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WEC CO-OP CURRENTS

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Lost Your Power? *CALL!*

Here's a message that bears repeating: If your electric power goes out for more than just a few minutes, call Washington Electric to report it. Our 24-hour/seven-day-a-week telephone numbers are 223-5245 for local calls, and toll-free 1-800-WEC-5245. ("WEC" is 932.)

Don't assume that "everyone" is out of power and therefore the Co-op knows what's going on. Even if problems are widespread, your outage might be caused by a problem specific to your location. If you see that your neighbors' houses also have gone dark, don't take for granted that someone else has reported it. WEC would rather get more calls than necessary than have a section of power line disabled and not hear about it for hours.

That happens. In one instance not long ago WEC lost an entire substation due to a mechanical problem; it affected hundreds of Co-op members, and yet no one reported the outage until late in the day – unfortunately, after the line-repair crews had gone home. (They had to be called back.)

"You are our eyes and ears," Operations Director Dan Weston told a group of Co-op members in West Danville last fall. "We rely on you to let us know if the power goes out." The technology exists in the electric-utility industry to automatically signal the electric company when power flow has been interrupted, he explained, but at this stage of its development it would be prohibitively expensive to install in a rural, low-density territory like Washington Electric's. Weston said the Co-op would continue to monitor such technologies for possible deployment in the future.

Meanwhile, though, we rely on communication from our members.

If people don't call, it has ramifications. Crew Foreman Tim Pudvah's home phone rang at 7 p.m. one recent evening. It was the Co-op's answering service, informing him that he needed to go out and restore someone's power.

Which he did. But it turned out that the member had been out of power since 7:00 in the morning, and yet no one had called. That meant: 1) no electricity in the member's home for more than 12 hours; and 2) an after-hours callout for Tim.

Tips

Here are a couple of tips on the subject of calling. If you live in a subdivision or in close proximity to several neighbors, it's perfectly acceptable to have a phone tree of some sort, where you check with each other before someone calls to report an outage. In fact, that extra information can be helpful for the Co-op.

Just be certain that someone actually does make the call. And then it's important to "close the loop" later: check to be sure that everyone's power has been restored, and let Washington Electric know if not. (Outages can be tricky things.)

If you call from work or someplace else to discuss an outage at home, be sure to tell us that you are not at the house presently. A crew might have already worked in your neighborhood, and if your report sounds like a new one it could confuse the repair efforts.

Should you call the Co-op numbers (first paragraph) no matter what time of day?

YES. The staff's normal hours are 7:30 a.m. to 4 p.m. At other times calls are forwarded automatically to Rinkers Communications, and Rinkers contacts the lineman on call, even if it's 3:00 in the morning. If a heavy volume of calls comes in during a nighttime or weekend storm, WEC opens its Outage Restoration Center, the computerized data system used by the outage-management team to take calls and coordinate system-wide repair efforts from the office. The Center then stays active as long as necessary.

The automated system is an excellent, efficient way to report an outage. It's fast and user-friendly, and doesn't tie up the phone lines.

(Additional tip: keep a battery-powered radio handy, and during major storms check with local stations for updates on WEC outage-repair progress.)

But the main message again is "Call." It's a message that bears repeating.

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Inside

The Co-op line crew is taking on a new look with an influx of eager apprentices. See Linemen's Corner, page 5.

Washington Electric Cooperative
East Montpelier, VT 05651

Lost Your Power? Call!

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'Automated' is good

Okay, but what if you run into a busy signal?

Keep trying, within reason. If there's a major storm going on there may be a lot of telephone traffic. That doesn't mean your information is redundant; your outage could stem from an isolated problem.

So if you run into busy signals you might check with neighbors to find out whether they have lost power and have successfully reported it. And we suggest that you call intermittently (perhaps every hour or so) until you get through, if your power has not come back on.

Washington Electric has been steadily improving its storm-response service. One feature is expanded phone-line capacity, and this could mean that you get an automated response rather than a WEC employee. It's important for members to understand that the automated system is an excellent, efficient way to report an outage. Its data bank includes the phone numbers of every WEC account; it will "read" the number you're calling from and ask if that's the location of the outage. If you press "1" to confirm that it is, you're done; your outage has gone right into the dispatcher's computer.

"It's user-friendly," said WEC General Manager Avram Patt, "and it's actually better for people to use the automated system than to wait to speak to an employee, because it's faster and doesn't tie up the phone lines. If people have specific information for us – for example, if they've seen a power line on the ground, or their neighbors are also out of power – speaking to an employee would be very helpful."

In such a case have a bill slip when you call, if possible, because it contains map-location information that can steer a line crew to the very poles, transformers and fuses that provide your power.

"For most calls during a major outage, though," Patt reiterated, "the automated reporting system is preferable."

WEC is testing a new feature, which is an automated call placed to you by the Co-op at some point after WEC has restored your power. This is being tried out in selected locations. Automated calls can be annoying (the system is designed to prevent their being placed at inappropriate hours), but the call-back doubles as a way to make sure that your power is actually working again.

It's winter, and storms will happen. In a rural area, that means power outages.

But winter or summer, if you lose your power remember that we may not know unless you tell us. Don't be a stranger. Give us a call.

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 Administrative Assistant Deborah Brown, 802-223-5245.

'Coventry' From An Economic-Development Perspective

(WEC Boosts Power From Methane Plant)

In October WEC members voted in favor of the Board's proposal to add a fourth engine to the Co-op's landfill gas-fueled electric-generation plant in Coventry, to increase the output from the plant. The 1,670-to-51 vote followed the approval of the Vermont Public Service Board on October 5.

The general contractor and main subcontractors were Vermont firms; the transmission line was constructed by Vermont firms; almost all the employees who built the plant were employees of Vermont firms.

The latest news is that the engine has been installed and was put into operation on Friday, January 12, 2007. When the plant opened in July 2005, housed alongside the NEWS landfill (a subsidiary of Casella Waste Management Inc.), three engines were in place. The Caterpillar engines are fueled by methane produced by organic decomposition within the landfill.

The rated output of each engine is 1.6 megawatts (MW). With all four engines now operating, the plant is capable of producing 6.4 MW – equivalent to 50 percent of the Co-op's electric demand.

'Economic engine,' too

The Coventry plant yields other benefits besides it production of affordable power for Washington Electric. WEC General Manager Avram Patt recently summarized several of these benefits, informally, in response to an inquiry from a consultant writing a report for the Vermont Council on Rural Development.

"We have never done an impact assessment from an economic-development perspective," Patt replied. "But we do know the costs and impact for WEC specifically, in great detail. I'm going to toss out a few rough (not exact) numbers and pieces of information that may be helpful.

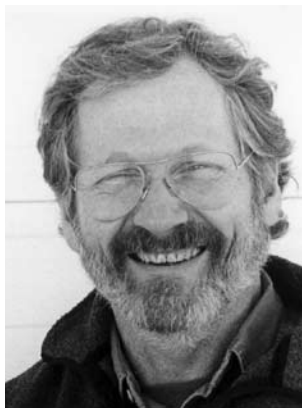
- The plant was recently expanded to 6.4 MW from 4.8 MW original generating capacity, as of January 2007. (It will eventually get to 8 or more)
- Total cost of the original project, including seven miles of new transmission line plus the expansion, is over $10 million over two years. It would take some work to separate out from that amount how much was for major equipment purchases (not necessarily a local benefit) and how much for construction on site. But a lot of it was spent locally.
- General contractor was Pizzagalli, and their main subcontractors were Vermont firms (masonry, electrical, roof, etc.). Transmission line was constructed by Vermont firms. Almost all employees who built the plant were employees of Vermont firms.
- The plant employs two fulltime operators (not WEC employees)
- We paid more than $90,000 in property taxes in 2006 for the facility.
- It produces additional revenue for the Vermont owner of the landfill (lease and gas payments)
- It is now supplying almost half the power used by WEC's 10,000-plus member households and businesses. WEC basically purchases this power from its own subsidiary for approximately $1.7 million/year, so that amount stays in the Vermont economy. If we did not have the plant, the cost of that amount of power would be more like $2.9 million, pretty much all of it would be *imported* supply and *exported* dollars. (These are rough estimates for 2007.)
- Renewable energy certificates (RECs): WEC sells the renewable attributes of the output to a buyer in Massachusetts, and therefore doesn't claim that this power is renewable in our own supply portfolio. The attributes are estimated to generate $1.9 million revenue for WEC in 2007.
- As a result of the low cost of power and the RECs revenue, our members have not seen a rate increase since January 2000 and are not expected to for another few years. To give a very rough estimate: if we didn't have the plant, and had increased rates to make up for the increased power cost and lost RECs revenue described above, our members might be paying something like $1.5 million/year more in rates, rather than having the use of that money for other purposes.

"I hope this helps you say [evaluate] the economic impact," Patt summarized. "The figures are estimates [rather than] exact calculations."

Manager's Report

Judge Rules on WEC Property Tax Appeal; 'Different Road' Improves Co-op's Profile

By Avram Patt



This past October, WEC received the decision in a long-standing case in Orange Superior Court involving the appeal of our property taxes in five towns.

WEC had appealed in each town and then gone to court in 2002 because we felt that the methods being used to appraise the Co-op's poles and wires significantly overstate the value of our rural utility system. In her ruling, Judge Mary Miles Teachout did not agree with our position, but also did not address the issue of whether the methodology the towns had originally used was correct. While we believe that we had a strong case and that it was presented well by WEC's attorney, we have decided it would be best to accept the decision, and at a recent meeting your Board of Directors decided not to appeal the decision to the Vermont Supreme Court.

This is a difficult and complicated issue and one which raised questions for some of our members, particularly in the towns we involved in the case. While I won't retell the entire history or re-argue the court case here, I do want to summarize the problem that led first, to our attempts to resolve it, and then our reluctant decision to go to court.

Towns follow state guidelines

WEC pays property taxes on all our poles, wires and equipment in the 41 towns in our territory. It is a significant expense and we monitor it carefully to make sure town listers are using accurate information.

Starting in the late 1990s, we saw our tax bills increasing at astonishing rates annually. The size of the increases could not be explained by any improvements WEC had made on our system, by increases in local budgets adopted by town voters, or by legislative changes concerning property taxes. Between 1998 and 2002, we saw annual increases across our entire system of 9.7 percent, then 10.9 percent, then 23.4 percent, 32.4 percent and 11 percent, with each increase compounding the increases from the years before.

We now pay well over half a million dollars annually, which represents about 5 cents out of every dollar on your electric bill.

In the course of five years, our property tax bill doubled. We now pay well over half a million dollars annually, which represents about 5 cents out of every dollar on your electric bill. I believe this is significantly more than other Vermont ratepayers pay towards their utility's property taxes, even in Co-op towns where some residents are served by another company.

As any property owner seeing these kinds of increases might have done, we analyzed what was going on and began to appeal our appraisals in a number of towns where we had a lot of property and where the changes had been dramatic. We worked with a property appraiser with experience in utility appraisal, and determined that the guidance town listers were being given by the Vermont Department of Taxes was flawed, that it did not sufficiently recognize the lower value of extremely rural poles and wires that serve very few customers.

While our disagreement really was with the Tax Department, under Vermont's property tax system, it is the towns that actually set the property values for their grand list, even when they are relying on advice from state officials. WEC members should know that for at least two years before going to court, we met with state officials and attempted to reach some kind of compromise. We met with state officials again after we had filed our appeal to see if the issue could be resolved before it went before a judge.

In the end however, the only legal action available to us when informal ones had been exhausted, was to appeal our appraisals to the listers and Boards of Civil Authority, and then beyond that to superior court. We followed this process with five Orange County towns: Orange, Chelsea, Tunbridge, Topsham and Williamstown. These towns were chosen because we have a lot of property there and our appraisals had skyrocketed in each of them. We also wanted the appeals to be consolidated into a single case in one county, in order to lessen the burden of litigation on the towns and the judicial system, as well as the Co-op.

Uncomfortable duty

Going to court was not an easy decision for me or other staff involved in this issue, for our attorney Joshua Diamond, and most of all for your elected board members, who debated and wrestled with the decision both before we filed our appeal and during the long period leading up to the court hearing last May. No one was happy having to take towns in our territory to court, and some of our board members live in the five towns that were involved.

We have not had to increase your rates for seven years and do not see a need in the near future. Meanwhile, other utilities have had to dramatically increase rates.

We would not have pursued this very complex case if we had another way to resolve this costly problem for WEC and its members. Although the judge in this case did not agree to our proposed method for setting the value of our poles and wires, she also did not rule on the Tax Department's methodology that the towns had originally used. While the decision does not on the whole give us the relief we were seeking, it also does not clearly resolve this question going forward, and it is hard to predict exactly what it will mean in the long run.

I know that generally speaking, all WEC members want their Co-op to spend carefully and wisely in all areas of our operations, and to take actions to control dramatically rising costs whenever possible. But when it came to trying to moderate the growth of our half-million-dollar system-wide property tax bill, the only course available, after attempts to compromise were not successful, was to involve towns in a court case.

WEC will not be appealing this case any further, although the valuation of rural utility property is still a problem for us. Now that the case in Orange Superior Court is concluded, we wanted to not only report about it to our members, but to briefly recap what this case was about to begin with.

Bills and rates; WEC in comparison to our neighbors

Washington Electric Co-op serves the most rural territory in Vermont, with only eight members per mile of line. As I have discussed here before, this has tended to drive our rates higher than others, because our non-power costs (the poles, wires and other costs of running the distribution system), are spread among a small number of people who for the most part do not use a great deal of electricity.

We have also reminded WEC members that we pay "bills, not rates." Your bill is calculated using two factors: the *rate* per kilowatt hour (kWh), and your *consumption* (how many kWhs you use).

Although every Co-op member has different needs for electricity, on average our members have been using noticeably less electricity per month than the average Vermont residential ratepayer. In addition, we have for many years had a rate structure that gives residential members their first block of power (currently 150 kWh per month) at a lower cost, and charges a higher rate for all usage beyond that amount.

As a result of WEC's rate structure and our lower average residential usage, WEC members with low and moderate usage have paid bills that are about the same or sometimes lower than if they had used the same amount of power on another utility's lines. WEC members with higher monthly usage have had higher bills than at neighboring utilities because a larger part of their usage is billed at the higher rate.

Successful strategy

`As most Co-op members know, we have not had to increase your rates for the last seven years, and we do not see a need for an increase in the near future. During this same time, other utilities across the nation, the Northeast, and Vermont have had to dramatically increase rates. In Vermont over the last three years, almost every utility has had at least one rate increase approved by the Public Service Board, usually double-digit increases. The major cause of these increases is rising wholesale power costs. (See "The Broken Promise of Natural Gas," page 4, for more on this issue.)

Because we set ourselves on a different course, WEC has avoided much of the cost increases and the volatility that are part of today's wholesale power markets. Our *rates* are now lower across the board than those of some other Vermont utilities.

And for a growing number of members with low to moderate usage,

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The Broken Promise Of Natural Gas

How Katrina and the 'Dash to Gas' Have New England Over A Barrel

It's not the first time that a new energy source for domestic power production failed to live up to its billing.

But the consequences have been serious. New England's fling with natural gas has contributed to the region's dubious status as having among the highest average residential electric rates in the country (exceeded only by Hawaii). As Vermont utilities contemplate the approaching end of the state's contracts with Hydro Quebec and Vermont Yankee, further reliance on a spot market dominated by natural gas is a sobering prospect – and a reason for state officials to get serious and creative about providing alternatively for our future energy needs.

In the 1950s, on the cusp of America's post-World War II economic and technological expansion, the Eisenhower Administration dismissed an energy policy that had been drafted by the Paley Commission for President Harry Truman, which envisioned the construction of millions of modern, solar-heated homes in the U.S. within a decade. Instead, President Eisenhower and his advisers were lured by the promise of the so-called "peaceful atom." Nuclear power, its proponents predicted, would almost be "too cheap to meter." It was no such thing.

The claims for natural gas were not as outlandish during the so-called "dash to gas" of the past decade. But the technology did promise certain advantages: lower emissions than other fossil fuels used in power generation, and an abundant domestic supply at relatively stable prices. Natural gas thus became the fuel of choice in New England, as new power plants came online to meet the growing electricity demand.

Yet as its profile within the market increased, so, too, did factors contributing to its cost: storm destruction where the fuel is produced and shipped; limited means of access to the fuel in our region, and high costs of delivery due to New England's location "at the end of the pipeline"; competition from the home-heating industry; and globalization that has produced lucrative markets for natural gas in India and China.

These factors were not foreseen by many in the industry when New England turned to natural gas in the 1990s. The result of the power-plant development that took place is that natural gas now frequently sets the "marginal price" that drives electricity costs.

'Marginal' power

Marginal power is sometimes described as "the next increment of power" – power sources that ISO New England has at the ready in case it is needed. Here's a simplified description of how the system works.

ISO New England, based in Holyoke, Massachusetts, operates the power system for the six-state region. It draws from a roster of several hundred generating plants that are certified to sell wholesale power to ISO, including nuclear plants, hydroelectric stations, fossil fuel-powered plants like oil, coal and gas, and the small amount of commercial wind power generated in New England – in other words, virtually every source abundant and reliable enough to contribute.

ISO organizes its power supply a day ahead of time, by calculating how much electricity the region is likely to need and inviting the certified providers to submit bids that specify **how much** electricity they will provide, from **which power plants** it will come, **when** during the day they will provide it, and of course **how much they will charge.** The producers base their bids on such considerations as fuel prices, debt load, profit requirements, and other factors that drive their operating costs.

ISO then stacks its order for the day, based on costs and quantities. The lowest bids come first, followed by the next-lowest… and continuing until the anticipated need is met (generally somewhere between 18 and 22 gigawatts for the six states).

However, ISO must also contract for reserve power in case plants go off line for some reason, or if demand exceeds expectations. The "reserve margin" must be equivalent to the largest power block contracted for that day. And it is, by definition, the most expensive power admitted into the day's calculation, since if it were less costly it would have been placed in the stack to begin with.

Ironically, the price for the *reserve* margin becomes the price *all* the providers are paid that day. That's why its cost is so significant.

In New England, marginal power is almost always in production, according to Michael Dworkin, former chair of Vermont's Public Service Board and currently director of the Institute for Energy and the Environment at the Vermont Law School.

"There are 8,760 hours in a year, and 85 percent – that is, five-sixths – of the time a fossil fuel unit is on the margin," Dworkin says. "And it's usually a natural gas unit. So the price of natural gas sets the energy clearing price for the New England energy market."

"85 percent of the time a fossil fuel unit is on the margin, and it's usually a natural gas unit."
— Michael Dworkin

Joined at the hip

Stan Faryniarz, an economist with La Capra Associates of Boston, agrees. La Capra is a consulting firm that provides market analysis, portfolio management, energy-planning and transaction services in electricity and natural gas. Among its customers is Washington Electric Co-op. (La Capra helps WEC identify sources for its power needs, and has responded creatively to the Co-op Board of Directors' policy favoring affordable renewable-energy sources.)

"There is a pretty direct relationship between natural gas prices and electricity prices," says Faryniarz. "Natural gas [accounts for] much of the generating capacity in New England, and most of the time it's the marginal capacity. That marginal capacity is the thing that drives the price of power."

Faryniarz provided a graph (below left) that documents this connection. Over a three-year period beginning in May 2003, the lines representing 1) the Massachusetts day-ahead on-peak spot market power price, and 2) the Boston City Gate natural gas price, rise and fall – dramatically at times – in nearly perfect parallel. They commence at approximately $55 per megawatt hour (MWh) and $6 per million British thermal units (MMBtu), dip slightly in November 2003, and then spike in a January 2004 cold snap to around $100/MWh and $12/MMBtu. For the entire period the patterns for natural gas and electric power are in accord, including a radical spike in September 2005 ($125/MWh and $14/MMBtu) reflecting the mayhem and supply disruptions caused by Hurricane Katrina.

Ken McConnell, a media relations officer for ISO-New England, explains that the connection between power prices and natural gas prices in our region is a recent phenomenon.

"Back in the 2000-2003 era, which was sort of the last buildup in terms of power-plant construction, investors built about 9,000 megawatts in generation capacity. That was a 40-percent increase over what we had had. Virtually all of that 9,000 megawatts was natural

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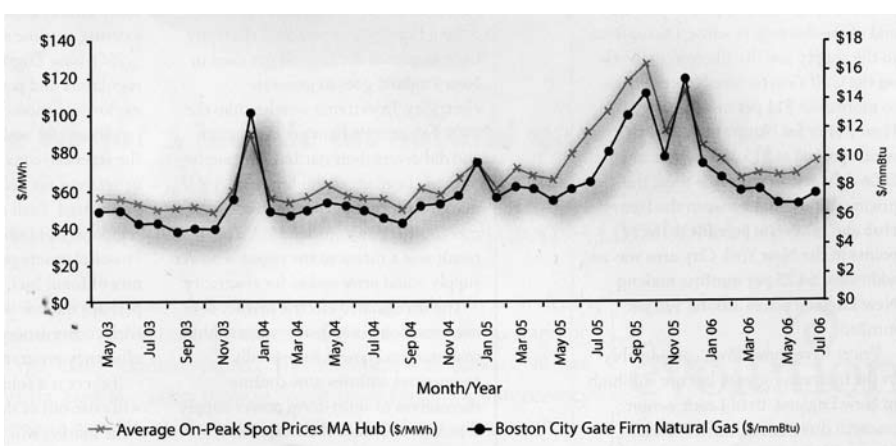
"There is a pretty direct relationship between natural gas prices and electricity prices." — Stan Faryniarz

New England Natural Gas and Electricity Prices
May 2003 – July 2006



Source: La Capra Associates

Chart courtesy of *Home Power* magazine

Smooth Sailing . . . So Far; New Faces on the Line Crew

Paraphrasing radio personality Garrison Keillor, it's been a quiet time in central Vermont for Washington Electric's line workers – at least for the first months of the winter.

"The winter has been kind to us so far," said Operations Director Dan Weston in January. "We've dodged a lot of bullets. There have been several storms with a few thousand people out of power in the southern end of the state, and we've been on the threshold of at least three wind storms in the last month where if it blew any harder we would have had significant outages. But each time there's been very minimal impact."

Cold weather and abundant snow are rarely a problem for power lines. Rather, it's high winds, ice storms, and wet, heavy snow that bring down trees and damage power lines and poles. With a mild start to the winter, those conditions have not prevailed in central Vermont.

Yet.

So what have the line workers been doing? One of the main things has been building line extensions for new Co-op members. Under normal circumstances the bulk of this work is done in the warmer months. Line extensions can be, and are, performed year 'round, but traditional harsh Vermont winters usually create a need for repairs that keep the crews busy. Not so this year … so far.

Also, people usually put off moving in Vermont until more-manageable weather.

"To have so many people anxious to get a line built this time of year to serve a new home is somewhat unusual," said Weston.

System upgrades here and there

Meanwhile, WEC linemen and engineers have been busy around the Blackhawk Road area off Route 110 in **Chelsea**, where they've been upgrading a section of power line that extends toward **Corinth**. Somewhat more than a mile long, the line runs crosslots, and is a reminder that when WEC originally built its electric system the idea was just to get power to rural people using the most-direct and least-expensive route possible. Those early routes sometimes present problems now for the Co-op, as owners have come and gone and the use of the land has changed.

"This section in Chelsea is one of our older lines, and we've relocated it, wherever possible, to places where we'll have better access for servicing it when we need to," said Weston. "Although," he added, "it still won't be ideal."

That's because of the rugged, mountainous terrain.

"We pretty much have the poles in place," said Senior Field Technician Brent Lilley. "We've set about 35 new poles up there, but it would be very difficult to string the wire by hand."

This will be a good place for the Co-op to use an off-road track digger it is presently leasing. Somewhat of a cross between a tank (see photo, page 8) and a traditional utility digger-derrick truck, the machine is designed to work in rough and remote locations even in snow, and can handle tasks ranging from digging, lifting and setting poles to elevating linemen so they can work aloft.

"It's got a bucket-boom," Weston explained. "They can go right up and tie the conductor [wire] in and sag it correctly. It's going to alleviate quite a bit of climbing as well as allow us to set poles off the road more easily."

Weston anticipated sending the track digger to finish the Blackhawk Road line-upgrade project sometime in February.

WEC has also been making progress in **Williamstown** and **Washington** with its fusing program. Adding more fuses throughout the 41-town electric-distribution system will often reduce the number of people affected by an outage. Residents are apt to see WEC line crews anywhere in these two towns this winter, as they install fuses according to the plan.

"There's going to be a concerted effort to try to finish the project there before spring," said Weston.

LINEMEN'S CORNER

New talent

The biggest news for the line crew right now is not where they're working or what they're doing, but the Co-op's gradual evolution to a future generation of line workers. Utility line work is an arduous, demanding job, and Weston sees it as his responsibility to look to the Co-op's future by bringing new workers in so they can learn the ropes, and learn the profession, from the veterans. It takes five years of study and on-the-job training for an Apprentice Lineman to graduate to Class A Lineman.

Of the newest group of operations employees, **Jason Smith** of Woodbury has been with WEC for the longest time. A 2004 graduate of Hazen Union High School, Jason started as temporary summer help in May 2005 after working as a welder for the Sam Daniels Company. He knew something about the Co-op, having spent time fishing with WEC Foreman Bob Fair, a family friend.

Jason was hired as an Apprentice Lineman in December 2005, and after a year on the job he freely admits he's still learning new things every day. That's liable to continue for a while.

It certainly is the case for **Nate Cloutier**, who just came on board on January 2, 2007. Nate, of East Hardwick, is also a Hazen Union graduate (Class of 2003). He is making the transition to line work from M&J Tree Service, one of the contractors WEC hires to maintain its 1,260-mile right-of-way. Working for M&J gave Nate plenty of experience clearing danger trees for Washington Electric and working in rough weather conditions. He was also acquainted with WEC's personnel, whom he now joins as an Apprentice Lineman.

Not all the new employees are new to line work. **Doug des Groseilliers** comes to WEC as a Class A Lineman with six years experience working for a municipal utility. Doug and his wife Nicole have two children (Abigail, 3, and Daniel, 11 months) and live in Hardwick – and yes, like Jason and Nate, Doug went to Hazen Union, graduating in 1994.

Doug's family runs a well-known funeral home in Hardwick, and Doug has helped his father in the business. But he has line work in his blood, too; his grandfather worked for 33 years as a lineman and foreman for Granite State Electric in New Hampshire.

There's also another new face around the warehouse. **Kyle Bresette** of Barre graduated from Spaulding High School last June (2006) and found himself working in a restaurant on the Barre-Montpelier Road, where he had already become assistant manager when Dan Weston and his family stopped by to eat. Dan overheard Kyle talking to another employee about the importance of working conscientiously and taking responsibility for your tasks. Dan liked what he heard, and asked Kyle if he'd be interested in working for an electric utility. The answer was yes. Kyle has been working in the warehouse, as well as assisting the line crews as a ground man, since January 2.

The reason WEC had openings is that the Co-op recently lost two employees who took jobs elsewhere. Class A Lineman **Phil Poulin** of Washington served Washington Electric Cooperative for nine years, and Maintenance Foreman **Mark Maloney** of Barre Town, a licensed electrician as well as a lineman, left after 15 years. The Co-op is grateful for Mark and Phil's years of service, and we wish them the best.

Jason Smith

Nate Cloutier

Kyle Bresette

Doug des Groseilliers

Efficiency Saves

Solar Hot Water Heats Up In Central Vermont

Public Meetings Planned in Chelsea, Norwich

By Phillip Mulligan

A combination of rising fuel costs, international politics and global climate change has prompted a group of concerned citizens living in and around the First Branch of the White River to form *The First Branch Sustainability Project.* The mission of this new organization is to reduce and eventually eliminate our region's dependency on fossil fuels.

One of the Project's first initiatives is The Solar Hot Water Challenge. The goal of this initiative is to promote the installation of domestic solar hot-water pre-heaters on as many homes as possible. The first job is to educate homeowners about the effectiveness and affordability of this established technology.

To advance people's awareness of the option of solar water heating for their homes, we have scheduled a public-information meeting for Saturday, March 10, at the Chelsea Town Hall. It will begin at 10 a.m.

Financial assistance is available for people wishing to install solar hot-water systems. Sources include the Vermont Solar and Small Wind Incentive Program, federal tax credits, and other means of financing (both existing and potential, as more organizations and banks see the merit, and the market, for these systems). The practicality and payback of solar hot water will differ for each home. Variables include site suitability, efficiency of your current system, and the amount of hot water your home uses.

In Vermont we can expect a solar system to supply 95 percent of our hot water needs in the summer and 50 percent in the winter.

In Vermont we have 80 percent of the same sunshine that Florida has, and can expect a solar system to supply 95 percent of our hot water needs in the summer and 50 percent in the winter. Solar water-heating systems do not replace your water heater; they pre-heat the water before it reaches your water heater, which lessens the work your water heater needs to do to reach its preset temperature limit. Colder temperatures in winter means your water heater must consume more energy than it does in the summer to finish heating your water, but a 50-percent energy savings in winter is considerable, especially considering the greater payback the rest of the year.

For an average family of four, an installed solar water-heating system can cost between $4,000 and $8,000, yielding savings of somewhat more than $500 a year (calculated with propane at $2.75 per gallon). With the incentives and tax credits that are available, it is possible to reduce those installation costs by as much as $3,000. Over time, a solar system more than pays for itself with reduced energy costs.

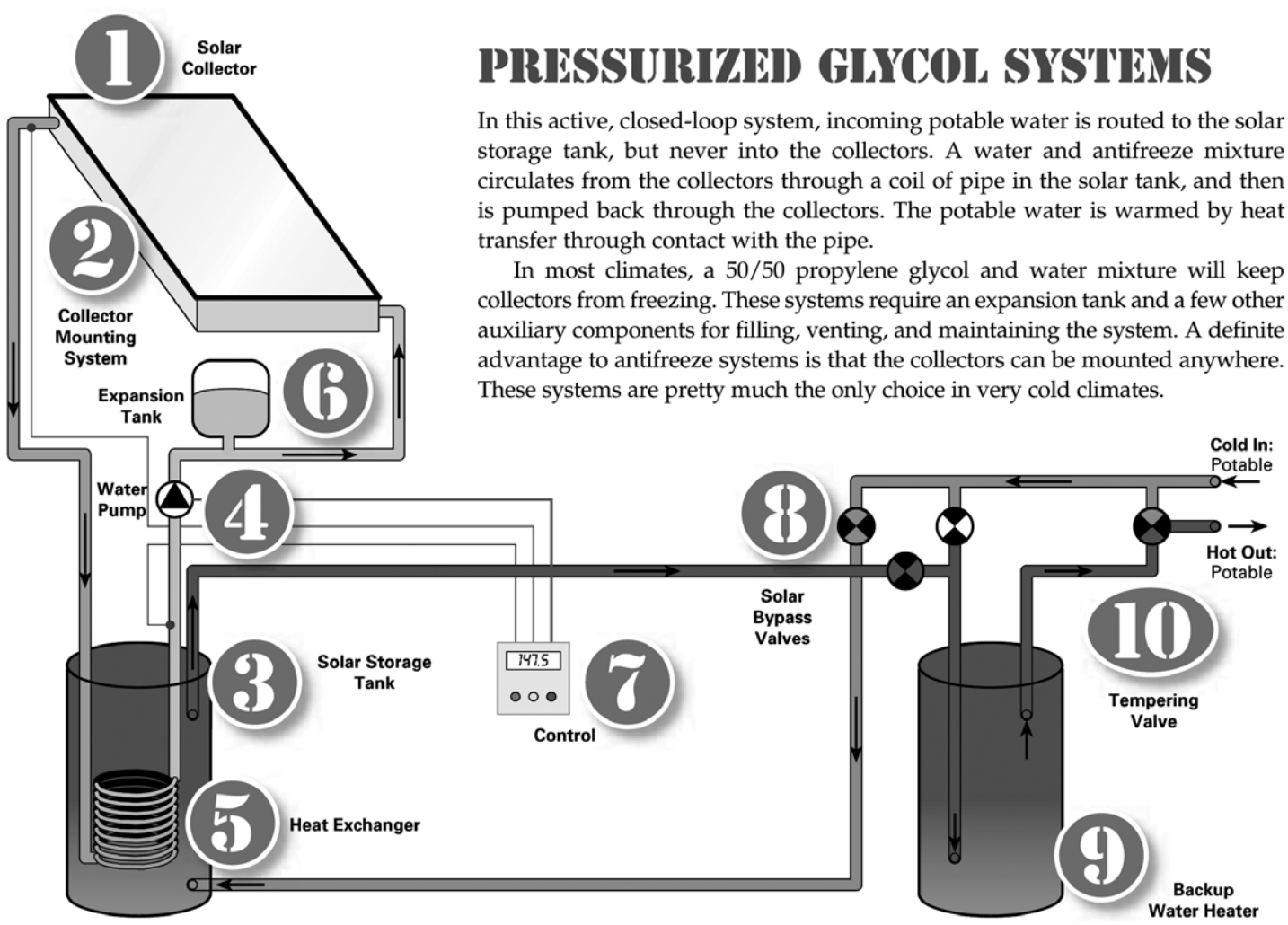
The geographical reach of the Solar Hot Water Challenge will be centered on the White River's First Branch watershed and neighboring towns that show strong interest. Yet anyone who is interested in heating their water with the sun is encouraged to participate.

The committee's goal is to have 50 homes committed to solar hot water by May 1, 2007. Already 120 people have put their names on the "interested" list. We hope that our March 10 public-information meeting in Chelsea will spur further interest and provide at least preliminary answers to questions people might have. Five Vermont-based solar-system installers will be present. People will also be instructed how they can do a site survey of their own homes that companies can then use to generate an estimate for installation.

We plan to schedule a second public-information meeting in or near Norwich and will announce its time and location when we have that information. Currently we are looking for some people to volunteer as town coordinators to help publicize the upcoming info sessions and get the word out about this viable and useful technology.

Please respond with your interest to Phillip Mulligan at phillip@sover.net, or telephone (802) 685-7784.

Phillip Mulligan of Chelsea is a WEC member. The Solar Hot Water Challenge Committee includes Chris Wood, Henry and Cornelia Swayze, Kathryn Parlin, Rob Benson. Hannah Dennison, Phillip Mulligan, and Dan Retz.



PRESSURIZED GLYCOL SYSTEMS

In this active, closed-loop system, incoming potable water is routed to the solar storage tank, but never into the collectors. A water and antifreeze mixture circulates from the collectors through a coil of pipe in the solar tank, and then is pumped back through the collectors. The potable water is warmed by heat transfer through contact with the pipe.

In most climates, a 50/50 propylene glycol and water mixture will keep collectors from freezing. These systems require an expansion tank and a few other auxiliary components for filling, venting, and maintaining the system. A definite advantage to antifreeze systems is that the collectors can be mounted anywhere. These systems are pretty much the only choice in very cold climates.

Manager's Report

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your *bills* are now lower than, or about the same as, bills from a number of other utilities. Here are some examples:

400 kWh/month

(about 3,000 WEC members use this amount or less)

WEC	$62.81
Green Mountain Power	$63.31
CVPS	$61.03
Vermont Electric Co-op	$71.51
Stowe Electric Dept.	$63.15
Hardwick Electric Dept	$68.54

600 kWh/month

(about 6,300 members use this amount or less)

WEC	$96.21
Green Mountain Power	$90.06
CVPS	$85.78
Vermont Electric Co-op	$105.24
Stowe Electric Dept.	$94.41
Hardwick Electric Dept.	$102.70

Over the next few years, most utilities will continue to need additional rate increases. WEC is not immune from rising costs in other areas: property taxes, wages and employee benefits, insurance, fuel, and materials, especially steel, to name a few. These will eventually need to be reflected in rates, but not in the immediate future.

We have succeeded in holding the line on our largest expense, power supply, by following a strategy we developed as we were ending our long-term supply arrangements with Vermont Yankee several years ago. That strategy led to our landfill methane plant in Coventry and to other supply choices like our commitment to UPC's proposed wind project in Sheffield.

We're pleased to provide you with these latest numbers, not because anyone is happy that others are paying more than they used to for electricity, but because Washington Electric Co-op's members aren't.

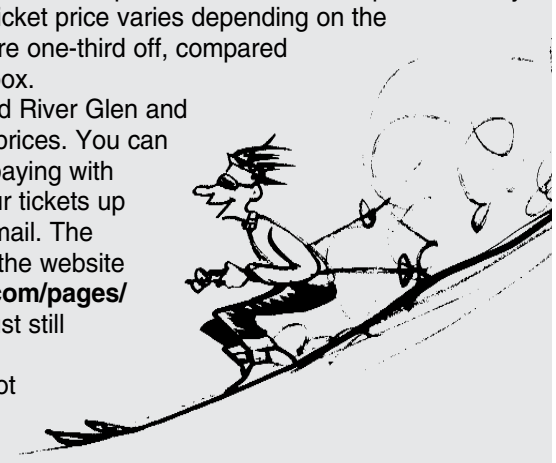
A detailed report about our property tax case was published in the December 2002/January 2003 issue, available on our website. Bill comparisons courtesy of a quarterly report issued by the Vermont Public power Supply Authority and are current as of January 1, 2007.

Now, Call WEC for Mad River Glen Tickets

The geese have flown south, the temperatures have plunged, and ski season is coming! This year the Co-op has an improved deal for WEC members who ski at Mad River Glen – which is also a cooperative. You can now purchase day passes at the Co-op office. The ticket price varies depending on the day, but weekday adult passes are one-third off, compared to tickets purchased at the basebox.

WEC is a ticket retailer for Mad River Glen and members are eligible for special prices. You can call and order tickets by phone, paying with a credit card, then either pick your tickets up here or have us put them in the mail. The Co-op will fill orders placed from the website (**http://www.washingtonco-op.com/pages/madriver.htm**), but members must still either pick them up or have them mailed to your address. This is not an electronic ticket offer.

See you on the mountain!



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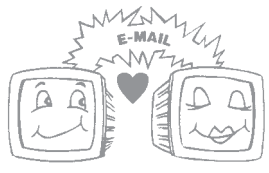

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Natural Gas

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gas-fired," McConnell says.

"In New England we continue to favor natural gas as a resource of fuel to produce electricity, largely for its environmental qualities. And at the time [of construction] it was relatively inexpensive. Everybody thought it was limitless in terms of availability, and that the price would stay low."

That conceit was shattered by Hurricane Katrina. The 2005 storm disrupted natural gas production and pipeline transport at the Henry Hub shipping point in Louisiana, which dispatches nearly half the U.S.'s domestic natural gas.

The conventional wisdom was that natural gas was limitless in terms of availability, and its price would stay low. That conceit was shattered by Hurricane Katrina.

"Whenever you have shocks to supply that way, and have razor-thin margins and global competition, it will affect price," says Faryniarz.

Though 2,000 miles away, the hurricane jolted New England because we lie at the end of the delivery pipeline and our $17/MMBtu delivery charge is the highest in the country. Some observers characterize New England's position, in terms of receiving natural gas supplies, as "landlocked." The Henry Hub isn't our only source for natural gas, but pipelines from New York and Canada, and a liquefied natural gas port in Boston, are distinctly secondary.

The severe cold snap of January 2004 illustrated another issue. Dworkin, of the Vermont Law School's Energy Institute, says that only one-fourth of the natural gas used in New England goes to generate electricity. Merchant power generators (those not owned by electric utilities) can divert their natural gas supplies to home heating instead of electricity, and that's what they did during the 2004 freeze, because the financial margins for that purpose exceeded the margins for power production.

The result was a threat to the region's power supply – and price spikes for electricity.

It's worth mentioning that Washington Electric Cooperative was one of the few voices warning against overinvestment in natural gas.

"Some people in the business, including WEC, felt that our region was becoming too dependent on natural gas," says WEC General Manager Avram Patt. "In the Co-op's case, we followed a different path, which has reduced our reliance on the spot market and the natural gas generators that contribute so much to high and volatile regional prices. But it doesn't give us much satisfaction to say 'we told you so.'"

What now?

Electricity deregulation during the 1990s compounded the problem by removing a potential hedge against high-cost marginal power. (Vermont, alone among New England states, did not deregulate retail power.) For decades, electric utilities had negotiated long-term contracts with their power suppliers, in order to lock in steady, reliable rates. But with deregulation, short-term contracts took over. Competitive utilities now seek to reduce their exposure to price-spike incidents, and power generators take a similar approach, knowing they must be economically mobile to meet their natural gas needs in times of supply interruptions or price increases.

The result is that market participants manage risk by treating the market like a hot potato. Everybody – producers and retailers alike – is short-term, so everybody is volatile.

These cumulative problems must be addressed if New England is going to lower its energy costs. ISO-New England is encouraging regulators and power providers to explore solutions, but each "fix" comes with its own set of issues. The network could:

1. develop new pipelines ("As far as we can see, there is little optimism for pipeline construction," says ISO's McConnell);
2. site new LNG terminals along the seacoast (difficult in an age of terrorism fears. "LNG scares the hell out of people," says Faryniarz.)
3. convert natural gas generators for dual-fuel electric production ("We've had some success in getting those conversions made," says McConnell. "But it raises the challenge of environmental permitting; oil plants are not as liberally licensed because of their emissions.")

Mainstream power planners now preach "diversity" – fossil fuel, hydro, and perhaps nuclear power sources – along with conservation and energy-efficiency programs. McConnell also sees room in that mix for renewables.

"We're also promoting wind, biomass, [and] solar," he says. "We need flexibility."

Others thinking about and planning for our energy future (including WEC's board and management) put a stronger emphasis on conservation and renewable energy, not content to relegate these sources to the category of supplementary energy options.

Vermont once had the highest average electricity rates in New England. Now it has the lowest. But with its long-term power contracts ending in less than a decade, that could change. It's a reason for policy makers to develop flexibility within our borders, rather than relying on a mired regional market to cure its own ills.

An original version of this article, by Co-op Currents *Editor Will Lindner, appeared in* The Market, *a magazine published by The New York Mercantile Exchange. Special thanks go to Stan Faryniarz and Michael Dworkin, quoted above, for their assistance.*

Think Now About Running For The Board

Deadlines Approaching For Candidates, Bylaw Changes

Washington Electric Cooperative has scheduled its 68th Annual Membership Meeting for Tuesday, May 22, 2007 (the location to be announced in an upcoming issue of *Co-op Currents*).

That means it's time to encourage Co-op members to think about running for a position on WEC's Board of Directors. Each year three Board seats expire (directors are elected to three-year terms). The incumbents who hold those seats can run for re-election, but the process is open to qualified challengers as well. Annual elections give the membership an opportunity to replace fully a third of the nine-member Board that oversees and makes policy decisions for one of the most important businesses in central Vermont – the customer-owned rural electric utility that provides power to some 10,000 homes, farms, schools and businesses in 41 different towns.

WEC directors serve at-large, rather than representing districts. When there are more candidates than open Board seats, the three candidates with the most votes win. Electric co-ops remain a bastion of democracy, and like all democracies Washington Electric functions best when members vote and participate.

Any Co-op member interested in running for the Board should contact Administrative Assistant Deborah Brown at Washington Electric, and she will send out a packet of information that includes the petition and other materials needed to become a candidate. The completed petitions, which must contain the signatures of at least 25 WEC members, are due this year on **Wednesday, March 14, 2007**. Debbie will provide guidance for complying with the requirements of a Board candidate.

Bylaw petitions due sooner

Washington Electric Cooperative is governed by a set of bylaws, which are the legally binding rules the Co-op lives by. The annual election process provides members an opportunity to amend those 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, too, by contacting Debbie Brown at the Co-op's office in East Montpelier.

The deadline for proposing bylaw amendments is **Saturday, February 10, 2007.** For this purpose, the signatures of at least 50 members on a petition are required. *Co-op Currents* will publish your amendment proposal just as it does when amendments are proposed by the Board of Directors. Approval or rejection of bylaw amendments is decided by a simple majority of votes. Ballots are cast by mail prior to the Annual Meeting, or at the meeting itself.

This beast, with tracks instead of wheels and a variety of mechanized outriggers, will come in handy for stringing wire in the refurbished right-of-way in Chelsea.