

THE RISE OF THE ENERGY EFFICIENCY UTILITY

by

Susan Arterian Chang

Vermont's efforts to curb electricity demand are working, and Delaware is starting the most ambitious plan yet

7 May 2008— A Vermont farmer decides to get rid of electric heating for his greenhouses and instead burns waste oil collected free from area restaurants, saving about US \$25000 in four years, after an initial investment of \$12000. A woman living uncomfortably in an old, drafty house insulates the attic and walls, buys new windows, and weather-strips doors, cutting her electricity costs by 30 percent and her heating bills by half. Similar improvements, plus new energy-efficient fans for a walk-in freezer, helped a village general store reduce its annual energy costs by \$1800, with an initial investment of \$8000.

All those energy-reduction success stories and many, many more can be traced to the activities of Efficiency Vermont, an independent nonprofit provider of energy-efficient services. Similarly structured service providers are now operating with positive results in a number of other states. Established in 2000, Efficiency Vermont helps electricity customers find ways to cut their consumption, often just by providing them with free technical advice—as with the farmer switching to waste vegetable oil—but sometimes by subsidizing the purchase of energy-efficient products like lightbulbs or boilers. The program, administered by the Vermont Energy Investment Corporation (VEIC), is funded by a 4.5 percent fee attached to each customer's electricity bill.

Having helped close to 60 percent of the state's electricity customers in seven years, Efficiency Vermont is responsible for an electricity load growth of -1.8 percent in 2007, making Vermont the first state to achieve that goal through efficiency measures alone. Wisconsin and Oregon have established similar efficiency utilities, and this summer, Delaware will launch its Sustainable Energy Utility, or SEU—the most ambitious and wide-ranging variation on the model yet.

The notion of offering energy-efficiency services to the public is by no means a new one. Following the oil crises of 1973 and 1979, U.S. state regulators—with some encouragement from the federal government—often ordered utilities to set up programs to encourage customers to cut electricity use. Such programs generally went by the name of demand side management (DSM) or integrated resources planning, and they played an important part in curbing the growth of U.S. electricity demand well into the 1990s. But then along came electricity deregulation, and with it a tendency to reduce the role of the state regulatory bodies. DSM programs tended to atrophy too.

Efficiency utilities and DSM have a good deal in common, concedes Martin Kushler, who handles utility issues for the American Council for an Energy-Efficient Economy (ACEEE), in Washington, D.C. But the emphasis in the early days of DSM tended to be on conservation, he says, recalling U.S. President Jimmy Carter donning a sweater on national television. In the independent-efficiency utility, the accent is squarely on efficiency and on the economic advantages to be had from making improvements.

Now Delaware is poised to join the ranks of states that operate efficiency utilities, but with much more ambitious goals. Its SEU, expected to be operational this summer, will oversee perhaps the most comprehensive energy savings and distributed renewables program in the United States. The SEU will be charged with reducing energy use from all fuels in Delaware by 30 percent by 2015—a third in homes, a third in businesses, and a third in the transportation sector.

At the same time, Delaware's SEU aims to stimulate new renewable energy generation totaling 300 megawatts by 2019. If the SEU's goals are achieved, Delaware will cut its carbon emissions by a third by 2020.

John Byrne, the SEU's architect and director of the Center for Energy and Environmental Policy, at the University of Delaware, points out that earlier incentives to adopt efficient energy technology were much more limited. For example, "you couldn't get a good green building constructed using existing state policies that only offered incentives for electricity savings," he says.

The Delaware SEU's efforts are to be funded by a 36 cents per month electric bill surcharge and a \$30 million private bond issue. Unlike a traditional government bond, the \$30 million "sustainable energy" bond will not be guaranteed by the full faith and credit of the state, thus avoiding any potential negative impacts on Delaware's credit standing or its cost of borrowing. Instead, investors will look for repayment from a stream of earnings generated by a novel scheme under which the SEU shares a portion of the dollar value of its customers' energy savings and renewable-energy credits.

The SEU will, for example, make up the difference between the upfront cost of a certified efficient appliance and a standard lower-efficiency one. In turn, the customers will pay the SEU an estimated 35 percent of the total annual energy costs saved, either on a "deemed" or actual metered basis, for the first five years. A similar shared savings will operate for customers who undertake energy-efficient remodeling or who purchase a hybrid car.

Can the independent-efficiency utility work on a nationwide basis, and should the model be adopted more broadly? A number of private utility operators—Connecticut Light & Power, Southern California Gas Company, and Pacific Gas & Electric, among others—run exemplary efficiency programs. Nonetheless, the ACEEE's Kushler believes that the independent-efficiency model is "conceptually the optimal approach."

Margie Harris, executive director of Oregon's Energy Trust, agrees. A nonprofit independent-efficiency utility, she observes, can focus single-mindedly on energy saving, and do so under one roof. "The advantage is that all we are here to do is to acquire efficiency and renewables," says Harris. Blair Hamilton, executive director of Efficiency Vermont, echoes that view. With today's increasingly competitive electricity systems, many energy companies often vie for the privilege of selling you your energy. "[But] markets for efficiency don't follow the lines of utility poles," says Hamilton. If, for example, you want everybody in the state to start using higher-performance air-conditioning, why not just offer everybody the same rebate in every hardware store in the state, rather than let each electricity distributor show up at each general store with a different rebate program?

What's more, electricity generators and distributors in a competitive world must ultimately answer to investors, who want to see them make greater profits by selling more electricity to more customers. But "unlike investor-owned utilities, we have no potential conflicts of interest in that regard," says Harris. "If we save too much [energy for our customers], it doesn't negatively affect our bottom line or our shareholders."

Duke Energy CEO James Rogers's famous request that regulators allow utilities "to earn the same amount for saving a watt as they would for generating a watt" reflects the investor pressure faced by traditional private utilities. Indeed, according to Hamilton, "investor-owned utilities have a fiduciary responsibility to their investors. And they are saying they want to get the same rate of return for efficiency as they do for their capital investment [in energy generation], which is typically over 10 percent."

Contrast that with the deal that VEIC, the contract administrator for Efficiency Vermont, has with the state of Vermont: 3.5 percent of the reimbursable costs VEIC incurs for energy-savings services is withheld by the state of Vermont until the end of a three-year contract period. If by the end of that term VEIC delivers the energy savings it promised, the 3.5 percent withheld is disbursed. VEIC receives no additional rewards or incentives for meeting targets. Efficiency Vermont saved the state 105 000 megawatt-hours of electricity in 2007 at a cost of just 2.6 cents per kilowatt-hour, versus the 10.7 cents per kWh it cost the state's utilities to supply electricity to ratepayers. Not a bad deal for the state's electricity customers, and a result that may prove to be the best advertisement for the not-for-profit efficiency-utility model in years to come.

ABOUT THE AUTHOR

Susan Arterian Chang is a writer based in London who covers financial and environmental policy topics. In November 2007 she profiled [clean energy investment guru Robert Wilder](#) for Spectrum Online.