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Andrew Rudin: Efficiency Vermont not so efficient

[Commentary](#) Jan. 27 2015, 6:55 pm [16 Comments](#)

Editor's note: This commentary is by [Andrew Rudin](#), who is an energy consultant, with 40 years' experience. He collects articles about efficiency in general and post them on a website www.efficology.com. He lives in West Danville and Philadelphia.

Efficiency Vermont is probably a well-liked program throughout Vermont. It seems like we get free energy reductions without having to change our behavior. Data from the Public Service Board, however, show that the program has not been effective, and Efficiency Vermont's annual reports show that the cost of their programs is extravagant.

Since these are likely not to be popular ideas, I would like to first give you some background. I lived in Adamant, Vt., for a dozen years and started a design-build construction company. I very quickly found out that I liked pipes, ducts and wires much more than plywood, studs and sheetrock.

I became an energy consultant right after the OPEC oil embargo in 1974, sold my construction business in 1978 and have been an energy management consultant for the 40 years since then. Most of my work is in Philadelphia and New York, but I have worked in Chicago, Boston, Arizona and many other places, mostly helping religious congregations reduce their energy costs.

I was a member of Gov. Snelling's energy task force, on the board of the Residential Conservation Service and the president of the Vermont Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers (1981-82).

Their work on an individual building may be successful, but in the big picture, Vermonters' use of energy was the same in 2010 as in 2000, when Efficiency Vermont started.

I have analyzed thousands of buildings and applaud Efficiency Vermont when they

actually reduce energy used by Vermonters. Their work on an individual building may be successful, but in the big picture, Vermonters' use of energy was the same in 2010 as in 2000, when Efficiency Vermont started. By contrast, Vermonters used 17 percent less energy in 1990 than in 2000 or 2010. These data are on Pages E2 and E3 of the Vermont Department of Public Service's [2013 report on Public Utility Facts](#).

Starting in May 2012, Vermont now judges the health of the state with Genuine Progress Indicators, which include economic, social and environmental factors as well as mere money. The GPI increased about the same amount in each of the two decades before and after Efficiency Vermont started – 1990-2000 and 2000-2010.

Efficiency Vermont recently won an award from a national rating system of state-by-state energy programs, but the criteria for that award exclude both measurable reductions in energy used per person energy and lower greenhouse gas emissions. We can assume, then, that many of these statewide energy efficiency programs are judged by shortsighted criteria.

Every Vermont electric utility invoice now includes a tax to support Efficiency Vermont, whether the ratepayer wants it or not, so, it is like extortion. In 2013, Efficiency Vermont's expenditures were \$37,060,921. While Efficiency Vermont claims that each "saved" kWh costs only 2.4 cents, their annual reports show that the average cost of a "saved" kWh from 2003 through 2013 is 30 cents, or 12½ times higher. This is \$300 million in expenses divided by one billion "saved" kWh, with no resulting decrease in energy used by Vermonters. These savings are estimated only by Efficiency Vermont, with no reasonable basis for claiming any of those estimated savings will persist in the future.

Faced with climate change challenges, Efficiency Vermont should do much better than they have in the past. Otherwise, they are wasting our money.

Notes:

[Efficiency Vermont's annual reports](#)

[Public Utility Facts 2013](#)

[The State By State national energy award program](#)

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Comments

1. *Mary Daly*

January 28, 2015 at 9:03 am

Wow! Who would have thought that taking our money to help others would have such deplorable results? Why don't you do away with Efficiency Vermont and let everyone keep their money? Then I would have more money to continue upgrading my own home without soaking my neighbors.

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2. *Annette Smith*

January 28, 2015 at 10:25 am

Andrew, I wonder if you could write a follow-up and go into more detail about why Efficiency Vermont has not achieved the results that most ratepayers are told they are achieving.

And what do you make of the idea that Efficiency Vermont's programs can promote technologies like air source heat pumps that increase electricity consumption?

Do you have recommendations for changes?

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- *Moshe Braner*

January 28, 2015 at 2:29 pm

Adding heat pumps increases electricity use but reduces the use of other heating fuels. In mild weather (about 20-40 degrees) a good heat pump uses about half as much natural gas in the power plant as would have been used in a furnace to heat the house. Just the big fan in an older, low-efficiency furnace uses half as much electricity as the heat pump uses in total, and that's not counting the fuel burnt in the furnace. Moreover, in Vermont the electricity mostly comes from Hydro Quebec – arguably lower in carbon emissions. If you use propane or oil, switching to a heat pump will save you a lot of money.

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3. *Jamie Carter*

January 28, 2015 at 10:52 am

One issue with Efficiency Vermont is actually accessing the funds and rebates. If you don't jump through a bunch of useless hoops you don't

qualify.

If you own an 1800's farm house you don't need to spend a few hundred dollars for an energy audit to know that it's under insulated and the windows are drafty. But it is lining someone's pocket and keeping the public from accessing money they paid in.

Where's Hoffer... this program needs a rather thorough audit, where is that \$38 M going? How much actually makes it to residential customers to upgrade their homes? I'm willing to bet it's pretty insignificant..

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- [Randy Jorgensen](#)

January 28, 2015 at 12:24 pm

Amen! Then their idea of promoting is a 500 rebate on a \$10k install of a new system. Then you have to go through "their" installers. Someone is raking in the doh on this charade at the expense of the average Vermont Joe.

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4. *Michael Gardner*

January 28, 2015 at 11:17 am

Their process is very frustrating. We did an audit, did all of the work, and then couldn't claim the rebate because we couldn't get a contractor to perform our "close out" audit before their meaningless deadline.

Even worse, their audit program has no data on electrical consumption. Since we bought our old house we can't fathom how we use so much energy, we have all LED bulbs, high efficiency appliances, etc. Yet we use over 1kw a month and our bill is over \$200. Can't seem to find anyone that can explain our usage, not even our electrician

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- *Matt Fisk*

January 28, 2015 at 1:03 pm

Michael,

As a risk-free experiment, try opting out of your smart meter (assuming you have one). I have spoken to a number of Vermonters who lowered their bills significantly by going back to an analog meter. Having a spinning disk on your meter is actually the best way to

understand your REAL TIME usage of electricity; something a so-called "smart" meter all but hides from you.

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- *Moshe Braner*

January 28, 2015 at 2:37 pm

The "smart meter" that GMP installed on my house does not display the momentary power usage (watts, not watt-hours), unlike the meters in Burlington, for example. That is a shame since, as you say, such a display could help one figure out what's using how much. But the old analog meters didn't display that either. Yes you could use a stopwatch to time the speed of rotation. But you can do the same with a smart meter, it has a blinking arrow image that you can time with a stopwatch. Google that.

As for the mystery high power usage, it's worth spending effort to figure out, as the bills otherwise mount. My guess: a water pump that runs unnecessarily. That could be a well pump struggling against a pipe that is leaking (inside the well or between the well and the house). Or, if you have such a system (which is a very bad idea IMO), a sewage pump that carries stuff from the septic tank to a higher-elevation leach field or mound, but has a fault that keeps it running all or most of the time. A friend of mine had the latter problem and the electric bills were terrible.

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5. *Kelly Lucci*

January 28, 2015 at 11:32 am

I'd just like to clarify some of the information provided in this commentary. Most importantly, the final paragraph includes an error that significantly understates the economic value that Efficiency Vermont is delivering. Mr. Rudin's calculation only includes the value of energy savings being delivered in a single year, not accounting for the fact that energy saving technologies (such as an LED light) have lifespans (and thus savings) that extend for multiple years.

A fair calculation of Efficiency Vermont's value would account for the fact that in a given year, Efficiency Vermont is helping Vermont homes and

businesses invest in energy efficiency measures that will provide economic benefits for years to come. As shown in table 2 our 2013 annual report (which is independently reviewed and verified by the Department of Public Service), if you compare total costs for the year (including both Efficiency Vermont as well as any customer cost-sharing) against the energy savings being delivered thanks to those investments, the net economic benefit for Vermonters is \$59.2 million.

Efficiency Vermont's "efficiency" stacks up well against that of other states. Just yesterday, in fact, the Public Service Department issued a press release on the results of a benchmarking study done to compare Efficiency Vermont's costs and performance with that of eight other states. Quoting from that press release, here is the Department's conclusion:

"The Vermont Public Service Department has released its benchmarking comparison of electric energy efficiency program performance in Vermont with performance of programs in eight other states. The evaluation shows that Vermont's electric energy efficiency programs save more energy than comparable programs, with costs that are very similar to their peers.

"I am gratified but not surprised that Vermont's Energy Efficiency Utilities show greater benefits for dollars spent than systems in other states' said Chris Recchia, Commissioner of Vermont Public Service Department. 'Vermont is a national leader in energy efficiency and this report highlights the success of our programs' Recchia added."

Efficiency Vermont is a highly-regulated utility and takes seriously its mandate to deliver cost-effective energy efficiency savings to benefit all Vermonters. We welcome the oversight and scrutiny that comes with that mandate, and appreciate the opportunity to ensure Vermonters have an accurate view of the economic benefits we are delivering.

Kelly Lucci
Manager, Public Affairs
Efficiency Vermont

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6. *Matt Fisk*

January 28, 2015 at 1:20 pm

I am still on the fence about EVT. I have purchased a number of LED bulbs, subsidized by ratepayers, so I have benefited from the program a little.

However, I continue to question the value of subsidizing CFL bulbs that have poor power factors (0.5), create power quality problems (affecting other electronics and our health), and generate hideous light which is nothing like natural light and often emit UVA and UVC rays.

The poor power factors of the CFL bulbs EVT subsidizes and gives away may save the customer some power, they are creating line losses for our utilities and heating wiring. I think it is worth asking, how efficient is that?

To me, efficiency is swapping out a 100 watt incandescent bulb with a 40 watt version of the same bulb, or taking half your recessed light bulbs out, or keeping lights off as much as possible.

I think many people think that new technology is always more efficient (like electric cars and heat pumps), but as they say, "they don't make 'em like they used to." Call me old-fashioned, but filament bulbs cannot be beat.

Quality over quantity.

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- *Moshe Braner*

January 28, 2015 at 2:41 pm

A 15-watt CFL causes a lot less heating in the wires than a 60-watt incandescent bulb, despite the poor power factor. And the better ones makes perfectly acceptable light quality for most purposes. That said, the newest LED bulbs are wonderful. Go get yours, heavily subsidized by EVT, while you can! Relative to incandescents, a single LED bulb will save you \$100 or more over its lifetime. Quite a feat for a \$30 investment – or even better, \$5, thanks to the subsidy.

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- *Matt Fiskin*

January 28, 2015 at 8:28 pm

Moshe,

One man's trash is another's treasure. CFLs may be "perfectly acceptable" to a lot of people, but remember, it used to be "perfectly acceptable" to smoke cigarettes on a plane or a doctor's waiting room. We all learn eventually, sometimes the hard way.

I have a collection of a dozen or so different LEDs and while

they generate bright, crisp light, they all seem unable of creating relaxing light. In fact, one of the main problems with LEDs is that their light spectrum tends to keep people up at night and mess with their melatonin production.

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- [Randy Jorgensen](#)

January 29, 2015 at 6:36 am

EVT will subsidize 75% of a light bulb yet only a small fraction of that for a heat pump.

An average household spends only 14% of their electric bill on lighting. We would be getting a much better bang for our buck if we ditched the heavy subsidy on light bulbs and put those dollars towards heat pumps. Now that would really be helping people out with their heat bills. We could eliminate much of the heating subsidy for oil/propane for low income Vermont citizens.

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- *MJ Farmer*

January 28, 2015 at 2:58 pm

I have had 3 CFLs explode in the last couple months. One of them even had a burning smell. I have replaced them with old fashioned GE bulbs. The CFLs, tossed them in the garbage since they were all in pieces. Didn't even last 2 years.

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7. *Wayne Andrews*

January 29, 2015 at 6:15 pm

I have a 40 year old freezer in my basement that hardly runs if kept relatively full. Now if I follow EVT advice I probably should have changed out my freezer about 3-4 times by now. I realize the newer freezers are more efficient however to listen to EVT tales all they are interested is in lowering your energy use and never interested in the total dollars out of your pocket.

Yes your electric bill goes down but you have less in your wallet.

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8. [Tom Stark](#)

February 3, 2015 at 12:31 am

I replaced ten 60 W bulbs with ten 10 W LED bulbs for \$50 thanks to Efficiency Vermont's rate-payer funded subsidy.

I save \$155/year at \$.17/kWh, if used an average of 5 hrs/day.

Subtract the \$5 surcharge I pay to EVT each month (\$1.01 per 100 kWh's), and I save \$95/year EVERY YEAR for 10+ years.

That is effective public policy.

Efficiency Vermont is far from perfect; it fails every time a Vermonter wants their help and can't get it. But if that 1 cent per kWh monthly charge is incentivizing more Vermonters to make decisions that benefit us all in the long run, I'm all for it.

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