

"Conservation Pays"

Companies Being Rewarded For Using Less Electricity, Installing Efficiency Devices

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January 14 2007

GUILFORD -- David Ives, surrounded by spools of copper wire and the hum of machines, tinkered with a little blue box on the wall at Algonquin Industries.

Ives, an energy engineer, was installing a device that will calculate how much electricity the company uses during the course of a day to shape metal into wire.

Once the box is in place, Algonquin can cut electricity use on the hottest days of the year and receive payments in exchange.

"They're one more with the power to go down," Ives said.

With demand for electricity continuing to climb, regulators in Connecticut and New England want more businesses and homes to reduce their power consumption, either temporarily at times of peak demand or permanently through efficiency measures.

To accomplish that, regulators are creating markets in which little blue boxes, fluorescent lights and energy-efficient air conditioners can start to compete with power plants for ratepayer-funded payments.

"It is absolutely a sea change in the industry, and New England is revolutionary," said Mike Gordon of ConsumerPowerline, a New York-based company that provides efficiency and curtailment services and does work in Connecticut.

Hundreds of companies have already agreed to help the New England power grid on the hottest days of summer by reducing production, turning off equipment and otherwise reducing the demand for electricity. Connecticut, alone, can already reduce the demand for power on a given day by 480 megawatts, or enough electricity for around 400,000 average homes.

But even with those curtailments in place, the grid is being stretched to its limits on days of peak demand, with each summer bringing a new record, according to ISO New England, which operates the regional electric grid.

Skyrocketing Demand

Environmental advocates, regulators and others in New England are beginning to challenge the notion that building more power plants is the only way to keep up with rising demand. They say cutting peak demand, which is expected to grow about 1.9 percent annually through 2015, is cheaper than chasing it.

"The issue becomes: How do you satisfy that increased demand?" said Gordon van Welie, president and CEO of ISO.

Trying to balance the equation, Connecticut regulators and ISO have agreed to provide "capacity payments" both for efficiency measures and for companies that cut use at peak times. The New England electricity market is the first in the United States to take that approach, van Welie said.

To get those payments, efficiency companies will compete against power plants that also receive the payments. The capacity payments are designed to provide incentives to build more power plants, as well.

"I think efficiency definitely will qualify, and play an important role in those markets," said Derek Murrow, director of policy analysis for Environment Northeast, a regional group focused on energy, air quality and climate change.

The strategy could lead to lower prices by reducing the need for power from inefficient plants and natural gas-fired plants, which are costly to operate.

No new major power plant has started up in Connecticut since 2004, when a gas-fired generator in Milford went on line. A major transmission line project designed to improve the movement of electricity around the state and region won't be completed until 2009. Older, inefficient plants continue to be a major source of energy in the state.

As a result, electricity rates continue to rise, and Connecticut has the highest rates in the continental United States. The result is a new appreciation for energy conservation, experts say.

"Now that prices are higher," said Jeffrey Gaudiosi, vice president of the Manufacturing Alliance of Connecticut, "it is worth the trouble to do it."

An ISO study last year found that if New England reduced its peak demand for electricity by 5 percent, ratepayers could save almost \$500 million a year.

Just across the state line in Westchester County, N.Y., Con Edison is trying to deal with similar problems.

The old solutions of building more plants and adding more lines is slow and expensive, so Con Edison contracted with New Jersey-based Public Energy Solutions to cut demand by 40 megawatts, or enough electricity to power 35,000 average homes, said Keith Hartman, president of Public Energy Solutions.

The company started going business to business, offering incentives to pay for modifications that would cut demand. For each kilowatt that Con Edison does not need to supply, Public Energy Solutions gets a payment.

Studies find that New England has similar potential. In a 2005 study, the Northeast Energy Efficiency Partnerships determined that the region could eliminate about 4,300 megawatts of demand, or enough power for 2.4 million average households.

State Rep. Steve Fontana, D-North Haven, co-chairman of the legislature's energy and technology committee, believes Connecticut has barely begun to tap the potential of efficiency measures. To illustrate that notion, Fontana said he asks constituents how many compact fluorescent bulbs, which are more efficient than incandescent bulbs, they have installed in their houses. The answer is typically one or two out of a dozen or more light fixtures.

"We haven't done nearly enough if we haven't done things that are easy," he said.

The efficiency partnerships study showed that almost half of its projected reduction in electricity use could come from lighting alone. For example, only about 6 percent of all light bulbs in use in the United States are compact fluorescent bulbs, said Jim O'Reilly, the partnerships' director of policy, outreach and communications.

"You see the reservoir, the pool of potential," he said.

But efficiency improvements won't happen without the help of subsidies and market programs, experts say.

"There are lots of reasons why these investments are not made," said Susan Coakley, the partnerships' executive director.

In some cases, more efficient options in lighting, appliances and other equipment are expensive, meaning it can take years to recoup the extra costs.

Also, many existing efficiency programs focus on persuading consumers to make energy-efficient choices when they replace products. The harder thing to do is get consumers to replace inefficient appliances, bulbs and other items while they're still working, Coakley said.

Under the ISO market program, efficiency and curtailment efforts are expanding, getting paid through electric rates for each kilowatt taken off the grid. Payments in the beginning will be \$3.05 per kilowatt per month.

At the same time, the state Department of Public Utility Control is preparing to award similar payments through long-term contracts that can stretch to 15 years. Both proposals for new power plants and efficiency and curtailment contractors have made bids for those contracts. The department is expected to award them in late April.

DemandDirect, the small company Algonquin Industries is working with, is one of the bidders. If it wins, it will have to find businesses willing to curtail power use during hot days and make permanent changes in air-conditioning, lighting and other equipment. It will use its capacity payments to pay companies to enter curtailment agreements or help finance the retrofitting of inefficient equipment.

Jeffrey Lines, one of the founders of the Woodbury-based company, estimated that companies that are willing to cut back 250 kilowatts at times of peak demand could receive \$20,000 a year from the state and payments from ISO. Lines thinks there's enough potential efficiency business to keep his company and others busy for a long time.

"I think there are hundreds of additional megawatts that can be obtained without generators," Lines said.