws – Article IV, Section 6; Members Attending Board Meetings. They state clearly that

"Meetings of the Board of Directors shall be opened to the membership."

'Approaching fairness'

Hoping to definitively explain why the Cost of Service Study and Rate Design Readjustment needed to be done, President Barry Bernstein turned to guest speaker Michael Dworkin, a former chair of the PSB.

Dworkin explained it this way (slightly edited):

Most members will see a slight decrease in their rates, because if the majority were "hard to serve" the Co-op would have had to apply for a rate increase by now.

"Our thinking was pretty straight-forward. Some people use power in ways that are expensive to service them, and other people use power in ways that are cheap to serve. That's nothing to do with the moral question of whether you're using the power to run lots of

lights at night or whether you're using the power to run a life-support system in a hospital. This is just a cost question, about how hard or easy is it to serve people.

"Think about a customer who uses a lot of their power at two o'clock in the morning, when there's not much demand on the system and there won't be any unusual costs to the utility to provide that power. Some other customer uses a lot of power at five o'clock in the afternoon on a Friday, when everybody else is trying to use it, too. If you can come up with classes of people who have cheap-to-serve characteristics, and other classes of people who have costly-to-serve characteristics, then you can assign different prices to those two groups. You can't ever get it precisely right, but you try to get it reasonably close.

"And if you do, you've accomplished two things. First, you've approached fairness; classes of customers that are imposing a lot of costs on the system have to pay

their share. The second thing is that when you send that price signal out, the classes of customers that are putting a lot of cost on the system get a signal that it's important for them to find ways of getting a handle on it, and so a year later you might find out that some of the them have shifted into the position of being easier and less expensive to serve.

"Again, the idea that the Public Service Board had is relatively straight-forward; it's that people who cost a lot to serve should pay more, and people that are easy to serve should pay less."

Examples of ways in which the Co-op might have to spend more to serve high-volume users include building three-phase power lines to enable members to use large electric motors, buying more "peak" electricity to serve large users at busy times of day, and installing bigger transformers to provide them the appropriate voltage.

Focus on user 'classes'

How will this shake down for the Co-op? It's too early to know, but it's important to understand a few things.

First, individual Co-op members – whether they are residential users, farms, offices, factories or schools – will not have their bills and usage examined. The Co-op is looking at the average

electric usage by classes of members, and whatever rate shifts eventually are adopted (following approval by the PSB) will similarly apply to classes.


Second, almost by definition the majority of Co-op members will see a slight decrease in their rates. That's because the majority cannot be (in Dworkin's terms) "hard to serve," or the Co-op would have had to apply for a rate increase by now.

Third, every Washington Electric member – bar none – receives a "block" of low-cost kilowatt hours (kWh). Presently, this comes from WEC's contract with PASNY (hydropower generated by the Power Authority of the State of New York). The low-cost block has been Co-op policy for a long time, intended to help all members – particularly those with low and/or fixed income – afford the power they need for basic, necessary uses. In a way, though, it also figures into the thinking behind the rate readjustments.

"We have a lower-cost block, and one category we're looking at is a 'tailblock' of kilowatt hours sold at higher cost," said General Manager Avram Patt. "Your first block of kilowatt hours will be at the lower cost, but if you're a higher user a greater proportion of your electricity will be at the higher rate."

It does seem likely that rates paid by a small number of WEC members will go up, but Patt believes that "if their bills increase it's going to be by a very minimal amount – especially since we've had no rate increase for almost eight years, which indicates that our finances are functional and pretty much in balance."

The Cost of Service Study is being guided by Stan Faryniarz, an economist who lives in Vermont but works in Boston with La Capra Associates, which is an energy-consulting and power-planning company with a close relationship to Washington Electric. Also involved in the project are the board's Members & Markets Committee, and senior employees Patt, Bill Powell and Denise Jacques. Patt said a draft of the study results, and a proposed rate redesign, might be ready by the end of the summer. It would get reviewed and possibly amended by the full board, before proceeding to the PSB.

Co-op Currents will continue to report on the project. 



WEC Director Tim Guiles assures members at the Annual Meeting that the Cost of Service Study is very much a work in progress.

Making Ends Meet

'Affordable Energy' A Focus At WEC Annual Meeting

Want to save your Co-op money and make life easier on yourself? WEC Treasurer Don Douglas of East Orange had a way for Co-op members to do that, and he began his Treasurer's Report at Washington Electric's 68th Annual Membership Meeting on May 22 with an explanation. Or as he called it, an "infomercial."

Here was his advice: Arrange for automatic, electronic deduction of your monthly power bill from your savings or checking account.

"Only 10 percent of our members are doing it," Douglas said, "but we should be able to perhaps double that number and save both the members and the Co-op money."

Conveniences for the members include reducing check-writing, envelope stuffing, and stamp purchasing. (Douglas, a rural mail carrier, observed that he had been adding two-cent stamps to peoples' letters and bills since the recent postage increase). Benefits to the Co-op are a predictable cash flow, more time which enables the Member Service Representatives to provide better service to the members. "And," he pointed out, "the electronic transfer has the lowest bank charges. The bank charges us more to deposit a check in

our account, and there are also costs involved with buying and stuffing the return envelopes inside the members' monthly bill."

Douglas advised more people to make the leap, assuring them they'd be glad they had.

"I know it's a big step to let us into your bank account, but if you can't trust the Co-op, who can you trust?" he said, drawing laughter.

Douglas also suggested that people look into budget billing, which allows members to pay the same charge each month for a one-year period, based on their usage history. The benefit is the predictability of that monthly expense. There is an adjustment at the conclusion of the year,

but WEC can work out payment plans with members who need help at that time.

Finished with his "infomercial," Treasurer Douglas recounted the previous year from an economic perspective for Washington Electric, noting it had contained an unwelcome surprise.

"Revenue [from electric sales] was down during the year," he said. "That was okay – but then we had a fire."

He was referring to August 8, 2006,

"Our power cost is around 39 percent of our budget, which is pretty miraculous. A lot of utilities pay 60 percent to 75 percent to buy power."

— Board President
Barry Bernstein



WEC Treasurer Don Douglas uses humor to make the budget discussion a little more palatable.

when an early-morning fire damaged the Co-op's electric-generating station at the Coventry landfill. Suddenly WEC lost some 4.2 megawatts of inexpensive electricity, which accounted, at that point, for more than a third of our power supply. For the next three months, while the plant was repaired, WEC had to replace that power with more-expensive market power (although our sister co-op,

Vermont Electric Cooperative, retained a "strip" of its own contracted power to help us out).

What's more, the Co-op lost valuable income from the sale of Renewable Energy Certificates (RECs), which are based on production at Coventry.

During that period Douglas was doubtful WEC would meet its TIER requirement – an economic cushion



For some folks, though, WEC and its policies are serious business.



Brent Lilley, leader of Washington Electric's engineering department, receives an award for 20 years of service to the Co-op.



The elk at the Barre Elks Club, scene of WEC's Annual Meeting, watches over all.



A flurry of activity as a waitress brings the rolls and salad to a table of hungry members.

demanding by the Co-op's federal lender. By the end of the year, however, WEC had recovered. Its low purchased-power costs (because of the Coventry facility and other affordable resources) and the fortunate absence of destructive, costly storms in most of 2006 helped WEC end the year on solid financial footing.

Ballots and beliefs

It was actually hard to come inside on that Tuesday evening in May when Washington Electric Cooperative held its 28th Annual Membership Meeting, because that was one of most beautiful evenings of the spring. But some 196 Co-op members, friends and guests made their way to the Barre Elks Club, where they shared supper and conversation, listened to the officers' reports by Douglas, WEC President Barry Bernstein and General Manager Avram Patt, and asked questions from the floor on a number of power- and cost-related issues. (Among these

issues was a Cost-of-Service and Rate Readjustment Study currently underway by staff and a board committee; see page 3). Co-op member Katie Anderson, who owns property in Peacham and opposes the board's support for a wind-power proposal in Sheffield, repeated her opposition at this year's meeting. She distributed a CD and photograph representing complaints about the Mars Hill wind project in Maine, developed by the parent company of UPC Vermont Wind, the applicant in the Sheffield proposal. (That project is currently awaiting a regulatory ruling by the state Public Service Board.)

WEC continues to strongly support UPC's Sheffield project. Our Co-op is one of three Vermont utilities lined up to purchase the project's wind-electric entire energy output.

The night's featured speaker was former Vermont Public Service Board Chair Michael Dworkin, now an energy consultant and the director of the

Institute for Energy and the Environment at Vermont Law School. Dworkin is also a Washington Electric Co-op member from East Montpelier. (His informative talk, concerning global energy trends and their effect upon Vermont, will be featured in the July 2007 issue of *Co-op Currents*.)

For some members, though, the first order of business was voting in the election of three candidates for WEC's Board of Directors. The majority of ballots had already been cast by mail. All the official candidates this year were incumbent directors. Re-elected to three-year terms were Board President Bernstein, a co-partner in a company that sells and installs woodchip boilers (944 votes), dairy farmer Roy Folsom of Cabot (933 votes), and attorney Kimberly Cheney of Middlesex (922 votes). In addition to these, there were 27 write-in votes and 222 blank ballots.

There were no special spending requests or bylaw amendments on the ballot this year.

'If our plans work out...'

In his President's Report, Bernstein pointed out how much the profile of the Co-op has changed over the years.

"At one time we had the dubious distinction of having the highest electric rates in the state," he said.

That's no longer true, and it has much to do with the Co-op's power costs, which WEC has reined in by developing the Coventry landfill-gas generating plant, which energizes four generators using captured methane. The Coventry plant now produces 50 percent of WEC's power and could be headed as high as 60 percent. While nearly all other Vermont utilities have raised their rates in the last few years, largely to cover their power costs, WEC hasn't needed a rate increase since 1999.

"Our power cost is around 39 percent of our budget," Bernstein said, "which is pretty miraculous. A lot of utilities pay 60 percent to 75 percent to buy power. This is a big change for us."


Using Power Point graphs and a large screen to depict WEC's energy mix, Manager Avram Patt explained the role each source plays in providing our wholesale electric power. Sources come and go as contracts expire, but Patt was able to show how methane generation – first in Connecticut, and now with WEC's own Coventry plant – had replaced the nuclear power WEC formerly bought from Vermont Yankee. (Washington Electric terminated its power contract early with that provider.) Future plans continue to project a high percentage of renewable energy – "not just because we like it," Patt explained, "but because in our situation we have figured out that we can save money on these sources of power."

The next big contract to end will be with Hydro Quebec (2015), which provides about a third of WEC's electricity. That represented a "cliff" on the screen, where this major block of power dropped away. It poses a serious problem for virtually all Vermont electric utilities.

"We project that if our plans work out we will have provided [replacement power] for our Hydro Quebec block, while other Vermont utilities will very likely be in much worse shape without it," Patt said.

That will be important – because despite these positive projections and WEC's improved economic status among the state's utilities, power costs are worrisome for many Co-op members. Employee Shawna Foran, a WEC member services representative who fields calls from members every day, spoke up to remind everyone of that reality.

"I get calls from people expressing their concern about the bills," Foran said. "Particularly older members."

Hers was the voice of reality, and a reminder of the Co-op's responsibility to keep its costs and rates as low as possible, while also providing superior electric service. 



Steve Farnham, right, of Plainfield, asks a question about the Board's meeting policy.



New WEC 'Pledge' Program To Make Conservation 'Pay'

Washington Electric Cooperative is preparing to roll out a NEW PROGRAM that will provide incentives for participating members to reduce their consumption of electricity.

The goal of The Pledge Program will be not only to help these members conserve electricity and lower their monthly electric bills, but thereby to significantly reduce the amount of power the Co-op itself must purchase for its members.

Less usage by members means less usage by Washington Electric, and a reduction in our Co-op's contribution to global warming.

In the 1990s, WEC was a statewide leader in "demand-side management" programs. The Co-op hired energy auditors to make house calls to educate members on how to lower their electric usage, and helped members pay for certain alterations to their energy systems, such as converting away from electric heat. One of the drivers of that effort was that at the time, largely due to its rural territory, Washington Electric had just about the highest electricity rates in the state (it no longer does). So helping members reduce their power usage was a way to lower their bills and bring them closer into line with other Vermont utility customers.

That effort worked. However, WEC has scaled it back over time because the state created Efficiency Vermont (EVT), which offers many of the same basic services to all Vermonters.

The Pledge Program is something different. Washington Electric will be teaming with EVT to help members plan for realistic reductions in their electric usage and identify the means to achieve their goals. What's more, the Co-op will actually pay participating members who successfully reduce consumption, based on how much they lower their power usage.

Too get the program started and help us refine it, The Pledge Program will be offered as a pilot project later this year, to a limited number of year-round WEC member households who want to lower their electric use and costs.

In a nutshell

Full details will eventually emerge as The Washington Electric Cooperative Pledge Program is refined and fully

instituted. But briefly – WEC and EVT will help participating members understand their power-usage patterns, identify the major contributors to their usage, and set individual goals THEY CAN ACHIEVE to lower their usage and their bills. Their achievement of those goals will be the basis

for their reward (pay) from the Co-op.

The key to understanding your usage patterns is right there on your monthly electric bill. The bill shows how much electricity (in kilowatt-hours, or KWH) you have used in the past month and how much you used during the same month a

What's more, the Co-op will actually pay participating members who successfully reduce consumption.

year earlier. It shows your daily average KWH usage, and the daily average during the same month the previous year. It also provides a monthly history of daily average for the previous 12 months.

With this knowledge, you can begin to understand:

- what you have done in your household that has increased (or reduced) your energy usage;
- whether those changes are seasonal or permanent;
- what you can do to modify their affect.

The Co-op and EVT will also provide up-front incentives for people joining in The Pledge Program. These will include a free package of compact fluorescent light bulbs (CFLs), and a free dryer rack

for your laundry to encourage less use of your automatic dryer.

Other program components: The Co-op and Efficiency Vermont will provide both technical and financial assistance for purchasing and installing ENERGY STAR-rated appliances. The Co-op will then provide low- or no-cost repayment options.

Look for further details to emerge about The Pledge Program in Co-op Currents, the WEC website, and in a brochure from the Co-op in the near future. For now, start thinking about how you use energy every day, and where you may be most likely to reduce your usage and lower your bills. We can't pay you for taking these preliminary steps, but the rewards will begin showing up in your electricity bills.

Just contact the Co-op to learn more and get started. 

WASTE NOT


Reducing solid waste is a goal most WEC members can agree on. The Co-op reduces the waste stream's harmful impact by collecting the methane gas at the NEWS landfill in Coventry and using it generate electricity.

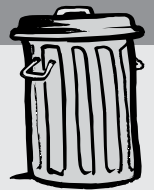
In this space, we help Co-op members find their own ways to reduce Vermont's wastestream, with tips about recycling, composting, the proper disposal of hazardous materials, and how to avoid generating some kinds of waste in the first place. Our information comes from the Central Vermont Solid Waste Management District (CVSWMD.org) and other sources. Readers can submit ideas or questions for **Waste Not** by contacting Washington Electric Cooperative.

E-Waste. Whoever would have imagined there would be something called "e-waste"? The term, of course, applies to the myriad electronic devices that have become "absolutely necessary" for many of us to communicate and do our business – even, legitimately for some, to survive. Computers, especially, pose a wrenching moral dilemma for people with environmental sensibilities,

because they do become obsolete or nonfunctional, yet they are large (compared to cell phones) and contain hazardous materials as well as plastic that will endure for millennia. What are we to do with them?

CVSWMD recommends that you act on five fronts when contemplating disposing of computers. The District's website provides further guidance, but the general thrust is that you look at: 1) upgrading your existing system (additional RAM or a new hard drive might solve your problem; computer dealers may have recommendations); 2) donating or selling usable electronics before you toss them (this involves a little legwork, contacting schools, libraries, nonprofit service agencies, and others who work to put computers

into the hands of people who need them); 3) recycling (this keeps toxic components out of the waste stream; CVSWMD accepts electronics at its Barre Town recycling depot); 4) buying greener technology (for starters, check out the website EPEAT.net – Electronic Product Environmental Assessment Tool); and 5) encouraging manufacturers to take back their products at the end of their life-cycle, which is done in Europe. 



Home Power Lines

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should prevail. Trees don't always go where we want them to – but fully qualified tree service operators have the experience, manpower and equipment to make sure that they do. Considering the risks involved, the job should be left to them.

Fortunately, Washington Electric Co-op members don't need to decide for themselves whether there is danger. Mike Myers spends a lot of time making house calls, and is always willing to visit a member to assess the situation and perhaps arrange for WEC's own personnel to deal with it.

"If somebody calls and says 'I'm concerned about a tree near my power line, or a dead tree,' I will make a visit," said Myers, a former consulting forester who is responsible for administering WEC's right-of-way maintenance

program involving nearly 1,300 miles of line.

"If it's an easy situation I may take care of it while I'm there, either cutting a small tree myself or cutting off a limb with an Extendo stick. If it's more difficult I'll probably have one of our contracted tree crews deal with it, or a Co-op line-maintenance crew if they're working in the area."

Typically, if there is a significant threat to the power line system WEC will provide this service at no cost. Sometimes WEC gets calls about trees that actually pose more of a danger to someone's porch, for example, than to the lines. Or maybe the real problem is that it's interfering with their satellite dish reception. (It happens.)

"I'll give them phone numbers for our tree contractors, who work at reasonable rates," said Myers. "In some circumstances I'll negotiate a cost-sharing arrangement between us, to pay for the

contractor. The priority is to discourage people, in the strongest way we can, from taking risks."

What's what

If you're contemplating some yard or house maintenance (painting, roofing, renovations) and the electric lines may be a consideration, here is some important information.

Primary line. Most of WEC's residential members are served by single-phase high-voltage power line. Look at the poles near your house. Single-phase line typically has one conductor (electric wire) running across the tops of the poles, from pole to pole. That is the primary conductor, and in most cases carries 7,200 volts of electricity. (Two- and three-phase conductor also exists in some parts of our service territory – meaning two or three power lines, usually parallel and on cross arms across the top.)

The primary line is the most dangerous one. Trees conduct electricity, and if a tree, standing or felled, contacts it, and you contact the tree (even with your power saw), you're in grave danger. In all cases, avoid direct and indirect contact with the primary line.

And though we would hope it would be obvious that you shouldn't approach a downed power line, people sometimes do. Stay away, keep children away, keep your pets away (dogs have been electrocuted by fallen lines), and call 911 or the Co-op directly.


Neutral line. The strand of conductor running below the primary line – around four feet lower on the poles – is the neutral conductor. (The thicker cables below that are the telephone and TV/Internet cables.) The neutral wire is a current-carrying conductor so you should

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WEC CO-OP STORE

WHOLE HOUSE SURGE PROTECTION

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WEC In The Schools

Granite State Students Looking At Their Energy Future

Nowadays, even kids are getting into the act. And that's a good thing, because the future – including the energy future, and the climate future – will be theirs. So when school children like the fourth-graders in teacher Ben Woo's class at the Lafayette Regional School in Franconia, New Hampshire, want to learn what society can do to propel itself on clean energy during their lifetimes, Washington Electric Co-op's general manager is happy to share his time.

"We're always looking to be invited into the classroom to help teachers with their curriculum on any kind of energy issue, whether it's efficiency and conservation, where our electricity comes from, renewable energy, or anything else," the Co-op's Avram Patt explained.

This time, though, the classroom came to him. On April 30, Mr. Woo showed up at the Co-op's office in East Montpelier armed with a laptop computer equipped with "Skype" technology. Skype is an Internet service and software package that provides voice and video over the Internet. The teacher set his laptop up in the general



General Manager Avram Patt uses voice-over-Internet technology to talk to a class of fourth graders in New Hampshire.

manager's office and seated Patt in front of the screen, which had a small, attached camera. The 15 students on the other end of the connection had a similar arrangement, and the children conducted a half-hour interview with

WEC's manager.

"The class had been studying energy and renewable energy," said Patt. "They were aware that there was a power plant not far from them – which is our generating plant in Coventry (Vermont) – that was producing electricity through landfill gas. It was a learning opportunity."

Bear in mind that fourth graders are generally around nine years old. That's an age where they are still figuring out the world around them, rather than contemplating changing the world around them. But Patt found the Franconia youngsters ready for the session.

"They were fairly well informed and serious," he said. "They were looking at new forms of energy generation, and expressed concern about global warming and the environment."

He was also charmed by their straightforward questions. "One of the


kids asked what I thought was the best kind of energy for power generation. It was refreshing to have a question boiled down that way to its real meaning, as kids can do.

"I basically said that all forms of renewable energy, both large and small, were the best, and we need to do them all, depending on the resources we have available. I also said that something we can all do today is to start using less electricity ourselves, and that maybe they could go home and talk to their parents and decide on ways the whole family could conserve."

True to form, some of the students had funnier questions up their sleeves. One asked Patt if it smelled bad, working at a landfill.

"I told them it wasn't my job, that I worked in an office," he said. "But I said the people who do work there get used to it."

Today's students – tomorrow's adults – will have to get used to new forms of energy generation, and perhaps not having the seemingly endless supply of energy their elders have grown accustomed to wasting.

If WEC can help inform students in your community in the increasingly vital field of energy and conservation, give the Co-op a call. You don't need Skype to communicate with us. We'll gladly come to you. 

"We're always looking to be invited into the classroom, to help teachers with their curriculum on any kind of energy issue."

– General Manager Avram Patt

Home Power Lines

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always assume that it is energized. Breaking the neutral could send a shock of high voltage into the house and destroy your electrical equipment. It could even start a fire.

Transformer. Attached near the top of a power pole – probably the closest one to your house – is a grayish metal canister. That's the transformer, and everyone has one. The transformer reduces the voltage sent into your house to the appropriate and safe levels for normal residential use. Obviously, you don't want to knock this thing down.

Service line. The service line runs from the transformer directly to your house. This is a visible, overhead line, unless you have an underground connection. The service "drop" carries power at a lower voltage, but nevertheless it presents the same dangers as primary line! You want to avoid contact with it, too (for example, by hitting it with an aluminum extension ladder). If you break the service line's connection to the house you've lost your power.

Guy wires. Utilities use ground spikes and guy wires to stabilize some

of their poles by counteracting the tension from the electric wires. The guy wire is a very noticeable cable that runs from near the top of the pole to the spike, or anchor, which may be several feet from the base. Dropping a tree on a guy wire, or otherwise disrupting it, could topple



the pole immediately or later, and also bring down a couple sections of line.

Underground service. More and more Co-op members are requesting underground service lines to connect their homes to WEC's electric system without visible overhead wires. The only trouble with this is the "out of sight, out of mind" syndrome. You need to know, and remember, the path of that buried conductor before you stick a shovel in the ground.

Whether you have overhead or underground service lines, you must be aware of them. We've grown so accustomed to the electric lines all around us that we literally don't see them even if they're in plain sight. And unfortunately, that's dangerous.

People should doubt their skills with a chainsaw. Tree service operators have the experience, manpower and equipment to take trees down safely.



Birds and bees

But hey – it's June! Don't let electricity take all the fun, self-expression and beauty out of owning property. Spring and early summer is a time to spruce up, to be inventive, and to plant vegetation



that can add color and design to your property, or perhaps provide some privacy from the road or the property next door.

There are lots of species that can be planted close to the power line corridor – or even under the lines, if need be – that will not pose a conflict with maintenance of the lines. WEC has a brochure, Spring Has Sprung – And it's Time for Planting, that contains the most important "Dos" and "Don'ts" of landscaping with power lines in mind. It also suggests plant species you might want to consider. Contact the Co-op for a copy.

The important thing is not to plant anything under or near the wires that will grow to be more than 15 feet tall. The following species are examples of trees you should not plant: willow, birch, pine, oak. Low-growing trees like red stem dogwood, on the other hand,

are fine. So are lilacs (and what Vermont dooryard is complete without lilacs?).

Blueberry, barberry, dwarf honeysuckle, and sheep laurel are low-growing species that have the additional advantage of crowding out unwanted "volunteer" seedlings. (Your friendly Co-op Currents editor, faced with these same problems, recently planted a Chinese fringe tree – or Chionanthus – near the path of his service line.)

Here again, though, a word of caution is in order. There could come a time when your power line falls in a wind or snowstorm, and Co-op linemen would need to work in the right-of-way to put it back up. "We might have to go in, on foot or with equipment, and possibly trample things," said Myers. "If something is landscaped or planted we try to respect that and work around it. But it's not always possible."

A few generations ago Vermonters didn't need to worry about things like power lines and satellite dishes. Nowadays, we do. So, for aesthetic reasons – but most important, for safety reasons – think carefully about what you grow on your property and where you grow it.

And don't take ANY chances where power lines are concerned. 