Vol. IX
No. 8

MECEP choices
Maine Center for Economic Policy
IDEAS FOR SHARED PROSPERITY

October 17, 2008

MEGAWATTS FROM MOUNTAIN TOPS: WHAT'S IN IT FOR MAINE?

by Peter Mills

Part 1: Power to Rely On

While Maine has a host of stubborn challenges - high taxes, costly health care and cold weather, to name a few - there is one issue where policy makers can make a large difference in the months ahead: how to reduce the exorbitant price of electric power. In this two part series we look at how Maine's policies on electric power, taxation and economic development presently intersect and how those policies must change to benefit from wind.

Let's begin by looking at the national setting.

CHAOS, BUTTERFLIES & BLACKOUTS

Fans of "chaos" theory are fond of postulating that Hurricane Katrina might well have originated with an event so trivial as the gentle swirling of a butterfly wing on the west coast of Africa.

In a similar vein, they might suggest that our nation's recent policy turmoils in electric power began with the touching of a high tension line to a too tall tree in southern Ohio at 2:02 PM on August 14, 2003. For that was at least one of many precipitating events that cascaded into the worst blackout in North American history.

By tbe end of that hot summer afternoon, 508 generators had tripped off line plunging into darkness 50 million people – 1/3 the population of Canada and 1/7 of the United States. In New York City, 600 subway and commuter rail cars were stranded between stations; at least as many elevators stopped between floors.

In much of the northeast, highway gridlock followed the loss of traffic lights; airports shut down for failure of passenger screening and electronic ticket systems. With filling stations unable to pump, cars ran out of gas. Public water supplies became contaminated. As night ensued, stranded bankers bedded down on Wall Street to view the Milky Way.

Since 1990, the cost of electricity in New England has risen 55% as compared with 35% for the rest of the nation.

Although power for most people was restored within a day or two, the blackout caused a nearly incalculable loss of human productivity.

As tempting as it might be to seize on the butterfly or the tree limb, the true cause in either instance is what chaos theorists refer to as a "sensitive dependence on initial conditions." In the case of electric power, this was the fragility of our electric grid.

In the same fashion that our nation has failed in recent decades to maintain its highways, its bridges, its rail lines, its flood levees and its water and sewer systems, it has also failed to keep pace with our growing dependence on electricity.

It is not so much a shortage of generators that renders our systems so vulnerable but our inability to dispatch available power quickly to places where it is needed. As the 2003 blackout cascaded across Ohio, Michigan, Pennsylvania, New Jersey and Ontario, the state of New York still had generators in reserve but was unable to deploy them in time to save even itself, let alone its neighboring states.

As the demand for electric power has steadily grown, investors have built generators and transmission lines to keep pace, but utilities have failed to provide the responsive control systems necessary to manage power effectively.

That was the general conclusion of the "Final Report on the August 14, 2003 Blackout in the U.S. and Canada" published in 2004 by a task force of experts. In that 238-page "Blackout Report" the word "reliability" appears 674 times.

CONGRESS SLUGGISHLY RESPONDS

Long before the blackout of 2003, Washington had been gridlocked over energy. But the Blackout Report finally goaded Congress into passing The Energy Policy Act of 2005, a lengthy and comprehensive law that shifts energy policy on many fronts.

On the specific topic of electricity, the law emphasizes reliability to the exclusion of every other competing value – including cost, the environment or local autonomy. Reliability standards that were once voluntary are now mandatory. Utilities that fail to comply are now to be penalized.

In addition, the Federal Energy Regulatory Commission (FERC) has authority to reward handsomely – at the expense of ratepayers – any utility that seeks to build new transmission lines needed to improve the grid. If state regulators get in the way, the federal Department of Energy may override local resistance by designating a geographic area as a "national interest electric transmission corridor."

RELIABILITY IN NEW ENGLAND

Although all of eastern North America is essentially a single organic grid with high levels of interdependency among regions, there are "seams" in the network defining smaller management areas. One of those seams surrounds the six New England states and is managed by "ISO-NE" – the Independent System Operator for New England, a non-profit organization that coordinates reliability for the region. Its annual administrative cost to ratepayers is $125M. ISO-NE contracts with most of New England's utilities to dispatch power, set transmission tariffs and operate a market for the sale of wholesale electricity.

The Energy Policy Act of 2005 emphasizes reliability to the exclusion of every other value – including cost, the environment or local autonomy.

When the blackout wave surged east from Ohio in 2003, it overcame many regional control systems including those of the New York state ISO; but ISO-NE was able to stop the surge short and spare most of New England from its effects.

Even though Maine generates more power than it needs and generally serves as an exporter to the rest of New England, we, too, have had our close calls, largely related to our notorious dependency on natural gas. Gas represents 40% of New England's total electric capacity, and 49% for Maine alone, compared to 20% in the rest of the nation.

On Saturday, December 1, 2007, an equipment failure in the Sable Island fields disrupted gas supplies to the principal pipeline feeding Maine. Three of Maine's five gas-fired plants dropped off line resulting in a loss of 1370 MW, over half of Maine's total capacity. ISO-NE responded by importing power from outside New England and calling on a number of factories to shut down, thus saving the rest of us from browning or blacking out. Other close calls occurred during the cold snap of 2004 and following Katrina in 2005.

MAINE UTILITIES RIDE TO THE RESCUE

In response to these local reliability issues and taking advantage of the special benefits of the 2005 Energy Policy Act, Central Maine Power Company in July of 2008 requested Maine's PUC to approve construction of a new 345 KV transmission line and numerous ancillary upgrades to better serve all of southern Maine from Newington, NH, to Orrington just south of Bangor. This "Maine Power Reliability Project" (MPRP) is projected to cost $1.4 billion. How much it may cost in the end is anybody's guess.

At the same time, CMP joined with Maine Public Service (MPS) in Aroostook County to seek approval of a 200-mile 345 KV line from Detroit, ME, to Limestone, to provide a direct connection from northern Maine to the rest of

New England without having to wheel power through New Brunswick. This "Maine Power Connection Project" (MPC) is estimated to cost $635M.

In a separate federal proceeding, CMP has asked FERC to declare that investments in both of these projects are entitled under the 2005 Energy Policy Act to a bonus rate of return of 13.14%, about 3% higher than what the Maine PUC would ordinarily allow for utility investments under its jurisdiction. By way of further contrast, a public utility can borrow money in the corporate bond market for only 7%.

In the meantime, the utilities are asking ISO-NE to qualify both proposals as "Pool Transmission Facilities" under the tariff rules that ISO administers. If they do qualify, then the cost will be "socialized," i.e., paid for by ratepayers throughout New England. Because Maine is only 8.4% of the ISO-NE market, over 9/10 of the cost of these projects may be paid for by the other five states.

Maine ratepayers are already paying our small share for reliability projects in Connecticut and Massachusetts, and the other states are contributing to Maine's recently completed 345 KV line from Orrington to New Brunswick.

A BIAS TOWARD TRANSMISSION

In any area where there is a shortage of power, the issue can be addressed either by building more generators close to the load, or by building transmission lines to import power from a surplus region, or by doing a bit of both. The challenge, in any case, is to define the "least cost alternative" so that ratepayers get the cheapest form of reliable power.

In the old days, when integrated utilities were providing both services, these questions were resolved within each state by a unified regulatory process that did not always lead to happy results. For example, in response to the oil shocks of the 1970's, Vermont elected to import power from Hydro Quebec under a 20-year fixed price contract. Maine, on the other hand, forced our utilities to finance the building of wood-fired non-utility generators closer to our load.

When the price of oil plummeted for the ensuing two decades, both states paid dearly for the long range commitments of their regulators. By 1996, supporters of deregulation had the argument they needed to transfer the economic risks of power generation to the private sector. All New England states except Vermont voted to deregulate.

However, when the private market sees risk, it demands reward. Since 1990, the cost of electricity in New England has risen 55% as compared with 35% for the rest of the nation.

Since deregulation, the world of electric power in New England has been divided into two investment camps: the generators who sell power across political lines in open markets; and the transmission and distribution (T&D) utilities whose distribution rates continue to be controlled by state agencies like the Maine PUC and whose transmission rates are controlled by ISO-NE and FERC.

Most experts conclude that the present system, dominated by federal regulators, is heavily biased toward building transmission. As noted above, the Energy Policy Act of 2005 creates powerful rewards for T&D utilities to invest in new transmission corridors and provides a federal preemption where necessary to overcome local barriers.

ISO-NE derives its authority from the T&D utilities through contracts that are approved and regulated by FERC. ISO-NE's stated mission is to ensure reliability and the adequacy of supply. Cost is a tertiary consideration left largely to the market. Under current ISO-NE policies, most transmission projects will qualify for socialized funding. Therefore, each state has a near term advantage to approve such lines knowing that the cost will be spread among neighbor states. But if all of the neighbors behave the same way, there is a distinct risk of spending more on transmission than New England requires.

Maine is sandwiched between 6¢ power to our north and a 10¢ market to our south.

MAINE'S PLACE

The millions of people who live south of Maine from Boston to New York create huge demands for electricity; but because supply is so limited, they have the highest power costs in America.

To the north and east of Maine, by contrast, power is cheaper, a blend of hydro, nuclear and wind sources from Quebec and New Brunswick. In addition, Maine has its own supply surplus and the potential to generate even more power from wind, bio-mass, and hydro – if only we could move the electrons south to those who need them.

And that's a problem. Existing power lines running from central Maine to the south can't carry any greater peak load, either from within Maine or from our Canadian neighbors.

As one economist put it, Maine is sandwiched between 6¢ power to our north and a 10¢ market to our south. That price gap, as well as the reliability issue, is creating pressure to build transmission to move electricity from northern generators to southern customers.

Unfortunately for Maine, our own power costs are linked to the broader New England market. Because generators in Maine have the right by federal law to sell their power anywhere they want, Mainers pay almost as much for electricity as do consumers in Connecticut. Our

Recommendations

1. Maine should continue to explore getting out of ISO-NE in 2010 unless acceptable reforms can be agreed to before renewing our contracts for another five years. The fear of over-building transmission at exorbitant cost is shared by other regulators in Massachusetts and Connecticut. Furthermore, Maine should not be saddled with paying for new generation to meet load demands in southern New England. Until the several states are able to find common ground for new rules, Maine should remain uniquely positioned to vote with its feet.

2. In determining the scope of new transmission to be allowed, Maine's PUC must be wary of costs. The utilities are motivated by federal incentives to spend as much as possible. The more they spend, the greater the perpetual return on that investment. Maine PUC is the only regulator whose job it is to balance benefits with the costs to consumers – even if the consumers live not just in Maine but all over New England.

slight price advantage derives from two factors: (1) A user close to the generator can buy power with less attenuation loss; and (2) at times of peak demand, congestion on the transmission lines limits the amount of power that can be sold out of Maine.

The building of proposed new transmission to New Hampshire will eliminate Maine's congestion advantage; but CMP argues that this cost increase will be offset by a general reduction in New England power prices made possible by the new line to Aroostook that will bring in less costly power from northern Maine and Canada.

While the transmission project in southern Maine will likely be paid for as a socialized cost by all of New England, other states object to having to contribute to the northern project in the same fashion. To counter this resistance, the two sponsoring utilities, CMP and MPS, have presented a study to show that the anticipated cost ($635M) will be more than offset by a $1B savings for all of New England through reductions in the cost of power over the next ten years. Maine's share of the projected ten-year savings is $189M.

In Part 2, we'll discuss the resistance to the Northern Project and what Maine must do to benefit from wind power expansion.

About the Author

Senator Peter Mills is a Skowhegan attorney who has served as a Republican member of the Maine Legislature for fourteen years, twelve of them in the Senate.

Stay informed: Sign up for the Maine Center for Economic Policy's e-newsletter and alerts at www.mecep.org

Maine Center for Economic Policy
66 Winthrop Street
2nd Floor
P.O. Box 437
Augusta, ME 04332
Tel: 207-622-7381
Fax: 207-622-0239
www.mecep.org

Printed on 100% post consumer recycled paper, process chlorine free (PCF)