

Time to Save

BUSINESS MODELS FOR EFFICIENCY

BY LISA V. WOOD

THE AMERICAN APPETITE FOR electric power shows no signs of diminishing, despite the widespread introduction of new, more efficient appliances and equipment and increased consumer savvy about how to reduce electricity use. Efficiency gains to date have been easily eclipsed by the proliferation of ever-larger homes with more appliances and the ubiquitous flat-panel television displays and other electronic devices. According to the U.S. Energy Information Administration, the growing U.S. population and the surging digital economy will drive American power demand up by 30 percent by 2030.

The nation's electric utilities acutely recognize the urgent need to quickly accelerate energy efficiency programs across the board, for a host of reasons. Efficiency must become a critical weapon in the effort to reduce emissions of greenhouse gases, not to mention criteria pollutants such as nitrogen oxides, sulfur dioxide and mercury. Equally important, electric companies are all operating in a rising cost environment. Intensifying cost-effective energy efficiency programs is one way of equipping our customers with tools they can use to manage their energy use and utility bills.

Besides helping save money for customers, this effort also can help the utilities themselves. The saying in our industry now is, "The cheapest power plant is the one you never have to build." Recent projections by the Electric Power Research Institute and the Edison Electric Institute show that the industry can offset one-third of the growth in new demand and 40 percent of summer peak demand growth expected from 2008 to 2030 by increased energy efficiency programs and demand response measures alone. Although we cannot meet all of our projected increases in demand with energy efficiency, it clearly can play a highly significant role.

Although energy-efficiency investments offer many benefits, they are not without costs. Therefore such investments typically must pass a cost-benefit test before state regulatory commissions approve them. The National Action Plan on Energy Efficiency – a collaborative initiative launched in 2006 by a consortium of governmental, regulatory, utility, and non-governmental organizations – declared that new efficiency programs must not only be cost-effective but also that regulatory barriers to energy efficiency must be removed. The plan

made specific recommendations to "modify policies to align utility incentives with the delivery of cost-effective energy efficiency and modify ratemaking practices to promote energy efficiency investments."

Similar to power plant investments, utilities and regulators generally agree that utility investments in energy efficiency must be cost-effective and the cost of those programs must be recoverable in rates. However, these two criteria alone will not work to promote a sustainable investment in energy efficiency because energy efficiency will not be on an equal playing field with supply-side options. Two additional criteria are required. There must be recovery of lost fixed costs due to the energy-efficiency-induced drop in electricity sales and performance incentives for successful efficiency programs.

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Lisa Wood
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mance incentives have been debated for more than a decade and different jurisdictions have settled on different approaches, the discussion continues. The approaches really boil down to the three basic models: shared savings, bonus return on equity and virtual power plant models. All three models are currently in use or under consideration by investor-owned utilities and regulators.

Under the shared savings model, energy-efficiency program costs and lost fixed revenues are recovered via a prospective rate adjustment. In addition, the utility receives a percentage of the net value of the energy and capacity avoided cost savings, typically ranging between 10 percent and 20 percent.

Under the capitalization and bonus ROE model,

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the utility capitalizes all program costs in its rate base and shareholders earn both the allowed rate of return and bonus rate of return on the equity portion of its efficiency regulatory asset.

The virtual power plant or save a watt model includes an energy-efficiency rider that essentially folds cost recovery, recovery of lost margins and performance incentives into a single mechanism rather than treating them separately. Under this approach, the utility is compensated for investing in energy efficiency based on the avoided cost of new capacity. Although this approach has not yet been implemented, allowing the utility to recover some portion – perhaps as much as 85 percent – of the costs avoided by “saving watts” rather than building a new supply source is currently under discussion. This structure creates an incentive to both minimize costs and to invest in energy efficiency.

As utilities begin to make major investments in energy efficiency and to rely more on it as the fifth fuel in their portfolio of energy sources, the issues involving cost recovery, lost revenue recovery and performance incentives loom large because the impacts become much more significant. As with any major investment, providing a reasonable degree of certainty about the rules of the game may, in itself, be the largest single motivator for utilities to invest in efficiency programs. In addition, if efficiency is indeed to be treated truly as the fifth fuel, then the utility must have some degree of control over the investment.

As we confront the dual challenge of mitigating climate change and reacting to an ever-costlier operating environment, we can candidly say in 2008 that energy efficiency is here to stay and no longer is a

passing fad as it may have been in the 1980s and early 1990s. The joint commitment by utilities, regulators and customers to making efficiency a permanent and prominent part of our thinking must be real and long term. This is why we need new regulatory policies that align customer, utility and investor interests. Efficiency needs to be a fundamental component of utility business strategy going forward.

Lisa V. Wood is executive director of the Institute for Electric Efficiency, part of the Edison Foundation.

NewsFlash

MIDWEST REGIONAL EMISSIONS

Midwest states should attempt to limit regional emissions of greenhouse gases starting in 2012, according to Wisconsin Gov. Jim Doyle. “Given that the federal government simply has not been moving strongly in this direction, it is important that the various regions of the country get to work,” Doyle said. His comments were reported in the *Milwaukee Journal Sentinel*.

New Jersey Catches Rays

STATE EMERGES AS CALIFORNIA EAST

BY GARY M. STERN

NEW JERSEY, PREVIOUSLY KNOWN for Atlantic City and Bruce Springsteen, is fast building a reputation as something completely different: a leader in solar energy. While California has been number one in subsidizing and encouraging solar power generation, New Jersey now ranks second in solar installations and solar capacity in the country. What specific policies has New Jersey introduced to spur solar growth, and what can other states learn from its practices?

“While most people think of the sun states like Florida and the Southwest, New Jersey has been a leader in promoting solar use,” stated Monique Hanis, a spokesperson for the Solar Energy Industries Association, which is based in Washington. The rise in solar use results from state policies; it won’t happen by itself, she added.

New Jersey’s renewable energy programs are proving that solar will be built if prices are subsidized and reduced.

The impetus for New Jersey’s encouraging solar was based on 1999 legislation that established what came to be called the New Jersey Clean Energy Program, noted Jeanne Fox, president of New Jersey’s Board of Public Utilities. The program’s goals were for energy efficiency and reducing carbon emissions through clean generation and renewable energy. It offered two renewable energy programs revolving around rebates and energy-trading certificates.

In fact, New Jersey’s Customer On-Site Renewable Energy rebate program, which launched in 2001, distributed more than \$213 million for solar use as of June. The money covered 2,355 residential systems, 330 commercial systems, nearly 70 schools and 70 other facilities, amounting to 2,825 projects. By the end of this year, more than 3,000 solar systems will be installed in New Jersey compared to six installations as of 2001.

Ratepayers were charged \$5 a year on their electric bill, and those funds were funneled into a special utility fund to spur solar use, noted Rick Brooke, the president of the Mid-Atlantic Solar Energy Industries Association. Residential and commercial customers who installed solar systems and applied for rebates

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On the road to implementing Smart Grid, utilities need to leverage their investment in technology systems such as GIS, OMS, SCADA, and AMI. The challenge is to provide the applications, the integration, and the analysis tools to answer some key questions:

- Can I make *optimal* asset and load management decisions in near-real time?
- Can I provide operations personnel with a more *comprehensive, simpler* user experience to make informed decisions?
- Can I improve *customer service* and *system reliability* by improving data access and accuracy?

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