



WEC CO-OP CURRENTS

WEC Reluctantly Takes Towns To Court

State Valuation Policy The Real Issue

By Avram Patt
General Manager

As was reported in the local papers in October and early December, Washington Electric Co-op has appealed our property tax valuations in five towns in our service area: Chelsea, Orange, Williamstown, Topsham and Tunbridge. These appeals were filed in Orange Superior Court over the last few months.

This is a complex and difficult issue for the Co-op, and many members understandably would rather not see their towns involved in court cases. We would like to provide some information, and explain the reasons for this action.

Property taxes are a major expense for the Co-op.

In addition to the buildings and land we own in a few towns, WEC pays property taxes on all our electric lines, substations and equipment in the 41 towns in our service area. In 2002, our total property tax bill was greater than \$500,000.

The Co-op's property tax bill has been rising astronomically.

In 2002, our total property tax bill rose 11 percent over the year before. In 2001, it rose 32.4 percent over the year before that. In 2000, our taxes rose 23.4 percent over 1999. And in 1999 and 1998, WEC's taxes rose 10.9 percent and 9.7 percent, respectively. The result is that in just the past four years, property taxes have more than doubled for the Co-op.

The town and school budgets in our towns have obviously not been the major cause of these increases. Nor has the Co-op made changes on our system that would cause our property value to rise by such percentages.

Towns rely on guidance from the State of Vermont.

The Property Valuation and Review Division (PVR) of the Vermont Department of Taxes provides guidance to town listers for appraising the value of utility property. Based upon considerable analysis that WEC has conducted, we disagree with that guidance as it pertains to our system.

continued on page 5



A country stream in Co-op Land on Christmas day.

'Reach Out' The Co-op Way WEC Now Providing Long-Distance Calling Services

Some commercial telephone service companies, in their advertisements, are fond of saying: "We know you have a choice of long-distance providers." They've got that right.

If you're a member of Washington Electric Cooperative your choices have just expanded. WEC has contracted with the National Rural Telecommunications Cooperative and can now make available an in-state and interstate long-distance

service that provides cost advantages and convenience, as well as the approval of a national co-op that puts member-service and benefits as its top priority.

Here are some features of the plan:

Cost advantages:

- 4.9 cents per minute for interstate long-distance calls, both outbound and inbound (for example, using this

continued on page 8

Inside

WEC President looks back at the events of 2002, from a Co-op perspective (page 3), while...

The Operations Team looks ahead to a roster of projects to update the Co-op's system in 2003. Page 4.

The economies of residential solar energy. One man's conclusions might surprise you. Page 6.

Let's remember WARMTH again this winter. See "letters," page 2.



WEC linemen constructing Moretown substation in 2001, a task they'll be repeating at South Walden this spring. Page 4.

Washington Electric Cooperative
East Montpelier, VT 05651

Members Write

Co-op Currents welcomes letters to the editor that address any aspect of the Co-op's policies and operations, or any matters related to electricity. Readers can write to Co-op Currents, P.O. Box 8, East Montpelier, VT 05651. Letters to the editor will not be published in the Annual Meeting (April) issue.

Share The WARMTH Again

To The Editor:

Now that winter is upon us once again, I would like to thank Washington Electric Cooperative for its generous donations to our WARMTH emergency heating program. Your gifts will go far in helping keep central Vermonters warm this winter. With your support, Central Vermont Community Action Council (CVCAC) continues to provide emergency assistance to those facing crisis as a result of poverty.

Last year, CVCAC was able to connect more than 1,500 central Vermonters in 4,500 households to the resources they needed to begin to move out of poverty. Almost 1,000 of these households received crisis fuel assistance due in part to your generosity. This year more families will be warm because of your decision to support our work.

We consider WEC a partner in our

ongoing efforts to eliminate poverty in the midst of plenty, and for this we are extremely grateful.

Kathryn Mathieson
Development Manager
Central Vermont Community Action
Council Inc.
Barre

Editor's note:

WARMTH is a program through which utilities provide a convenient opportunity for their customers to contribute to the important work of organizations like Central Vermont Community Action Council. Contributions to the WARMTH program are applied to the heating needs of people who are facing choices between paying fuel/electricity bills and paying for other necessities.

WARMTH is a voluntary program that welcomes contributions large and small. The Co-op urges members to contact our office for information on how they can participate.

Co-op Currents

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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 Management and Programs Administrator Denise Jacques, 802-223-5245.

Taking Renewable Energy Cause To Town Meeting

To The Editor:

Our dependence on fossil fuels is causing great economic, social and ecological problems throughout the world.

Here in Vermont a future based on greater energy efficiency and renewable energy is fast becoming a very real possibility. Wind energy is currently being produced in Vermont and throughout New England. Wind and other renewable technologies are now economically competitive.

Vermont currently exports \$1.4 billion out of state every year to pay for fossil fuel. Why? Twenty-first century technologies make it possible for Vermont to be more energy independent and strengthen our local economies. Wind power typically provides 70-percent more jobs than gas, and solar technologies provide twice that. Local power from renewable sources not only makes environmental sense, it also would create a better economic future for Vermonters.

To make renewable power and energy independence a reality will take political leadership, vision and will. The voices of concerned citizens will help make this vision a reality.

This year the Vermont Natural Resources Council, Southern Vermonters for a Fair Economy and Environmental Protection, the Vermont Chapter of the Sierra Club and the Burlington Alliance for Climate Action are hoping that towns will pass a resolution in Town Meeting that will ask our political leaders to promote a future with more renewable energy and more energy efficiency.

If you are interested in helping gather signatures for the Town Meeting Day petition please contact Matteo Burani or Angie Barger at 223-2328, or email us at mburani@vnrc.org, abarger@vnrc.org

Here is the text of the petition:

To the Selectboard of (your town):

Whereas the environmental, economic, and public health effects of global climate change, caused primarily by the burning of fossil fuels, pose serious threats to Vermont and to all of the

earth's natural systems, and nuclear power produces dangerous and long-lasting nuclear waste; and

Whereas the efficient use of energy saves money and reduces all types of pollution at the same time; and renewable energy sources, including solar, wind, biomass, hydro, and geothermal power have the potential to provide affordable energy with minimal environmental harm; and

Whereas the state and national economies would be strengthened by the creation of millions of new jobs in the manufacturing and installation of renewable energy systems, in the creation of a fuel-efficient private and public transportation system, and in energy-efficiency improvements in all residential, commercial, and governmental buildings; and

Whereas Vermont and America would become more secure by becoming more independent in our ownership, production, and management of energy resources, especially by importing less oil from foreign countries;

Therefore we, the undersigned legal voters in the town of _____, respectfully request that the Selectboard place the following article on the warning for Town Meeting on Tuesday, March 4th, 2003:

"Be it resolved that the citizens of the town of _____ urgently call upon our municipal leaders, state legislators, governor and congressional delegation to put Vermont in the forefront of a sustainable energy future. Specifically, we request immediate and ongoing action on legislative initiatives designed to promote energy efficiency in Vermont's homes, businesses, public buildings and transportation systems, and to encourage expansion of the renewable energy industry in the state of Vermont. As citizens and business owners in _____ we will look into how we can reduce greenhouse gas emissions in our personal lives by 10 percent a year."

Matteo Burani
Vermont Natural Resources Council
Montpelier

MARKETPLACE

FOR SALE: Kubota tractor. B7100, 4-WD, 16-HP diesel. Fully hydraulic front snow plow, heavy duty chains. New tires, engine block heater. Six speeds, roll bar. 48" rear mower. All manuals. Low hours, excellent condition. Asking \$6,695. Call 802-685-3321.

FOR SALE: Antique sideboard, \$500 or best offer. Also, two 205/70/R15 Hakkapelitta tires, used only one winter. \$80 for the pair. Contact George Andrus at 229-0297. Morning or evening are best times to call.

President's Report

Holding Our Own And Moving Forward In Turbulent Times

By Barry Bernstein

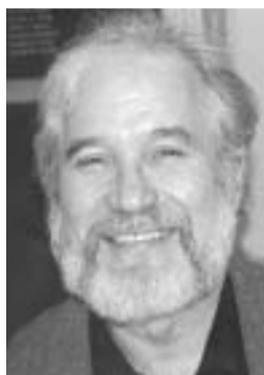
It is hard to believe that we are ending another year, the second of a new century. It has been a very full year. The November elections are behind us, we have commemorated the first anniversary of September 11, survived the initial impact of the Enron and WorldCom financial scandals, and just witnessed the largest bankruptcy in airline history as United Airlines filed for Chapter 11 protection. The economy is still at a near standstill and unemployment recently hit a nine-year high at just over 6 percent, a statistic that does not include folks who have exhausted their benefits and remain unemployed but are no longer counted.

WEC has experienced our own changes, and is of course affected by events both close and far away. The wholesale power markets, as well as the stock market, have been affected by the energy events on the West Coast, the instability and uncertainty of the Middle East, and whether we will be going to war in Iraq. Here at home, WEC ended our ownership and power contract with the Vermont Yankee nuclear power plant and replaced most of that power for the next three to four years with energy generated from methane gas at a New England landfill.

The WEC Board continues to pursue long-term renewable power options that will help provide stable electric rates for our members. U.S. Rep. Bernie Sanders' strong commitment to the future of wind power and his help in securing a \$940,000 grant for WEC will enable us to work with wind-electric developers on potential generation sites in the northern part of Vermont. Your Board hopes to be able to add wind- and additional methane-generated power to our power supply over the next few years, lessening our co-op's dependency on the spot market and fossil fuels. Since the September 11 attacks we believe this goal is important from both a price and security perspective.

Balancing act

Our Co-op continues to strongly support our decade-old energy-efficiency programs for our members' homes and businesses as the most effective "purchase" of electricity. We have found that it is cheaper to help people save kilowatt-hours than for us to buy kilowatt-hours when that cost can be avoided.



WEC President
Barry Bernstein

In 2002 we completed a comprehensive power-quality study, working with an outside consulting firm and the Vermont Public Service Department, and as WEC Engineering and Operations Director Dan Weston reported in the October issue of this publication, we will be implementing many of those recommendations in 2003. They will further our goals of saving kilowatt-hours, while increasing energy efficiency on our distribution lines and substations, saving dollars and also improving reliability.

Your Board of Directors must always balance the Co-op's high rates – in large part driven by our rural, hilly terrain and sparse per-mile occupancy – with the effects of the economy on our members, rising health care costs and property taxes, fair remuneration for Co-op employees, and service reliability. Your Board, General Manager Avram Patt and WEC employees have worked extremely hard in 2002 to maintain and improve service reliability while holding tight on controlling costs. We have cautiously increased our right of way (ROW) line-clearing budget over the past few years in the hopes of reducing outages and also making it easier for line crews to reach downed lines. Construction started on the new substation at South Walden this fall as part of our four-year work plan to further improve our physical plant and service reliability.

This year WEC also adopted strong service-reliability and customer-service standards. The Vermont Public Service Department has been working with Vermont utilities in this effort and

commended the Co-op for putting forth standards that exceeded minimum expectations.

The Board and the IBEW (International Brotherhood of Electrical Workers) recently agreed to accept the recommendations of non-binding fact-finding for our office employees who joined the union, which currently also represents co-op line workers. This brings to a close the outstanding issues with that group. The Board has been in negotiations with the union and we hope to have a new contract by mid-January, replacing the current contract which expired at the end of 2002.

As General Manager Patt explains elsewhere in this issue, the Board also, after months of deliberation, voted to file suit in Superior Court to appeal our property taxes in five towns in our service territory. This is in an attempt to address the spiraling increase in our property taxes. The doubling of our property taxes over the past four years made this difficult decision by your Board unavoidable. We are hopeful that a resolution with the state on its property tax formula, which is used by the towns to arrive at their assessments, may help avoid a lengthy court process.

In our effort to take advantage of our combined buying power, WEC began providing additional services and products this year. We started with offering power-supply products and added an

offering of Internet service with a new partnership through VermontLink, of Hardwick. We have also developed a package for intra- and inter-state long-distance telephone service through a partnership with the National Rural Telecommunications Cooperative, announced in this issue of *Co-op*

Currents. You'll be hearing more about this in an insert in your January electric bill.

Thank-yous and farewells

As we end 2002 I want to especially thank the members of your Co-op's Board of Directors, who put in a tremendous amount of voluntary time and

hard work; our general manager, Avram Patt; management staff, and all of our Co-op's office and line staff, for a joint, cooperative effort that continues to make me proud of being part of Washington Electric Co-op. We are not without our challenges and struggles, yet we continue to move forward together.

I also want to wish the best of luck to Fran Bard, who retired in 2002 after 23 years at WEC, and to Mike Bizzozero, our Manager of Information Systems, who will be leaving after 22 years of service to go to work for NISC (National Information Systems Cooperative).

On behalf of the Board and all Co-op employees we hope all of our members had a healthy and happy holiday, and wish them the best as we now move into 2003. 

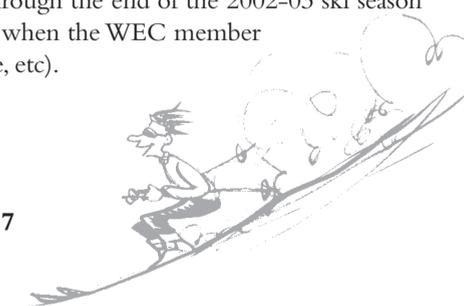
Your Board hopes to add wind- and additional methane-generated power to our power supply. Since the September 11 attacks we believe this goal is important from both a price and security perspective.

We are not without our challenges and struggles, yet we continue to move forward together.

Mad River Glen Renews Discount Offer to WEC Members

Washington Electric Cooperative (WEC) is proud to offer a member discount at the nation's only cooperatively-owned ski area, Mad River Glen in Waitsfield, Vermont. This discount is valid for WEC members through the end of the 2002-03 ski season (or April 2003). This discount is valid only when the WEC member provides sufficient photo ID (driver's license, etc). Call the Co-op to get your coupon.

**MAD RIVER GLEN'S
2002 – 2003 SPECIAL TICKET PRICING:
Weekday Co-op Member price . . . \$37**



Eye On 2003

WEC Sees A New Sub, New Poles And More Improvements In Its Future

You may have to be a trained lineman to be able to see it, but by the end of 2003 much of Washington Electric Cooperative's electric distribution system will have gone through significant modernization.

If the members don't detect those the improvements, Dan Weston, WEC director of engineering and operations, hopes they will notice the results:

improved service and reliability in several sections of the Co-op's system.

The coming year's improvements (see accompanying box for project locations) will include:

- the addition of "capacitor banks," mounted on poles at strategic locations to boost the voltage and counteract "line loss";
- larger conductor (electric wire), which reduces line loss because smaller wire is less able to sustain appropriate voltage over extended distances;
- more fuses, so that when outages occur they will be confined to a smaller area and affect fewer members;
- reconstruction of sections of power line, either to provide better access for servicing the lines, or to shorten the line distance to a member's home and improve power quality;
- new poles where replacements are needed, which will be somewhat larger in dimension (though not necessarily in height);
- and, here and there, a few new crossarms, made of fiberglass – a material that has some advantages, but perhaps some disadvantages, too, compared to wood. For Washington Electric, these fiberglass crossarms will constitute an experiment.

WEC is also going to continue its project of replacing faulty "cutouts" (a cutout is a fuse and the tube that encases it). Ten years ago Washington Electric began purchasing these devices from a reputable national supplier and installing them throughout the system. There are now several thousand in place, and unfortunately a great many of them are lemons. When they don't operate correctly people are not protected from otherwise-avoidable power outages. The faulty cutouts are made of porcelain; the new ones WEC is using as replacements are made from a polymer compound.

"In the process of installing additional fuses to the system we'll also be changing the cutouts at the existing fuse points," Weston explained. "It doesn't mean we'll capture all the bad ones, but we'll capture them on the main lines

where we're adding fuses. Those are the most important ones because their failure affects the greatest number of people."

The biggest improvement to the system in 2003 will be the most obvious: construction of a new, replacement substation in South Walden. Everyone who drives by the site near the junction of Route 15 and the

Cabot-South Walden Road should notice that, and 1,400 Co-op members in South Walden, Cabot, Wheelock, Stannard, West Danville, Woodbury and East Calais will benefit from a modern substation and the related system upgrades that will go along with the construction effort. The \$400,000 project was approved by WEC members in 2002 by a vote of 882-81. All preliminary site work is complete, and erection of the structure is expected to commence in April.

Line-loss bugaboo

As a rural electric co-op that overwhelmingly serves residences, as opposed to factories and high-volume electricity users, WEC's system is char-

acterized by small conductors (wires) and long distances. Those are the very characteristics, Weston said, that lead to "line-loss" – diminished voltage as the power travels along the conductor.

Voltage is comparable to the pressure of water sent through a garden hose. As the length of hose gets farther and farther from the spigot (in this case, the substation), the water pressure diminishes.

Line loss is a problem that all electric utilities face. But it's particularly noticeable for rural companies whose lines extend over miles and miles of hill, pasture and roadside. What it means for Co-op members who live some distance from their substation is that unless the problem is corrected the voltage, and therefore the electric power, at their homes is weaker than at points closer in.

There are several ways to counteract line loss, and most of them come with complications. For example, you can increase voltage (pressure) at the substation, but that calls for significant changes in other equipment along the lines to ensure that people receive the correct amount of power at their homes.

WEC will address the problem by adding capacitor banks in some places, by adding voltage regulators at strategic points along the line (they accomplish the same purpose through different means), and by increasing conductor size. Larger conductor maintains voltage better than smaller conductor.

For the last 15 years or so the co-op has been relocating segments of its power lines, and it will continue to do so in 2003. When WEC's cross-country distribution system was built during the late 1930s and the ensuing decades, the priority was to get power to rural people economically, using the most direct route possible. However, in later years development patterns in many places have changed the lay of the land from an electricity standpoint. People might be connected to the system from one direction even though there now might be a closer connection available from another direction.

This matters — again — because of the phenomenon of line loss. Look for some sections to be rebuilt this year as the Co-op seeks greater efficiency and improved system reliability.

Nature has a way....

Then there are the poles and crossarms. WEC began planting power poles when the Co-op was founded in 1938, and some of the early poles are

For Washington Electric, fiberglass crossarms will constitute an experiment.

WEC At Work In 2003

During the coming year Washington Electric Cooperative's operations staff will be active with several major projects for improving the Co-op's distribution system. These projects will include the relocation of sections of power line, either to improve access for maintenance and emergency repairs or to create improved efficiency, and rebuilding line with improved and modernized equipment to improve power quality and limit the effect of outages.

During 2003 look for WEC crews at work particularly in these locations:

Cabot: West Hill Pond area;

North Calais: rebuilding a cross-country line extending from Kent's Corner to Gospel Hollow;

Williamstown: relocating the "Riddle" tap (circuit);

Topsham: a project in Zion Hill;

Williamstown: a line-rebuilding project out of the Jackson Corner substation, from the Lambert farm to Route 302.

In addition to these, Engineering and Operations Director Dan Weston anticipates a busy spring, summer and fall, adding 170-190 line extensions to accommodate new homes and businesses constructed in WEC's service territory.

Dan Weston



"It always seems that what man puts out there nature has a way of overcoming and wearing down."

Dan Weston

still out there. Their age doesn't mean they are no good, but they bear watching. Indeed, WEC must, by regulation, inspect 10 percent of its electric system each year. One way veteran line workers know to check the condition of a wooden power pole is to stick a screwdriver in it. If there's rot and punk in the heartwood, the tool will tell the tale.

When WEC installs new poles in 2003, it will use thicker, sturdier poles, which Weston said are available now at a bargain. "Changing to Class 3 poles will be an insignificant cost," he said, "because the price has come down."

More questionable is the value of fiberglass crossarms. Crossarms are used for three-phase systems – that is, where three power lines run parallel from pole to pole, instead of single-phase (one line, with a neutral beneath it, which is

Voltage is comparable to the pressure of water sent through a garden hose. One can envision that as the length of hose gets farther from the spigot (in this case, the substation), the pressure diminishes.

more characteristic of rural, residential electric systems).

Fiberglass crossarms can prevent problems that occur when the insulators, which hold the wire away from the wood, fail and the live wires come to rest on the crossarm. Undetected, the electricity burns through the crossarms and the wires fall to the ground. The result: a broken crossarm, a dangerous live wire on

the ground, and a power outage.

Fiberglass crossarms would seem to prevent that problem because they don't conduct electricity and won't be burned by contact with a live wire. But Weston's not convinced about them.

"Sunlight deteriorates fiberglass," he pointed out. "You can see its effect on boats or anything else made of fiberglass.

"It always seems



WEC linemen Richard Hallstrom, left, and Larry Brassard.

that what man puts out there nature has a way of overcoming and wearing down."

WEC has installed several fiberglass crossarms on its system, and Weston intends to try a few more. Then it will be a matter of watching and waiting, an experiment conducted in Mother Nature's laboratory.



WEC Court Case

continued from page 1

As all property taxpayers know, appraisals are supposed to be based on fair market value, whether the property is a home, a small business, a manufacturing plant or a utility. We fully recognize that determining fair market value for utility poles and wires within a town is more complex than it is for homes. However, we realized starting a few years ago that the guidance from PVR that many towns were using does not adequately address the value of rural utility systems. We also felt that the guidance was arbitrary.

The source of our disagreement is therefore the guidance being provided to the towns by the state, and our appeals say this clearly.

WEC has been trying to address this issue for a few years.

Over the past few years, we have been in communication and met several times with officials from PVR, and we continue to do so. We had an independent appraisal of our system done. That appraisal showed that we should be paying at least \$180,000 less per year across our whole system, an amount that would still be a considerable increase for the Co-op compared to four years ago.

We have used that independent appraisal in our discussions with state officials, as well as in reviewing assessments in all the towns where we have property. Our intent from the beginning has been to try to address our issues at the source, and to try to avoid taking legal action involving towns in our territory.

We are following the normal appeals process set out in Vermont law.

Because we have a lot of property in many towns, and because we are always working on our system, we regularly pro-

vide detailed and up-to-date information to town listers whenever requested. If we have an issue with a town's appraisal the Co-op follows the normal appeals process that is laid out in Vermont statute, and which is available to any property owner. A Co-op staff member first meets with the town's Board of Listers. The next step in the appeals process is for that staff member to meet with the town's Board of Civil Authority.

A taxpayer, whether the Co-op or an individual homeowner, then has the option

of a court appeal. Over the past several years we have appealed to the listers and Boards of Civil Authority in a number of towns throughout our territory. At the same time, we have continued to discuss our concerns with state officials, because we

would have much preferred addressing this issue at the state level rather than having to appeal town by town.

The reason we appealed in these particular towns is that we have a great deal of taxable property there, so the large increases in the appraised value have had an especially dramatic financial impact in Chelsea, Orange, Williamstown, Topsham and Tunbridge.

The Co-op's property tax bill affects our rates.

Our property taxes are included in the rates we charge our members. The Co-op's management and your elected Board of Directors work extremely hard to control costs and to avoid raising rates. The effect of our increasing property tax bills began to show up in the last rate increase we implemented, which was filed in 1999.

Since then, property taxes have continued to increase by the percentages cited above. While we are not at this point planning to request an additional rate increase, property taxes are presently among the biggest expenses driving

our total costs up, at a time when most other costs have been holding steady or increasing by smaller percentages. As we work hard to avoid future rate increases, we have recognized that we must address the property tax issue directly.

The decision to appeal in court was a difficult one for the Co-op.

The WEC Board debated this over several months early in 2002 before approving the court appeals.

Board members are extremely sensitive to the burden a court appeal places on a small town. Some of our board members are residents of the towns where we are appealing. A number of our board members, and I, have served on select boards, school boards and Boards of Civil Authority in the towns we live in. We were not anxious to have the Co-op involved in a court case, and we were also extremely reluctant to involve the towns.

Unfortunately, while our disagreement is primarily with the guidance from the State of Vermont, it is the towns that set the value on our property and assess our property taxes, and we therefore have to follow the appeals process that is set out in the law.

The issue is fair and equitable appraisal for property tax purposes.

In press reports, it has also been suggested that whatever the Co-op saves in property taxes will just be paid by our members in their own property taxes. This is not entirely true. While most Co-op members are also property taxpayers, not all are, and there are also many taxpayers in each of our towns who are not served by Washington Electric Co-op.

As a result, WEC members may in fact be being unduly taxed, through their electric rates, compared to other taxpayers in the same town.

It has also been suggested by some that WEC's appeals are somehow linked to Act 60, or might threaten education funding on a statewide level. That is not the case, and certainly not the Co-op's intent either.

This is quite simply a question of fair, equitable and accurate property valuation. The property valuation system should neither overvalue nor undervalue property, and all property owners should thus contribute their fair share. WEC has always paid a considerable amount of

taxes in our 41 towns, and as town and school budgets increase, and as our own system slowly grows, we fully expect to continue to contribute our share.

But as we watched our tax bills double over a very short time, we did

what we believe any taxpayer might have done in the same situation. We carefully reviewed and analyzed what was happening, and appealed to the listers and Boards of Civil Authority in a number of towns in our territory over the course of a few years. We also made every effort to resolve this with the state officials providing guidance to the towns.

Responsibility to ratepayers

Ultimately, because we have a responsibility to our members and ratepayers to do everything we can to control our costs, we felt it necessary to take the next step in the appeals process, by filing in court. We would have much preferred to have discussed and found a way to resolve this prior to having to take that step.

We understand the concerns that local officials and some of our members in the affected towns have expressed. We hope all WEC members understand that we cannot simply accept property tax increases of this magnitude without exercising the right that we all enjoy as property owners, to try to correct appraisals that are not fair.



Cost-Benefit Analysis

A Solar-Energy 'Investor' Confronts The Economics Of His Choice

By Bill Powell
Director of Products & Services



As an advocate of solar electricity (solar photo-voltaics, or "PV"), I have followed PV technology, pricing trends, government incentives and electricity prices to determine if a grid-connected PV system is a good investment for the typical homeowner (i.e., me). With such advances in the grid-connected market as utility-approved inverters and net metering, the increasing price of electricity, and the fact that a grid-tied system needs no expensive bank of batteries to store power, I think the time has come, at least in our home in Calais, Vermont.

There are many good reasons to install PV, but earning a financial return on your investment in such a system has not been considered to be one of them. Yet I have determined that for a long-

term, income-oriented investor, a grid-tied PV system can be considered an alternative to investing in money market funds, mutual funds, the stock or bond markets. This is because the PV system produces electricity that has a quantifiable cash value. Just as you would "buy and hold" a dividend-paying stock, you can buy and hold a dividend-paying PV system. The money spent on the system is recouped when the house is sold.

I've put my money where my mouth is, and had a .96-kW system installed near our house. At current Co-op residential electricity rates, the average cost per kilowatt hour (kWh) is around 16 cents, based on an average rate of consumption. Vermont now has net metering – a law that allows grid-connected home-producers of electricity to sell power back to

their utility – so the value of each kWh produced by my PV system is the price of the electricity I am not purchasing.

The PV system and installation

Our PV system was installed in June 2002 by Jim Grundy of Elemental Energy, in East Montpelier. The system consists of eight BP Solar MSX-120 (120 watt) PV panels, and the Advanced Energy GC-1000 inverter connected to the grid. In the first 86 days on-line, the system averaged about 3.5 kWh/day production.

Calculating the investment return

Keeping the analysis simple, the value of the electricity produced, expressed as a percentage of the initial cost of the system, is the "dividend." The initial cost of the system is my investment.

Total system cost: \$9,400

Currently in Vermont, no state or federal tax credits are available for residen-

tial PV systems (some other states do provide credits), nor are there any buy-downs or other incentives available from any agency in Vermont. The only tax advantage is a waiver of the 5-percent Vermont sales tax on a PV installation.

What is an appropriate return? The 10-year U.S. Government Treasury Bond yields about 4 percent now. A money market fund is returning somewhere below 2 percent, and the stock market is anybody's guess. For the sake of picking a number, let's just target a pre-tax return for a low-risk investment of 5 percent.

Five percent of my investment is \$470. At the current 34.2-percent combined (27 percent federal and 7.2 percent Vermont state) marginal tax rate, after taxes, a 5-percent return turns into \$310. So if the PV system produces \$310 of electricity, it is equivalent to putting money into a taxable investment (like a stock that pays a dividend) paying 5 percent.

Is it reasonable for me to expect that the PV system can produce this amount of electricity?

To produce \$310 worth of electricity per year (365 days) requires an average production rate of \$0.85 electricity per day. At 16 cents per kWh, my PV system needs to produce 5.3 kWh per day.

Is this possible? Looking at this roughly: 960 watts X .90 efficiency X 4 hours average sun per day = 3.456 kWh per day. So it looks like the system could produce a dividend return of between 4 and

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5 percent. Of course, this depends on all the factors that influence the output of the PV system (amount of sun, temperature, shade, etc.).

The risk to my dividend is if electricity prices decrease. If this happens, the dollar value of the electricity I produce will be less, and consequently my dividend will be reduced. But I'm willing to take the risk. Historically, electricity prices have risen, and Vermont's electricity costs are higher than the national average.

Calculating the total return on my investment in a PV system requires estimating its value when it is "sold." I am assuming that at any point in the future the value of the system will be comparable to what I paid for it in 2002. Since I'm not planning on selling the system as a unit separate from our house, this is an assumption that I am never going to test. I could make a case that the system will appreciate with the rest of the house, as long as the housing market continues to appreciate (the PV system being considered a part of the house). Or I could make a case that the system itself will depreciate, the modules of the PV system breaking down over time. But who knows the life of a module? (Presently the modules have no value, if not covered under the 25-year warranty).

My conclusion is that with an electricity dividend of 5 percent, the return on my PV investment is 5 percent.

Further values

What other investment attributes have I gotten with this purchase? Consider these:

1. A hedge against rising oil, natural gas, and electricity prices. In this case, when electricity prices rise, my return increases.
2. As energy prices are a key component of inflation indexes, I have acquired a hedge against inflation.
3. I have diversified away from exposure



A small solar array in the yard can produce half of this homeowner's power.

to the financial markets.

4. Low risk. There is not going to be a lot of variability to this return. It's not likely to be 10 percent, but it also won't be negative.

As an additional, social benefit, installing the PV system has reinforced the economic value of conservation.

The investment return of the PV system is limited to the amount of energy that we, personally, consume at our household. Under Vermont's net-metering law I cannot get cash from the Co-op even if I produce, and supply to the grid, more electricity than I consume. Of course there is no chance of that happening because my system is sized to produce only half of our projected electricity usage, and based on the first half-year of production, this estimate looks accurate.

Looking into the not-so-distant future, as PV manufacturing costs continue to come down and solar electric systems become more affordable, the investment return for newer systems will increase. If additional incentives are forthcoming from federal, state and local governments, the return will also increase.

Conclusion

PV has often been dismissed by otherwise-interested individuals because it is "too expensive." However, if PV makes

sense as an investment, that conclusion becomes obsolete. Perhaps the framework I have described for my own calculations as a grid-connected Vermont homeowner might help others assess whether such an investment would make sense, economically, for them. (In many places around the country the combination of government incentives, electricity prices and available sunshine remove any argument that grid-connected PV systems are "too expensive" an investment.)

From the electric utility's point of view, diversification of its power supply is also a financial hedge. In the past, mistakes were made where all the power supply "eggs" were in one basket; and utilities have experienced

losses due to risky contracts and power agreements. The Co-op currently is about 40-percent renewable in its wholesale power mix, and this continues to be one of the dominant criteria our board uses in its decisions about power-supply choices.

I'll be watching my electricity production for years to come, to evaluate the actual return of my grid-tied PV system. Unlike some stock market investments I have made, I am not subject to accounting shenanigans, corporate malfeasance, or outright fraud. I will receive a dividend each month and I am not subject to the "mood of the market."

With a projected annual dividend of 4-to-5 percent, and a bias toward increases over time, this is an investment I am happy that I made. 

Notice to Members Concerning the 'Energy Efficiency Charge' for 2003

All Vermont electric distribution utility companies, including Washington Electric Co-op, collect an "energy efficiency charge" (EEC) as a percentage of each ratepayer's bill. Since 2000, the EEC has varied with each electric company, set by Order of the Public Service Board (PSB). The money funds a statewide energy-efficiency program called "Efficiency Vermont."

In October 2002, the PSB issued an Order setting (1) a new methodology for calculating the EEC based on a charge, per-kilowatt-hour, and (2) setting the EEC uniformly across Vermont.

The new methodology is referred to as a "mill" charge (a "mill" is one tenth of a cent). The statewide EEC for 2003 is set to about 3.6 mills per kilowatt-hour (kWh) for electric service billed for both BOTH energy (kilowatt-hours) and demand (kilowatts; the mill rate is adjusted downward), and applied to BOTH components.

However, the Co-op reached a settlement with the Vermont Department of Public Service (DPS), and the PSB approved an EEC for Co-op members lower than that collected elsewhere. The 2003 EEC for WEC members will be about 2.4 mills per kWh, approximately one-third less than elsewhere.

Residential:

\$ 0.002452 per kWh

Commercial and Industrial:

Non demand customers:

\$ 0.002452 per kWh

Demand customers:

\$ 0.001343 per kWh plus \$0.2833 per KW/month

Street and Area Lights:

\$0.088264, \$0.220661, and \$0.353059 per month for 100, 250, and 400 watt units, respectively.

On November 12, 2002, the PSB ordered utilities to notify all Vermont electric ratepayers of the following additional matters:

- That the 2003 EEC rates approved by the PSB in October 2002 are the maximum amount of anticipated charges;
- That the PSB (a) has a motion before it to reduce the amount collected by the EEC for energy efficiency services in 2003, (b) if approved, the 2003 EEC rates (with the exception of WEC) would be adjusted downward; and (c) however, the effect of any such adjustment on individual members' bills would be quite small since the EEC itself is a very small fraction of members' bills.

The PSB has determined that energy-efficiency services benefit Vermonters in two ways: first by lowering the electric bills of the individual members who directly receive the services; second, by lowering costs for all Vermont electric ratepayers by reducing electric utilities' total system costs.

During the past three years, the Co-op has also been able to reach agreements with the DPS and PSB such that the EEC paid by members was significantly lower than elsewhere. As before WEC members are still eligible for energy services from EVT, as well as directly from the Co-op at <http://www.washingtonelectric.coop>, or by telephone at 1-800-932-5245.

Efficiency Vermont provides services to business, farm, and multi-family housing customers, as well as certain additional residential services. For information, contact Efficiency Vermont at 1-888-921-5990 or at the website: <http://www.encyvermont.org>. 

Washington Electric Cooperative Inc.

Statement of Non-Discrimination

Washington Electric Cooperative Inc. is the recipient of federal financial assistance from the Rural Utilities Service, an agency of the U.S. Department of Agriculture, and is subject to the provisions of Title VI of the Civil Rights Act of 1964, as amended, Section 504 of the Rehabilitation Act of 1973, as amended, the Age Discrimination Act of 1975, as amended, and the rules and regulations of the U.S. Department of Agriculture, which provide that no person in the United States on the basis of race, color, national origin, age or handicap shall be excluded from participation in, admission or access to, denied the benefits of, or otherwise be subjected to discrimination under any of this organization's programs or activities.

The person responsible for coordinating this organization's nondiscrimination compliance efforts is Avtam Patt, the Cooperative's General Manager. Any individual, or specific class of individuals, who feels that this organization has subjected them to discrimination may obtain further information about the statutes and regulations listed above from, and/or file a written complaint with, this organization; or the Secretary, U.S. Department of Agriculture, Washington, D.C. 20250; or the Administrator, Rural Utilities Service, Washington, D.C. 20250. Complaints must be filed within 180 days after the alleged discrimination. Confidentiality will be maintained to the extent possible.

WEC Gets a Check-up

continued from page 1

service to call home when you're out-of-state). This price is for customers who pay with WEC's electronic billing option (E-bill).

- **6.9 cents per minute for interstate long-distance calls**, inbound and out-bound, for customers paying with the paper bill option.
- **8.9 cents per minute for in-state long-distance calls**, with either the E-bill or paper-bill option.
- **9.9 cents per minute for calling-card calls.**
- **No monthly fees**; no minimums.
- **Six-second billing**, which means your charges are recalculated in six-second increments rather than rounding off your calling time (upwardly) in larger segments.

Convenience:

- Powernet Global, our long-distance service vendor, will give you a credit on your bill to offset the charges of switching from your current provider.
- **No code numbers to dial.**
- **The E-bill option**, which reduces your bill-paperwork and lowers your cost.

How come?

"Our members may very well ask why their local electric co-op would get into the long-distance telephone business,"



said WEC General Manager Avram Patt.

"It's a fair question. But we want people to know at the outset that we are first and foremost an electric utility, and we dedicate our efforts one-hundred percent to that mission. We can offer this new telephone service because it's provided nationwide by a reputable company affiliated with co-ops. WEC staff members are not sitting at a switchboard forwarding telephone calls. There is a bookkeeping aspect and certain financial transactions that we'll be making on a monthly basis under our contract with the company, but none of that is a distraction from our job as a member-owned electric utility."

When polled in 1999 about possible new services WEC might provide, mem-

bers responded with considerable interest to the idea of long-distance. In 1999 the Co-op was anticipating a change in Vermont's statutes that dictate what rural electric cooperatives can and cannot do. That change came about in 2000, when the Legislature re-wrote the rules and expanded the co-ops' opportunities. (There had been no comparable restrictions on the business ventures of investor-owned utilities.)

Given that freedom, member-interest, and a good plan for telephone services provided by Powernet Global and the affiliation of the National Rural Telecommunications Cooperative, WEC's board of directors concluded that there could be real benefits for the Co-op's members in this service.

But other things have also changed since 1999.

"There are more ways to make long-distance calls now," said WEC Products and Services Director Bill Powell, "and companies that used to be restricted to providing local and in-state telephone services can now offer interstate long-distance, too."

"Still, this is a better deal," Powell said. "We can't expect it to always be the lowest cost-per-minute plan that's out there, but we're convinced it will remain a reliable and financially competitive service. We strongly advise people to look around, see what's out there, and compare."

Once the Board determined to go

ahead with long-distance services, Powell began shopping around. The calling plan now being offered was not the first one that came down the pike.

"It's the third, actually," said Powell. "We've test-driven other vendors and for various reasons decided against them. Something that was important to us when we looked at this one was the affiliation we would have with a national cooperative that serves hundreds of local co-ops. There's security in numbers and the knowledge that other co-ops have been working with the National Rural Telecommunications Cooperative and with Powernet Global and are satisfied."

WEC members interested in this service can visit the company's website (www.powernetglobal.com) for more information.

WEC and Powernet Global provide several ways for Co-op members to sign up for long-distance telephone service. You can call the Washington Electric long-distance program toll-free at 1-866-216-0332 and speak to a representative who, with your authorization, will make the switch from your current provider. Alternatively, you can sign up online, either at Powernet Global's website or the Co-op's website (www.washingtonco-op.com/pages/long_distance.htm). It's quite true that you have a choice of long-distance providers. Here's another one, linked to your local electric co-op, which you might want to consider.

Think Now About Running For Trustee

Deadlines Approaching For Candidate, Bylaw Changes

Washington Electric Cooperative, like any member-owned organization, is as good a Co-op as the members who participate in it. Therefore, it's time to begin thinking about running for a position on WEC's Board of Directors. And if you wish to participate by changing the Co-op's policies in some way or by establishing new policies, you should begin thinking about bylaw amendments that would address your areas of concern.

Washington Electric Co-op's Annual Meeting, where the election of candidates and voting on proposed bylaw changes is completed, is scheduled this year for Tuesday, May 20, 2003, at the Montpelier Elks Club. May might seem a long way off, but the processes leading up to the Annual Meeting begin much earlier.

As in every year, the terms of three Co-op members on the nine-member Board will expire at the time of the Annual Meeting. Incumbent directors may run for re-election if they wish, but in any case an election provides an opportunity for other members to join the Board. Board members are elected at large, and all seats are for three years.

Candidates for the Board of Directors must submit petitions signed by 25 members of the Cooperative. The deadline for those petitions this year is Friday, March 21, 2003. It is not a difficult nor complicated process. Interested members are urged to call the Co-op for further information on presenting successful petitions.

The deadline for proposing amendments to WEC's bylaws is earlier. Members must submit a petition regarding the proposed change or changes by Monday, February 10, 2003. For this purpose, the signatures of at least 50 members are required.

The bylaws are the legally binding rules the Co-op lives by. But remember, they are your bylaws. You don't need to be a lawyer to draft an amendment proposal. You do, however, need to know whether the subject that interests you is addressed in the current bylaws, and what those provisions are. You can obtain a copy of WEC's bylaws by contacting Deborah Brown, executive assistant, at the Co-op's office in East Montpelier.

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

PUBLIC NOTICE

PUBLIC NOTICE

HERBICIDE USE NOTIFICATION

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

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

The types of herbicide treatment used to keep utility lines clear are: stump, injection, basal, soil and foliar. These are the common methods used, although they may not all be used by the utility in your town. Landowners have the options of requesting herbicide treatment on cut stumps only, or that no herbicide be used at all. In the latter case, an administrative fee would have to be paid to the utility. Only electric utility rights-of-way which have tall-growing tree species with the potential of threatening the electric utility system are treated.

Utilities advertise by radio and newspaper prior to herbicide applications on all lines. Lines usually are treated only once in a four-to-six year period depending on the specific management cycle of the utility. Please check with your utility regarding the cycle of a particular line.

Some utilities use metal letters and numbers on distribution and transmission line poles. Others use them only on transmission lines. The letters, such as V.E.C. (Vermont Electric Co-operative), or V.E.L.C.O. (Vermont Electric Power Company), are not found on every pole. A check of several poles on a line should aid you in determining whether poles are marked and which utility is the owner.

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

If personal notification is desired, please fill out this coupon and return it to your local electric utility.

For more information, contact:

Consumer Affairs Division, Dept. of Public Service
120 State St., Montpelier, VT 05602
1-800-622-4496

Plant Industry Division, Dept. of Agriculture
Phil Benedict, Director
116 State St., Montpelier, VT 05602
1-802-828-2420

COUPON FOR PERSONAL REQUEST

Name _____ Town/City of Affected Property _____
Street Address _____ Telephone Number (Home) _____
Town _____ (Work) _____
State _____ Zip Code _____ O.K. to Use Work Number: Yes No
Electric Account Number _____ Best Time to Call _____
Electric Utility _____

Property of Concern: Year-round Residence Summer Residence Commercial Property
 Water Supply Land
 Other _____

Line and Pole Identification: Utility Initials _____ Numbers _____

We need ALL of this information in order to determine if you qualify for personal notification. If information is unobtainable, please state why. Use an extra sheet of paper if you need more space.

RETURN TO YOUR LOCAL UTILITY

VEL96