

WEC CO-OP CURRENTS

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

July 2010

HEAT WAVE

How High Temperatures Affect Your Co-op

If the Guinness Book of World Records keeps track of the expression “Hot enough for you?” the first week of July 2010 will go down in history. With daytime temperatures in the 80s (Fahrenheit) and 90sF, and evening temperatures in the 70sF and even the 80sF, Vermonters were sweltering – and the trend continued at the start of the following week as this issue of *Co-op Currents* was being completed.

“Sweltering” isn’t a word that electric-utility managers like to hear. It ends up costing their companies a lot of money for the purchase of high-priced supplemental energy to feed increased demand, plus additional capacity and reserves to guarantee an adequate supply of electricity. Consumers don’t care for the word either; most utilities cannot directly pass along their added power-purchase costs to their residential and small commercial customers, but people often use more power when it’s sweltering, and it shows up when their next bill arrives.

That’s why it’s good to be a mindful energy consumer on the hottest days of the year. WEC and all other electric utilities have predictable times of peak usage during the 24-hour day. It’s during those periods that the Co-op is most at risk of needing to supplement its power supply from the spot market –

power that could cost far more than the price WEC pays for its contracted power (and exceeds the revenues it receives from WEC members), and four or five times the cost of power that Washington Electric generates itself at the Coventry methane plant and the Wrightsville hydro station.

The chart titled “Wholesale Power Prices in Vermont” (page 5) covers the four-day period from July 5 to July 8, when the regional system was under the most stress. Spot-market prices exceeded 20.5 cents/kilowatt-hour (kWh), even reaching 23.1 cents/kWh. Compare that to WEC’s approximate costs of 5 cents to 6 cents/kWh for producing its own electricity. If WEC were forced to the market at such a time we would pay more than four times the cost of our own power – a good circumstance to avoid.

As a member-owner of the Co-op, it’s in your interest to help WEC keep its costs down. There’s also the principle of the thing: supplemental power from the spot market will come from less-efficient, more-polluting, fossil fuel-burning plants, and the environment likes it better when those plants are idle.

The chart titled “WEC Loads, July 2–July 7,” (also page 5) reveals when our peak-usage times occur. The chart tracks usage each day at 1 a.m., 7 a.m., 1 p.m., and 7

continued on page 5



They keep your lights on! (Air conditioners, too.) WEC’s Operations crew. Front row, from left: 3rd Class Lineworker Kyle Sands, Apprentice Lineworker Kyle Harper, Line Construction Foreman Tim Pudvah, Field Technician Steve Hart, Line Construction Foreman Bob Fair. Center row, from left: Stockkeeper Scott Martino, 1st Class Lineworker Kevin Lanphear, 2nd Class Lineworker Amos Turner, Apprentice Lineworker Mike Baril, Field Technician Mike Patterson, System Maintenance Technician George Mears, ROW Management Coordinator Mike Myers, 1st Class Lineworker Larry Gilbert (with cap), 2nd Class Lineworker Jason Smith, Transmission & Distribution Technician Ed Schunk, Mechanic Brad Nutbrown, 1st Class Lineworker Hans Pope-Howe. Back row, from left: Maintenance Foreman Rich Hallstrom, Equipment Operator Donnie Singleton, Apprentice Lineworker Jason Preston, 1st Class Lineworker Doug desGroseilliers. Missing: Safety & Environmental Coordinator Steve Anderson, Sr. Field Technician Brent Lilley, 1st Class Lineworkers Dennis Bador and Larry Brassard, and Field Technician Brian Wilkin.

A Mutual Effort

Field Tech Patterson Shares His Impressions with WEC Board

You could say that the feeling went both ways. WEC Field Technician Mike Patterson was impressed that Washington Electric Cooperative’s Board of Directors wanted to hear from him – about what his job entails, his evaluation of the Co-op’s performance as a

member-owned electric utility, and his interactions with members in his travels around WEC’s territory.

In fact, the Board makes it a practice to invite employees to its monthly meeting when the agenda permits, finding their impressions and

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Washington Electric Cooperative

East Montpelier, VT 05651

Inside

It’s an election year; keep energy in mind as you query candidates and make your choices. President’s Message, page 2.

A new Hydro Quebec contract is on the table, and WEC will participate. News on this and other future power-supply issues are in the Manager’s Report on page 3.

Joe Bongiovanni passes the torch.

The Co-op’s former general manager has retired from the NRECA board, and received a heartfelt Resolution of Appreciation from WEC’s Board of Directors. Page 8.

High cotton. Well, in Vermont it’s tall trees

instead, and a challenge to a rural power system. Page 1 story (‘A Mutual Effort’) continues on page 6.



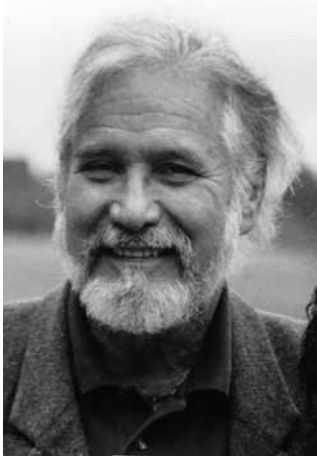
Charlie Hall, ‘The Barrel Man,’ sells recycled containers, makes electricity, and always has something new up his sleeve. Story on page 4.

President's Message

The Heat Is On, In Politics Too

By Barry Bernstein

As our members try to enjoy the beginning of summer, after a rainy June, we have been faced with a brutally hot and humid start of July. It doesn't really seem to help knowing that the rest of the Northeast and many parts of the country are experiencing near 100-degree days and drought.



and as individuals) needs to be a major part of this election cycle. If we ignore placing it in the forefront of discussion we do so at our own peril.

Home Generation and Net-Metering

On a recent visit to Montpelier I talked with people from two Co-op member-households, one relatively new to

WEC and the other on the Co-op lines for many years. They are very interested in what is going on at their Co-op. The newer member has just installed two solar photovoltaic electric panels and is net-metering. They will also be installing solar hot-water panels on their home.

They assumed we might not be happy with their reducing their electrical usage and I was able to say that their Co-op was supportive of our members taking advantage of net-metering options. As noted in our story in this issue about Charlie Hall, "The Barrel Man" of West Topsham, Washington Electric Co-op has the largest number of net-metering installations, per capita, among all

Vermont utilities. As most of our members know we have aggressively worked with our membership since the early 1990s to help people reduce their energy usage, thereby reducing their monthly electric bills.

The Importance of Retiring Old Refrigerators

I do want to point out a recent conversation I had with good friends who had just bought a new ENERGY STAR® refrigerator to replace their 25-year-old unit. The new refrigerator was six cubic feet larger, and yet will save them approximately 800 kWh/year, or \$130 annually, of electricity. However rather than take the old 'fridge off line to be environmentally recycled (Freon removed), they gave it to a friend to be used as a second refrigerator. We hope this is something members will avoid doing so that electrical demand can be reduced statewide as older, energy-inefficient appliances are taken out of service.


The Coming Rate Increase, and Power Supply

The other Co-op member I talked with asked me, what's new at the Co-op? My first response was that it appears we are headed for our first rate increase in a decade, that we will file our petition for this increase with the Public Service Board by early November, planning for it to go into effect in January 2011. At the end of July the WEC Board will meet at a day-long retreat to review our immediate

and long-term financial projections as we continue the process of determining how much of a rate increase we will need to ask for. The Board and management are committed to looking for any cost savings that will enable us to reduce the dollars we will need to meet our loan requirements. We are waiting to see the outcome of hearings that are now before the Vermont Public Service Board (PSB) which could cause us to have to ask for a larger increase.

I also mentioned two other issues that are addressed in this issue of *Co-op Currents* by our general manager, Avram Patt: Our renewal contract with Hydro Quebec (HQ) for 2016, and the status of the Sheffield wind project; we hope to purchase 10 percent of the net output of that 40-MW project once it goes on line.

Further, we have just filed with the PSB for a permit to rebuild our East Montpelier substation. Whether we can begin construction this August or will have to delay it until next spring will depend on when we get the PSB's approval.

In closing, I urge all of our membership to vote in this year's primary and to stay engaged in the process, meeting the candidates and talking to them about their positions on Vermont's energy future. Please feel free to contact me or the other Co-op Directors to talk about energy issues – or for that matter, any subjects you may want to address about your member-owned electric cooperative. 

Politics and Energy

News of the continued oil spill in the Gulf of Mexico, and Entergy's renewed PR campaign to try to reverse the Vermont Senate's vote to close Vermont Yankee on schedule in 2012 – at the same time that political candidates are stepping up their efforts in anticipation of early primary voting (starting July 12) – hopefully will heighten candidates' and voters' interest in addressing Vermont's energy future. The issue of energy (how we use it, conserve it, generate it, and the long-term environmental and economic-impact of choices we make as a state

Co-op Currents

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

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The Board of Directors' regularly scheduled meetings are on the last Wednesday of each month, in the evening. Members are welcome to attend. Members who wish to discuss a matter with the Board should contact the president through WEC's office. Meeting dates and times are subject to change. For information about times and/or agenda, or to receive a copy of the minutes of past meetings, contact Administrative Assistant Deborah Brown, 802-223-5245.

DaVia Replaces Bongiovanni

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got hold of a utility truck and drove to Port-Au-Prince. Working amidst gruesome death and destruction, they set about restoring the city's shattered electric system, with a bare minimum of poles, lines, and equipment. Re-powering the city was critical not only to restoring order, but to saving lives through medical interventions. Inside of a month these workers had two of the city's four power plants functioning again and 25 percent of the power had been restored.

"Myk's a phenomenal guy," said Bongiovanni. "I met him when I was working in Colombia. That's just an example of the kinds of things NRECA people are doing."

The national organization provides practical services to its 900-plus member co-ops, including WEC and VEC, related to employee retirement plans and a life insurance program. In terms of policy, Bongiovanni knows full well the philosophical differences that Vermont's co-ops, and co-ops in some other states, have with much of the


NRECA.

"Working as an environmentalist in the utility business presents a unique experience," he says. "You walk down a road that you realize not many people have walked down before."

But he believes the value of the national organization is that it gets everyone in the same room – and, to the extent that they all represent member-owned rural electric cooperatives, it puts them on the same side.

"Everybody's in there – people like me who [favor] erring on the side of the planet, and people who are making decisions strictly on the basis of economic considerations," he said. "It brings together all those elements. That doesn't mean it resolves all the issues, because sometimes the issues are bigger than the NRECA. But those people who oppose you are no longer nameless, faceless entities; they're real people making real decisions that you can understand and relate to."

"And the NRECA is a big hitter, quite effective at what it does."

It's now Michelle DaVia's turn to be effective as Vermont's representative to that national organization. 

Manager's Report

Wind and Water Securing WEC's Energy Supply For The Long Term

By Avram Patt

WEC to Participate in New Hydro Quebec Contract

As was reported prominently in newspapers and the media in March, Hydro Quebec and Vermont utilities have reached agreement on the basic terms for a major, 225-megawatt (MW) power-supply contract which is intended to begin at the conclusion of the current one. We want to let WEC members know that the Co-op intends to participate in this new supply agreement for a small share of the total.

This agreement was negotiated primarily by the state's two largest utilities (Central Vermont Public Service and Green Mountain Power Corp.). Although we were not involved in the negotiations, WEC had expressed an interest in having the option to take a small share of the contract once the terms were negotiated. We have been a participant in the present contract with Hydro Quebec, and it represents about 20 percent of our total supply. Although our Coventry landfill gas plant has more than replaced our Vermont Yankee nuclear contract, which expired in 2002, and we also look forward to receiving power from the First Wind project in Sheffield (see below), we do have an obligation to make sure that our supply needs are covered when the present Hydro Quebec contract ends in 2015. Therefore, once the basic terms of a new agreement were announced, we set to work to determine whether or not this would fit with our own future needs.

At its April 28th meeting, WEC's Board of Directors discussed a detailed analysis of the proposed contract that had been prepared by our power supply consultants at La Capra Associates. The Board then voted unanimously to authorize staff, consultants, and our legal counsel to proceed with developing the necessary agreements and seeking regulatory approval based on the analysis that had been provided.

Although the exact pricing terms of this agreement remain confidential, we can share the following information, with more to follow in the coming months:

- This is a very long-term and reliable source of power. For WEC, it would run from 2016 to 2038.
- The pricing is competitive, and future prices will be indexed to the market. There are protections from dramatic spikes and fluctuations in pricing, assuring relatively stable costs.
- The contract would offer the Co-op long-term security. We would be able



to resell at cost any power we do not need.

The regulatory process at the Public Service Board (PSB) will be getting underway soon, and WEC will participate along with other utilities. The contract with Hydro Quebec and agreements covering WEC's relationship with certain other Vermont utilities are

being developed and will be finalized soon.

WEC's power-supply situation is somewhat different from other utilities' in that we presently have enough long-term supply secured to meet our needs. In looking ahead to the uncertainties that the future may bring, WEC's management and Board determined that committing to a small piece of the proposed new Hydro Quebec contract is in our best interests because it offers further stability and security at competitive prices.

WEC members will be getting more information about the Hydro Quebec contract as the regulatory process gets underway, and it will no doubt receive further attention in news reports. We wanted to let Co-op members know now that your elected Board has chosen to participate.

An Update on Wind Energy in Vermont

A few years ago, we were devoting a lot of space in *Co-op Currents* to the subject of wind energy. In 2005, we stuck our necks out early in support of the First Wind project in Sheffield, which has since been approved for construction by the PSB. Representing the Co-op, I attended community meetings in the Sheffield area, penned op-ed columns for newspapers, and responded to criticism of WEC from wind opponents.

Wind energy in Vermont has been in the news again lately, so this is a good time to remind members why WEC has supported responsible large-scale wind development, whether it is the project WEC is involved in or other projects. And a quick update on the status of the Sheffield project is in order, too.

While a potential project in Rutland County is on hold due to local opposition, two other projects are moving forward. In June, Georgia Mountain Community Wind, a relatively small project in Milton and Georgia, received PSB approval. And Green Mountain Power has begun the regulatory process for developing a large wind farm at Lowell Mountain. The Lowell Mountain project has received much attention because GMP and its

partner, Vermont Electric Co-op (which will purchase some of the project's output), put a lot of effort into getting local support for the project.

There has been opposition to the Georgia Mountain and Lowell Mountain projects, as well.

Keeping track of these recent developments has provided some *déjà vu* moments for me, having been in the middle of the debates and public discussion about the Sheffield project for about two years. At a Special Town Meeting, a majority of Sheffield voters voiced their support for the project. (Voters in neighboring Sutton were opposed.) The project was discussed at our annual meetings and at our fall community meetings, and we heard from members and others with differing opinions on the subject.

The August 2006 issue of *Co-op Currents* (available on WEC's website) contains some personal accounts written by eight of our nine board members at the time, who on their own initiatives had visited large wind farms in the Northeast, in Tennessee, and as far away as New Zealand, to see and hear for themselves what big wind turbines look and sound like, and how local residents and communities felt about them. It's worth rereading what those board members learned from their visits, and it also shows how serious our own decision-making process was, as a democratically governed utility.

There is no getting around the fact that commercial-scale wind farms have a big impact on the landscape in those few places where development is possible. In Vermont, they must be up on the ridgeline to capture sufficient wind. Like any large project, the construction has an environmental impact, as does the ongoing operation. The towers and turbines are very large, and visible.

As I've read recent statements and letters to the editor from wind opponents, they have seemed familiar. When First Wind was first proposing and then seeking PSB approval for the Sheffield project, a number of surveys and the Department of Public Service-sponsored "public engagement process" all showed that a strong majority of Vermonters favored responsible development of large-scale wind in Vermont; that they had some understanding of the tradeoffs involved; and that they would still be in favor if the project was going to be visible from their own backyards.

My sense is that since that time, most Vermonters have gained further understanding of the energy choices we face, and the tradeoffs. The local support for the Lowell Mountain project

shows that Vermonters are able to weigh choices and support major wind projects when they are presented with facts, and when their concerns are respected and acknowledged.

A few claims about wind energy continue to be made by opponents. As a utility manager, one claim that is frustrating to see resurface is that wind energy – because wind is intermittent and does not blow enough to generate power at full capacity all of the time, and sometimes doesn't generate at all – somehow does not replace electricity generated by fossil fuels or other sources. Opponents note the need for "spinning reserves." These are usually fossil-fueled generators that are already running and whose output can be increased very quickly if a major power plant shuts down or if there is some other sudden change.

Well, these spinning reserves have *always* been needed for grid reliability, whether there is wind generation or not. Simply put, when kilowatt-hours are generated by wind turbines, less kilowatt-hours of electricity need to come from other sources.

I think most WEC members support wind energy, with the understanding that it can't be built just anywhere, and that developers – whether a wind-development company like First Wind or a utility like GMP – will be held to a very high standard with regard to the environment, benefit to Vermonters, and relationship to Vermont's communities.

Sheffield Status Report

First Wind's project was approved by the PSB in August 2007. Opponents appealed the decision to the Vermont Supreme Court. The Supreme Court upheld the PSB's decision in February 2009 and found no reason to overturn it. Project opponents also filed an appeal of a permit the Agency of Natural Resources issued to First Wind dealing with storm water runoff during the construction period. This appeal has been heard in environmental court and we are awaiting the judge's ruling, which could come at any time.

WEC will be purchasing 10 percent of the project's output, and the other two purchasers (Vermont Electric Co-op and Burlington Electric Department) are also consumer-owned utilities.

It has been three years since the Public Service Board issued a Certificate of Public Good for this project, and we hope that after all this, it will go on line in the near future.

Stay in Touch

As always, please contact me with questions or concerns about anything having to do with your Co-op. (My contact information is on page 2.)

The Barrel Man Of West Topsham

A WEC Net-Metering Success Story

Charlie Hall's home and business on an open hilltop off Route 25 in West Topsham at first just seems eccentric. It's a nice-looking house, but a little oddly shaped. Small statues are scattered around the yard, and a sign in one place designates it as a free picture-taking area. Behind the house is a tall row of blueberry bushes with a string of tin pie plates – round, square, and rectangular – that clatter in the breeze (keeping the bears away, Charlie says). In the high grass on the slope beyond the bushes are three ground-mounted solar arrays, the largest one perched atop a pole at a crazy angle.

But the main thing you see, because there's no missing him, is the Barrel Man – a figure some 15 feet tall, fashioned mostly out of plastic barrels of diverse sizes and shapes, with a face painted on one barrel and cylindrical arms and legs. He looks something like an overgrown version of Willy Wirehand, the cartoon character used for many years as a mascot by the electric cooperative utility industry. Odder, still, is that the Barrel Man lights up at night – drawing power stored from a 1970s-vintage solar unit on the hill behind him (which is composed of round cells rather than square).

It's safe to say there's no other place like this in Vermont. And what you come to realize is that there is a purpose to each and every oddity, and every system, on Charlie's painstakingly designed, meticulously interconnected hilltop haven. The ultimate statement of that purpose is the electric bill Charlie receives from Washington Electric Cooperative each month. His May, 2010, bill came to exactly \$9.24, which is the basic Customer Charge that WEC bills each member. His kilowatt-hours from the Co-op totaled 0. In fact, he earned credits in May for 22 kWh – power that his home net-metering system had generated in excess of what he used, and which he fed back into the electrical grid.

A bill for 0 (zero) kilowatt-hours is not unusual for 82-year-old Charlie Hall; he's been generating his own power for decades, and is a Believer with a capital B. "The future belongs to those who prepare for it," he told Carol Levin, of the Solar Association of Vermont, for an article in the organization's newsletter in 1984, and he seeks to inspire others who believe self-sufficiency is gradually becoming a key to survival. He calls his technological nest in West Topsham his "Homestead Research Center," and in that spirit he never leaves well enough alone, never "sets it and forgets it"; he's always changing, refining, thinking of new ways to maximize value from the sun's rays that fall so generously on his well-exposed, south-facing hillside.

Hoping to set an example, he's not shy about trumpeting his success.



Suspended from a pole, the Barrel Man greets visitors and customers amidst the gardens, wares, and solar arrays at Charlie Hall's place (left). Below, some of Charlie's barrels and containers for every use under the sun.



"Charlie is so proud of his electric bills that he often posts them at the West Topsham Post Office," says WEC Director (and Treasurer) Don Douglas, who is a rural mail carrier and delivers Charlie Hall's mail.

Charlie's dedication to independent power generation is not unique in Co-op Country. Washington Electric has 56 members involved with net-metering – the highest percentage of net-metering applications of any utility in Vermont. Charlie enrolled in net-metering in 2008, more than 25 years after beginning home generation (using small wind turbines at first; he turned to solar power systems a little later). Under net-metering people can, in effect, run their electric meters backward, contributing their home-generated power to the grid. They are not paid for it in cash, but receive credits on their bills for home-brewed kilowatt-hours, which they must use within a year's time or lose them.

Seeing the results – electric bills at the bare minimum – sheds some light on what Charlie means when he says gestures around his house and grounds and says, "Everything you see here has been thought out." The seeming oddities all have a purpose.

To begin with, there's the shape of

the house itself, which Charlie designed over a period of years in the 1970s, during which the former television sales-and-service entrepreneur (he owned a business off Depot Square in Barre) was reinventing himself as an alternative energy pioneer. Charlie – who grew up on this hilltop property that his parents bought in 1926, two years before he was born – went back to school in his mid-40s and earned an Associate's Degree in alternative energy from Community College of Vermont. He continued his studies though Goddard College's adult-degree program, and in 1976 helped form the Vermont Solar Research Group with other Goddard students. His laboratory, you might say, was the house he designed for himself and his family and completed in 1980.

Which explains the trapezoidal shape. It's not jarringly odd; in fact, it's an attractive design. The front, south-facing wall, is less wide than the rear wall, which allows the two side walls to angle in and capture more sunlight – the southeastern wall in the morning, and the southwestern wall in the evening. Both walls are adorned with solar panels. As Charlie puts it, with this configuration his house is "wrapped in

sunlight."

The front wall does not have solar panels below the roofline but has large windows for passive solar gain into the living room. And the real trick is the sloping rooftop, which features a large window area exposed to the sky. Inside the house, that window is covered by louvers (the living room has a cathedral ceiling), which can be cranked open from the floor. The light then pours upon a series of 10 transparent 60-gallon columns of colored water, mounted on a balcony at the second-story level. By day, the columns cool the house, if needed, and by night their stored thermal energy emanates warmth. The pastel colors provide soothing lines of light visible (because of the home's interior design) from virtually everywhere in the house.

And there's another trick to this front wall. The yard slopes toward a grassy swale, which Charlie says fills up with snow in the wintertime. The sun gleaming off the snow provides additional light for his solar systems to capture.

He uses a similar trick out back. In the grassy area upslope from the house, where the three ground-mounted solar arrays stick out of the tall grass, one of those arrays is hinged at the top so it can be set at various angles – including, if Charlie judges it most advantageous, toward the house below to capture the reflection of sun off his metal roof. (The hinges also allow for this large panel to be dropped to a vertical position so he can easily clear off the snow and get better use of it during the winter.)

Charlie seems to leave no stone unturned in his quest to capture and store energy. "God gave us the sun in the sky, and we should be using it," he declares. "It's all that we need."

He does have electric motors – plenty of them, in fact: two deepfreezes



Charlie Hall, in front of his trapezoidal, solar-powered home.

(encased in two inches of foam insulation, of course), a refrigerator, a washer and dryer, and a water pump. He therefore also has an EZ Energy Saver, a device, he explains, that captures the waste energy of these motors and channels it to a collection of six 24-volt batteries kept in an old freezer outside.

There's a method to all this.

"All the workhorse energy," says Charlie, referring to the energy that powers the house, "is from the solar, net-metering system. All my entertainment is from the battery system."

And he has lots of entertainment. Though he champions conservation – his house is framed not by two-by-fours, but two-by-tens, to provide room for super-insulation – he proudly displays his 60-inch flat-screen TV, and a smaller (24-inch) flat-screen TV in the kitchen. (Remember his background in television sales and service.) Plus, he's a ham radio operator. There's no dearth of entertainment at Charlie Hall's home, but one wonders if he sits still long enough to use it.

Prowling around the place, you never know what's going to pop up next. In a large and airy storage hut behind the house Rod Stewart is crooning:

"You're in my heart, you're in my soul

You'll be my breath should I grow old..."

It's free music, coming from a small radio powered by a palm-sized solar collector, the little system held together by rubber bands. Put your hand in front of the solar device and the music stops.

And in the bathroom a humble 12-watt CFL (compact fluorescent light) hangs in a fixture at the corner where two long mirrors meet over the sink and counter. Because of the mirrors' reflections, the single light source becomes four light sources, and (with pale pink and blue light streaming in overhead from the water columns) it's basically all you need. If some task requires more light, the ceiling lighting can be either fluorescent or LED.

Charlie's systems don't stop with energy. He keeps a raised-bed salad garden just off of his shaded rear deck area – and, characteristically, there's a method involved. The garden is mounted at waist level and divided into sections about two feet square; it's a series of small patches, planted and replanted intermittently, from which Charlie can harvest his lunchtime salad and survey the progress of next week's greens and herbs, and the week's after that.

Roll out the barrels

So what of that gigantic, Willy Wirehand-esque Barrel Man?

The secret – though it's no secret, really – is that Charlie Hall himself is

"The Barrel Man." Selling recycled barrels and containers of all types is his business, and he keeps a large inventory. He boasts that all are "food grade" – they haven't held petroleum or chemicals so they're safe for any purpose. Customers use them for floats in their ponds, for storing grains and liquids and dog food, for holding homemade cider. He sells rain barrels, barrels filled with kindling for campers. He has invented a composting barrel, mounted on its side on a plywood stand, with a wheel attached to the rear for turning it and short sections of two-by-four spaced along the interior wall that mix the compost as the barrel is rotated.

His barrels range in size and price. And in addition to barrels he sells other containers – plastic pails and tubs, large "tote tanks" in metal frames that can be used in sugaring or, perhaps, a water supply for a camp. (Better have a truck with you to purchase one of these.) He's even got burlap bags.

He retrieves these wares from a broad network of suppliers. "These 55-gallon barrels here were used for cane syrup," he says, motioning toward a set of plastic barrels in his shed. "I got them from a fellow in Florida last fall. Everything I sell is recycled," he insists.

The Barrel Man is an emissary for recycling, conservation, and

self-sufficiency. His self-designed home is proof that conservation does not have to mean Spartan living. (Some tasty-looking baked beans were simmering in a crock pot powered by solar electricity).

It's true that his location – an exposed hill, with a sweeping view to the south and west – provides Charlie Hall advantages some people don't have. "Yesterday I only generated nine kWh, because it was a cloudy, rainy day," he said one morning in early July. "But you can almost always generate something. The only weather where you can't generate any solar power is thick, soupy fog, and I don't see that very often."

As for self-sufficiency, Charlie emphasizes that everything he has built and accomplished at his solar home has been done without a penny of government funding.

"People need to do it on their own," he insists, though he's glad to be a resource for local folks interested in learning from his experience.

Whether your interest is solar or circular (the vast array of barrels and containers he sells) you can visit The Barrel Man by calling 802-439-5519 and making an appointment. Expect to be entertained, amused, and amazed.



Heat Wave

continued from page 1

p.m. Intuitively, people might assume that WEC's peaks occur at the hottest times of the day, but that's not the case. The first spike happens at around at 7 a.m., with an even more pronounced spike in the evening at roughly 7 p.m. (the evening spike actually lasts from around 6 p.m. to 10 p.m.) The morning spike comes when people are starting their day – using their radios, water heaters, toasters, coffee makers, kitchen and bathroom lights, electric ranges, etc. They depart for work and usage drops. In the evening hours, when families return home, appliances, fans, air conditioners, lights and TVs are going gangbusters. And it shows. The spikes in WEC's usage of 13.2 to 13.5 megawatts (MW) on July 5, 6, and 7 exceeded a more normal summer-evening peak for Washington Electric of 11-12 MW, an increase of almost

17 percent.

A partial remedy for this situation is to avoid using non-essential appliances until later in the evening, or perhaps during late morning or mid-day. If you have a washing machine or dishwasher, try not to run them when everything else is being used. Midnight is a great time for these appliances to be busy. We all have a stake in modifying our behavior in these ways.

WEC's advantages

Your Co-op is unusual among Vermont and New England electric utilities, and in the hot weather of early July that worked in our favor.

For one thing, WEC is still a winter-peaking utility. Most other utilities in New England, including some in Vermont, are now summer-peaking: their highest electric-usage peaks of the year occur in hot weather, mostly due to air conditioning. Residential air conditioning is typically not the biggest

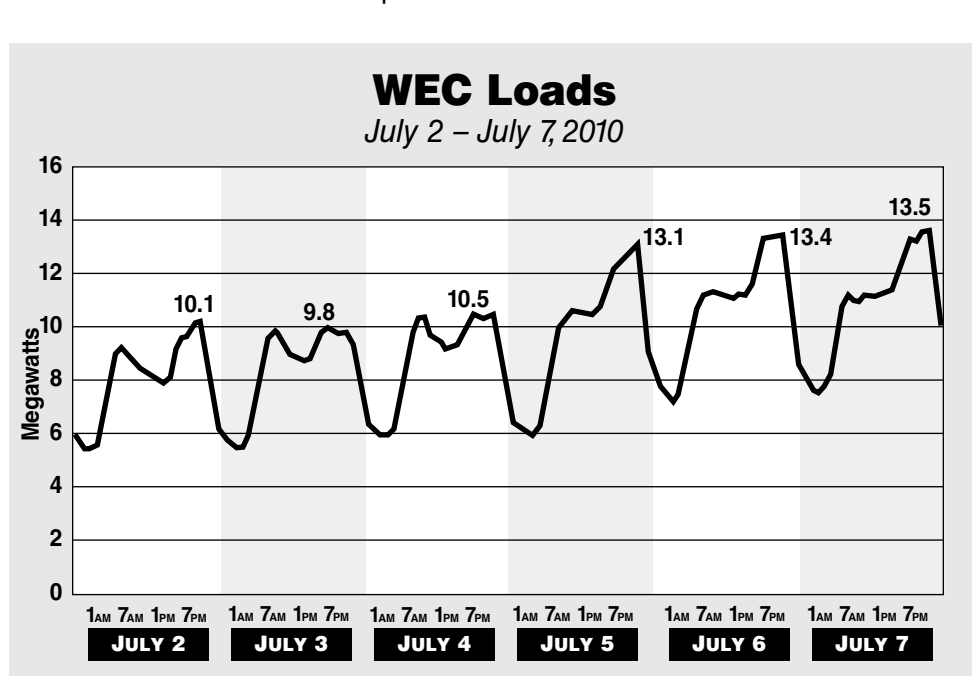
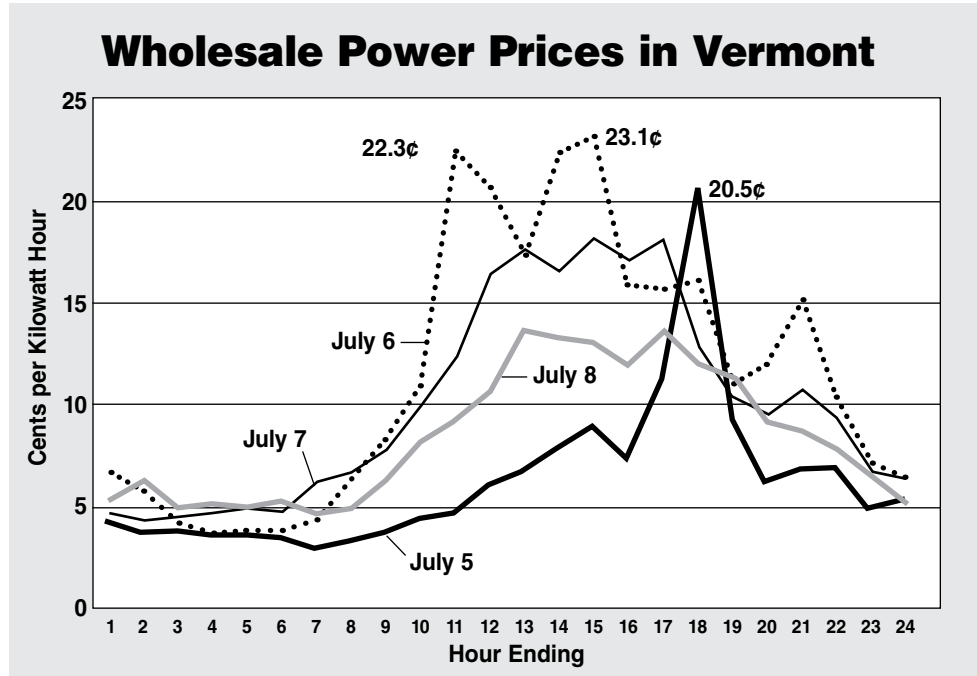
culprit; the energy used in cooling large commercial spaces, such as shopping malls and office buildings, is the principal factor in driving the regional summer peak. WEC is about 98-percent residential, with almost no large-space commercial accounts; as a result, our annual peak (around 16-plus MW) still occurs sometime during a winter cold snap.

WEC is also different in that the Co-op owns generation facilities that supply about three-quarters of its members' electricity on average over the year. That, in combination with contracted power from Hydro Quebec and other sources, means that Washington Electric frequently has more power than it needs. WEC can sell its excess power back into the New England grid by the hour, whenever it has excess.

Therefore we are comparatively well-positioned during times like the early-July heat wave. The best scenario is when we can sell our excess power

at the going rate and make money, which actually occurs much of the time. However, despite our advantages (owning two generation sources, and no large commercial spaces to cool), there were times during the recent heat wave that the demand for power by WEC members required the Co-op to go to the spot market for higher-cost extra power. Fortunately, our power consultant, La Capra Associates of Boston, Massachusetts, and Williston, Vermont, informs us that those periods were brief, and did not occur when prices were at their highest during those sweltering days.

Utility power planners have to keep their eye on usage and costs every hour of the day. As consumers, we aren't required to do that – but when it's sweltering, and when it's frigid, we do need to be conscious that everything we do in terms of power usage affects those around us. We should use our power wisely.



A Mutual Effort

continued from page 1

knowledge invaluable in crafting policy. When Mike Patterson attended the Board meeting around the beginning of May, WEC President Barry Bernstein was impressed by what he had to say.

“Mike is a guy who has worked at the Co-op for a long time [since 1992],” Bernstein said later, “and he’s seen a lot of changes in our service territory, particularly in the landscape. He also had a lot to say about the Co-op being an organization that puts its members first, that does its best to really serve the members. That hit home to me, because he is one of the people who are out there doing it; it’s an attitude he takes with him in his work every day.”

For his part, Patterson credits the Board of Directors for setting an example about the importance of member service. Mike is a native Vermonter, somewhat quiet and serious, and fully at home in the outdoors. He doesn’t gush and carry on. These are qualities that serve him well in his dealings with WEC members. His job includes designing changes and additions to Washington Electric’s right-of-way to achieve steady improvements to the 71-year-old electric-distribution system – and that quite often means asking members to consider changes in the system’s pathway across their land. These aren’t always the easiest conversations to have, but a few moments talking to Patterson is all you need to realize you’re dealing with a straight shooter.

His observations about the Co-op carry the same weight.

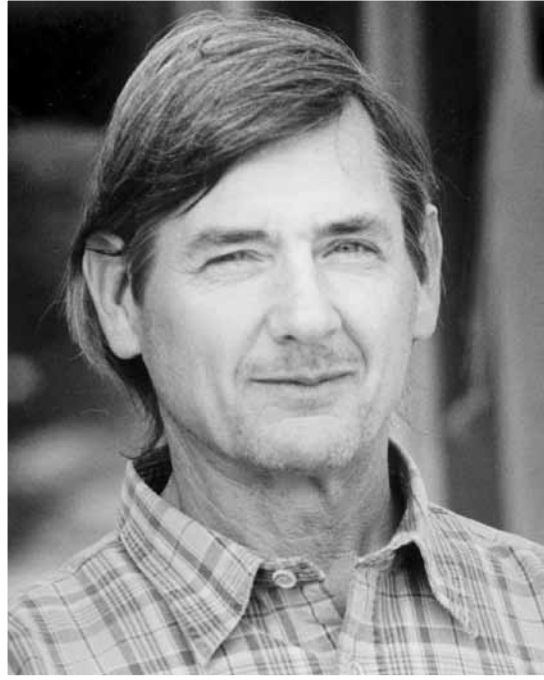
“One of the highlights of the Co-op and something that makes it a great place to work is the importance it places on the membership and delivering quality service,” he says.

“I’ve enjoyed that philosophy, and I think the Board drives it somewhat for the rest of us. It’s a contrast with the number of places I’ve worked where that’s not been in the forefront.”

WEC’s East Montpelier headquarters isn’t such a large place. Patterson shares workspace in the Engineering Department with field technicians Brent Lilley, Brian Wilkin and Steve Hart, Right-of-Way Coordinator Mike Myers, and Transmission & Distribution Technician Ed Schunk. Their den is just across a small hallway behind the large front room where the Member Services personnel are stationed. The close quarters gives Patterson a sense of how his fellow employees go about their work.

“This Co-op will bend over backward to serve people,” he says. “The Billing Department is the same way. If somebody calls with a high-bill complaint, or they’re concerned about their meter base [functioning accurately] or about stray voltage, you don’t talk to

As Vermont has become more heavily forested Washington Electric’s right-of-way has become a narrow corridor through the woods in many places, such as this location in Corinth. One response is relocation nearer to the roadways. Below, Utility Field Technician Mike Patterson, one of the team of WEC engineers who design and re-design the system.



an automated phone system. You get somebody on the line right away. If it means sending somebody out to take a look at it first-hand, they’ll go out the same day or shortly thereafter.”

For an electric utility, the bottom line for customer service is providing reliable, consistent electric power. But it’s not the only measure.

“Here, it’s more than that,” says Patterson. “We have phone calls every single day: someone asking us about a low wire, someone painting their house and they’re concerned about a service wire [connecting their home to the power pole and transformer] and we’ll go out to put an insulated cover

over it to make sure they know they’re safe – small things that we do without charge.

“I think people appreciate that,” Patterson says, “that someone will show up at your residence and take genuine concern for what you’re worried about and try to remedy it, without charging for every nickel-and-dime

thing they do. I’m glad to be involved with that.”

It’s not always easy to put an individual member’s wishes first; in fact, it’s not always possible.

“The part I’m involved in is survey and rehabilitation [improving sections of the electric system]. That includes making agreements with members and building power line that makes sense for all of us. It’s not like, ‘We’ve got a right-of-way across your land and this is the way it is.’ I’ve never heard that kind of hardcore approach from anyone at the Co-op.”

There are times, Patterson says, when circumstances dictate that they stick to the plan they have designed even if a member is not pleased with



it, when changing the route across that property could create problems down the line. Safety and reliable service for all dictates that decisions be made with those priorities in mind.

Nor is it only property owners the Co-op has to consider. For relocation projects, and sometimes for line extensions serving new members, the Co-op must obtain a permit from the town. Some projects also entail environmental permits from the state (a recent rehabilitation project on land adjacent to the Dix Reservoir, Barre City’s drinking water supply, is an example). When so many players are involved the Co-op’s options can be limited.

“Mostly when we’re building a power line we get a power-line permit from the town,” Patterson says. He adds, “One town wanted to run it by the tree warden.”

Which raises the question: Exactly what do tree wardens do?

“Well, I happen to be one,” says Mike, who serves that duty in Middlesex. “They’re responsible for the shade trees along the road – the roadside maples, the overstory, the canopy. I’ve been called out on one assignment.”

Vermont’s changing landscape

Discussion of the canopy leads to an observation that made a strong impression on Board President Bernstein: what Patterson describes as the “ever-changing landscape” that the Co-op’s operations people work in. Of

course, that’s not just a Co-op story; it’s a Vermont story.

“If you go back in time there was more open land than we have today,” says Patterson. “Fields progressed from being grazed by the family cow, to growing into low brush, to becoming forests with trees that tower above our power lines.”

With the change in landscape came changes in people’s expectations. In the 21st century WEC members expect reliable electric power. They also love Vermont’s lush, forested landscape and expect it to be safeguarded and preserved. These expectations can conflict with each other – and it is the fine line, responding to both, that the Co-op seeks to capture. Right-of-way constructed decades ago in farm fields and meadows, which became enveloped by trees as those open spaces were overgrown, is a double-whammy for Washington Electric, the most rural electric utility in Vermont: they are the hardest areas to protect against outages caused by trees, and the hardest places for repair crews to reach when such outages occur.

“We used to have power lines you could see for a mile across open spaces; now you’ve got a narrow corridor through the wilderness. Mike Myers’ job,” says Patterson, referring to WEC’s Right-of-Way Coordinator, a professional forester, “is almost like a thumb in a dike.”

Myers conducts visual surveys of these areas, looking for “danger trees” that could threaten the power lines in

a storm; but those corridors may amount to hundreds of linear miles, much of it off road. And, Patterson notes, "You can't find every danger tree; and when you do an assessment it might not be a danger tree, but they grow toward the open space and the sunlight, and they start leaning, and then a wind comes along and down it goes, here comes the outage, and here comes the disappointment."

To the extent that a solution exists,

"One of the highlights of the Co-op is the importance it places on the membership and delivering quality service. I've enjoyed that philosophy, and I think the Board drives it somewhat for the rest of us."

— Mike Patterson

landscape we all live and work in. Yet at the same time, we've got to build and maintain power line."

There is a compromise, and

it consists of moving power lines, where possible, closer to the roads. But who wants to see power poles and wire strung along Vermont's beautiful rural roadways?

"What we hear," says Patterson, "is 'save that canopy,' which we all enjoy – and I'm one of those people who love this

Patterson and the other field technicians employ it where they can.


"In sensitive areas we'll build power line 50 feet back from the road, with a buffer of trees in front of them," he says. "That actually makes an interesting statement about the Co-op, that we're willing to do that and that we care about the aesthetics. It makes the Co-op a better company overall."

Focus on members' needs

This is the kind of insight Board members glean from discussions with WEC staff, whatever department they come from. The directors can't know every detail of the Co-op's operations, but interviews with staff let them know

how the policies they set are translated into action by employees.


For they're all working toward the same goals.

"The entire Co-op – including the staff, the members, and the elected Board members – is a family," says President Bernstein. "WEC is built on the spirit and the history of people who worked very hard to bring electricity to their communities, and we feel it's important for Board members and employees to understand how each of us contributes. It helps us all keep focused on our members' needs and on working cooperatively together. Mike, and each person who comes to a meeting, helps us in that effort." 

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Vermont Changes Its National Representative

DaVia, of Westford, Replaces Bongiovanni On NRECA Board

Whatever happened to Joe Bongiovanni? Excellent question. The popular former Washington Electric general manager, who served in that position from 1990 to 1995 and then on an interim basis in 1996, until recently remained an important part of the rural electric cooperative movement, providing a voice for Vermonters through his service on the Board of Directors of the National Rural Electric Cooperative Association (NRECA). Earlier this year Joe left that post, replaced by Michelle DaVia of Westford. In gratitude for his contributions Washington Electric's Board of Directors passed a Resolution of Appreciation for Bongiovanni's distinguished service and accomplishments. (See the Resolution on this page.)

After Joe left his post as WEC's general manager he worked for the NRECA in its international program, serving primarily in Colombia. This was followed by 10 years as Vermont's representative on the national board, representing both WEC and Vermont Electric Cooperative (VEC). It's a large board, with representatives from almost every state.

In February Bongiovanni retired from that position and DaVia, a member of the VEC board, took his place. The transition occurred with Bongiovanni's blessing. Several years ago he and his wife, Helen, moved from Vermont to Harborton, Virginia, on the Chesapeake Bay side of the Delmarva Peninsula. (They remain part-time residents of Marshfield and are WEC members.)

"When I moved here and asked to continue serving on the NRECA board I told the Vermont co-ops, 'It's at your pleasure, and I will step down if someone in Vermont wants to become the representative,'" he said recently, speaking from his home in Virginia.

In 2008, that happened. Members of VEC's board concluded that it would be more advantageous to Vermont if its national representative were someone living in the state. They made their wishes known to WEC's board, and the co-ops thanked Bongiovanni and told him the two-year term he was serving would be his last. DaVia was elected his successor in December 2009.

WEC President Barry Bernstein says that Bongiovanni brought unique gifts to his NRECA service.

"Joe has always been able to talk to people from a variety of backgrounds and viewpoints," said Bernstein.

"They've got people at the NRECA that are 100-percent behind coal,

representatives of co-ops that have very low-cost power, and it's because they have a plentiful supply of coal. Still, Joe has been able to talk about things like acid rain, energy efficiency, the future of fossil fuels, and making change. He's been able to get people at least to listen to those ideas. When he left the NRECA board, people who strongly disagreed with him said they were really going to miss the dialogue."

Davia steps in

"Michelle is a good choice to replace Joe," said WEC General Manager Avram Patt. "The NRECA is a valuable organization that lets our voices be heard nationally. Michelle is someone who doesn't go along to go along; she will be a voice for things that are important to Vermont co-ops."

DaVia was seated as Vermont's representative at an NRECA meeting in mid-February in

Atlanta, Georgia.

Professionally, DaVia is a geologist and freelance energy consultant. She won election to VEC's board of directors in 2005, following a successful challenge to an incumbent director. DaVia vigorously campaigned for the seat, knocking, she estimates, on 2,000 VEC members' doors for nine months before the election. She has since become the board's secretary, and chair of its bylaws and policy committee. She ascended to the NRECA board well versed in many of the issues before it.

"My interest is that we start to truly push for development and political support toward renewable energy, but renewable energy that is low-cost," she said. "All renewables are not the same. If wind is sited in the wrong place it can be incredibly expensive. Keeping electric bills affordable is important to me."

Proposed cap-and-trade legislation – which would establish limits on carbon outputs but allow producers to trade credits to exceed those limits – is an important climate-change-related issue in Washington. The NRECA opposes cap-and-trade largely because of its reluctance for the utility sector to take on major costs related to climate change. DaVia also thinks cap-and-trade would be a mistake, but for other reasons.

"Carbon credits would become a



Michelle DaVia

commodity, which would have brokers who would become very powerful," she said. "There would be a lot of money involved and a self-perpetuating element to that. I'm afraid cap-and-trade would end up being not a good thing."

A flat carbon tax, she believes, would be preferable.

DaVia will urge the NRECA to look for solutions to energy

problems (supply, source, and cost) in technology. As a scientist, she said, she has "always enjoyed learning and getting input from other people." She hopes the same will apply to her fellow NRECA board members, but concedes that "if changing the direction of a utility board is like turning the Titanic in a pond, making changes on the national board will be like turning the Titanic in a bathtub.

"But I think if you provide information people at least start listening," said DaVia, "and that's all I can expect at this point."

Haiti and elsewhere

As for Joe Bongiovanni, he looks back on his service on the NRECA board with gratitude and satisfaction.

"I was honored to be able to serve as Vermont's director for 10 years," he said from Virginia. "It was a fantastic and unique experience for me, to be part of the tremendous association that the NRECA is."

Bongiovanni was particularly impressed by the organization's international efforts, which he served not only as a staff member after leaving WEC, but also on the board's International Committee. "It's part of the NRECA program that people don't know about," said Bongiovanni, "some of the great stuff they do for countries that don't have any really effective electricity system."

A favorite story of his concerns Myk Manon, an NRECA power specialist involved in the international program. Immediately following the 7.0-magnitude earthquake that struck Haiti on January 16, Myk (pronounced "Mike") recruited two other engineers and flew to the Dominican Republic. There they

continued on page 2

Resolution Of Appreciation And Thanks To Joe Bongiovanni

Whereas, Joe Bongiovanni has served as Vermont's representative on the Board of Directors of the National Rural Electric Cooperative Association (NRECA) for ten years, from 2000 through 2010; and

Whereas, Joe has actively participated in the governance and policy development of NRECA during a time of great change and turbulence for the energy industry and for electric cooperatives; and

Whereas, Joe has been a strong and tireless advocate at NRECA for investment in energy efficiency and in alternative, cleaner energy resources; and

Whereas, Joe's efforts, along with others, have helped the electric co-op movement and NRECA to embrace energy efficiency as well as to begin to move towards greater investment in renewable resources; and

Whereas, Joe has been diligent in keeping both of Vermont's electric cooperatives informed of and involved in the activities of NRECA; and

Whereas, Joe has represented the interests of our members, our communities and all of Vermont at the national level; and

Whereas, Joe's participation on the NRECA Board of Directors ended in February 2010 at the conclusion of his most recent term;

Now be it resolved that the Board of Directors of Washington Electric Cooperative expresses its great appreciation and heartfelt thanks to Joe Bongiovanni for his service on the Board of Directors of the National Rural Electric Cooperative Association.

Adopted March 3, 2010

Marion Milne
Secretary

Barry Bernstein
President

