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THE ENERGY CHALLENGE

Efficiency, Not Just Alternatives, Is Promoted as an Energy Saver

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WATERBURY, Vt. — [Green Mountain Coffee Roasters](#) makes a lot of money selling individual servings of ground coffee in white cups that are churned out by the millions from a hissing, clanking production line here. But it recently found a way to generate even greater profits from the operation that will require only a modest investment.

Spending \$150 to \$200 to install a more efficient blower to cool the laser that carves the date and batch number into each passing cup will cut Green Mountain's annual electricity bill for each laser by about \$200, says Paul Comey, its vice president for environmental affairs. That might not seem like much, except that the company has 40 such lasers, which it plans to upgrade this week.

Green Mountain Coffee was persuaded to undertake such improvements in efficiency through an unusual effort by the Vermont Energy Investment Corporation, which is under contract with the state to find thousands of such energy savings.

Opportunities like this abound in the commercial and industrial sectors, requiring no new research or technology. But few places are doing an effective job of finding them, experts say.

Vermont is one that is. Similarly, New York committed itself to pushing its utilities to do the same when Gov. [Eliot Spitzer](#) said recently that his goal was to cut electricity demand by 15 percent from what it would otherwise have been in 2015. That implies holding demand almost steady.

Renewable energy sources like wind and solar are getting a lot of attention these days as a way to reduce the impact of energy use on the environment. But even enthusiastic supporters of alternative energy agree that the easiest way to cut carbon emissions and air pollution is to focus more on efficiency, less on pollution-free generation.

"Efficiency is the steak," said Carl Pope, executive director of the [Sierra Club](#). "Renewables are the sizzle."

At a recent conference on energy efficiency and investment strategy, Pedro Haas, an energy expert at McKinsey & Company, said his consulting firm recently asked people worldwide what payback time they would find acceptable before investing money to save energy.

One fourth of them said they would never spend any money to improve energy efficiency; 50 percent said they wanted to earn back the investment in two years or less.

“That means about 75 percent of the public will require economics that are just not there,” Mr. Haas said.

The alternative is to let utilities make the investment. James E. Rogers, the chief executive of [Duke Energy](#), said he would like to persuade regulators to let his company invest in energy efficiency on customers’ premises, and receive a profit on those investments.

For example, if buying an extra-efficient air-conditioner costs an additional \$1,000, a homeowner might hesitate, he said, but the utility would not. Duke would offer to pay for the device and collect a monthly fee as a return on the investment over time by adding a small charge to the electric bill.

It would also collect an additional amount from other ratepayers, but they would end up saving money over the longer run because the investments help hold down demand, lessening the need to build expensive new power plants, the thinking goes.

Ralph Cavanagh, an electricity expert at the [Natural Resources Defense Council](#), said that utility returns average 15 percent, and that the willingness of the utilities to invest in relatively low-return generation projects while customers ignore high-return efficiency investments was driving consumption 20 percent to 40 percent higher than it should be.

Mr. Rogers and other utility executives sometimes talk about “decoupling” electricity rates, to encourage utilities to help their customers save money. At present, most regulated utilities have their rates set by state officials by calculating how much money they would need for a fair rate of return, and dividing by the amount of electricity sold, to arrive at a price for each kilowatt-hour, or for a kilowatt of load. Spend dollars to make more power, and earn a return on that money; spend dollars to sell less, and watch your income fall.

The idea of decoupling peaked in the 1980s but after competition was introduced in the generating system, the idea lost favor. “We had those discussions 20 years ago, and we need to have them again,” said Diane Munns, the former chief utility regulator in Iowa, who now runs the retail energy services group at the Edison Electric Institute, the trade association of the investor-owned utilities.

But not everyone agrees. Money for such programs always comes from all electricity customers. In several states, industrial customers have argued that they should not be forced to subsidize investments in other factories that lower their competitors’ costs.

In Vermont, a different argument has carried the day. Cutting electric consumption at Green Mountain’s coffee roasting plant and hundreds of other places will eliminate the need to build some additional power plants, string transmission lines and fuel the plants.

The last few megawatts of power, from new generators and lines, is more expensive than the cost from existing plants and lines, so cutting growth in electricity demand also cuts high-cost supplies.

Nancy C. Floyd, co-founder and managing director of Nth Power, an investment banking firm that specializes in energy, said utilities may be best situated to promote efficiency because they already have a relationship with every building owner.

California has long enlisted utilities to help cut electricity use, partly by structuring rates so a customer's last few kilowatt-hours are extremely expensive, raising the incentive to buy more efficient equipment. The state was a pioneer in giving utilities rate increases for spending money to improve the efficiency with which customers use electricity. California has another enforcer, the threat of repetition of recent blackouts.

Decoupling is not limited to electricity; Utah just began an experiment in decoupling natural gas rates.

Vermont took a different tack, hiring Vermont Energy Investment, doing business as Efficiency Vermont and describing itself as an "efficiency utility." Some Vermont utilities were just too small to have effective efficiency programs, regulators said, and some did not have their hearts in the work.

But no matter what the attitude of the utility, in most places the traditional ways of making energy still turn out to be easier to do than to save it. William R. Prindle, the deputy director of the American Council for an Energy Efficient Economy, a nonprofit group in Washington, said that it was simpler to finance and build a new power plant than to find the thousands of places to invest in energy efficiency, even if the dollars buy more power through efficiency than through new generation.

But the incentives for energy efficiency are growing, experts say.

"When we started talking about this in 1990s in terms of energy efficiency versus coal energy, we were talking 4 cents a kilowatt-hour for coal, and 4 cents for energy efficiency," said R. Neal Elliott, the industrial program director at the council. "Today we're talking optimistically, without carbon taxes, 10 cents for coal. With carbon taxes, we may be talking 20 cents for coal."

"And energy efficiency," he said, "is still 4 cents or less."

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