

## ELECTRICITY:

### Small but enthusiastic band of users finds big savings in 'dynamic pricing'

Jeffrey Tomich, E&E reporter

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Margaret Sabatino of Oak Park, Ill., checks her computer once an hour for movement in spot power prices, watching out for market spikes.

Sabatino doesn't run an energy trading desk. She doesn't even work in the industry. The 58-year-old and her husband, Rick, are ordinary consumers trying to save energy and shave a few dollars off their electric bill.

But she has a powerful tool at her fingertips that most consumers don't. While most residential utility customers and small businesses pay a flat rate for power that varies only by season, the Sabatinos are among 11,000 Commonwealth Edison Co. customers in the Chicago area enrolled in a unique Illinois plan that lets them pay real-time prices for electricity.

Since enrolling shortly after the program began in 2007, the couple have learned how to manage the most basic household tasks to take advantage of fluctuating prices. They start the dishwasher before going to bed, program the washing machine to run at 4 a.m. and charge cellphones while they sleep.

"There's not much effort to it at all," Margaret Sabatino said. "We've really just kind of adapted our lives around it."

The vigilance has paid off. On average, the couple have shaved one-third off their monthly electricity bills, which used to average about \$150, she said. Today, saving energy has become sort of a contest for the Sabatinos. They've installed a Nest thermostat, swapped out appliances for more efficient ones and evangelized to friends and their grown children on the benefits of energy efficiency.

Despite enthusiasm among participants, less than 1 percent of eligible customers have enrolled in real-time pricing plans in ComEd and Ameren Corp. service areas, which cover much of the state. In fact, real-time electricity prices and other so-called dynamic pricing programs tried across the country have, in general, been slow to gain traction.



**[+]** A real-time power pricing program offered by Chicago-based Commonwealth Edison has delivered significant savings for the 11,000 or so participants. But this chart of hourly prices from a bitterly cold Jan. 7 is a reminder that consumers also bear the risk when energy markets are stressed. The blue line shows the hourly prices that participants expected to pay, and the red line shows the actual prices they were charged. Photo courtesy of Commonwealth Edison.

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Anne Evans, CEO of the newly named Elevate Energy, a Chicago-based nonprofit that administers the Illinois programs, said the journey to educate the public about how electricity markets work and the benefits of real-time pricing has been a slow one.

Ahmad Faruqi, a principal at the Brattle Group who closely follows dynamic pricing programs, said the reasons for that are varied.

There's utility industry inertia. There's political apprehension -- the probability that consumers will benefit is outweighed by the slight chance a few will get burned. Marketing budgets are limited. And many consumers don't think the programs will pay off -- at least enough to justify enrolling, Faruqi said.

Such was the case for Mike Rosen, a teacher in his early 40s who lives in the Chicago suburb of Elmhurst.

"There was a healthy dose of skepticism, initially," said Rosen, who saw the real-time pricing plan advertised in a ComEd bill insert. But after about a year in the program, he has saved as much as 20 percent a month with little effort.

"I've never not saved money," Rosen said. "And [the transition] was absolutely seamless."

The real-time pricing plans in Illinois also face another headwind. A competitive electric market and widespread switching by entire municipalities away from incumbent utilities to alternative suppliers has made an already complex issue that much tougher for consumers to

"But we have found that when we teach people, they understand the concept of variable pricing and the importance of shifting their consumption off peak," she said.

### **System steers utilities away from 'peaking' plants**

Dynamic pricing refers to charging different electricity rates at different times of day to reflect varying costs. The concept is similar to other goods and services. Hotels and airlines have lower rates during off-peak periods. Moviegoers save with afternoon matinees. Even professional sports now charge lower ticket prices for less desirable matchups.

The goal in the utility business is not just helping customers cut their bills but eliminating the need for expensive "peaking" plants that may run only a few days a year.

That was the motivation in Illinois, where ComEd began a real-time pricing pilot in 2003. A few years later, the state Legislature passed a bill requiring utilities that serve more than 100,000 customers to offer real-time electricity prices.

A third-party analysis of the programs and review by the Illinois Commerce Commission provided the approval for Elevate Energy (formerly CNT Energy) to continue marketing real-time pricing plans.

The programs require customers to commit for at least a year and pay an administrative fee, which they expect to more than recoup in savings. They are provided new meters at no cost that can measure hourly electricity use.

Participants can see forecasts for the next day's power prices online and get access to data to track hourly electricity use and prices so they can analyze usage patterns and increase savings.

In the Chicago area, if prices are expected to climb higher than 14 cents per kilowatt-hour, customers get a high-price alert -- an email, text or tweet notifying them to avoid running up their bills.

Such an instance occurred with last month's polar vortex, which brought bitter cold to the upper Midwest and led to record energy use and calls for conservation in the PJM Interconnection.

For a few hours on the morning of Jan. 7, real-time prices in ComEd's service area -- normally a few cents per kilowatt-hour -- soared to near \$2.

The spike got the attention of real-time pricing customers.

"We shut the house down," Sabatino joked. But the spike hasn't done anything to lessen her zeal for real-time prices. "Over the course of the program, our savings have been such that they easily offset any spikes," she said.

### **Risks and surprises**

David Kolata, executive director of the Citizens Utility Board, a consumer advocacy group in Illinois, is also a real-time pricing customer and has reduced his electricity bills by about 14 percent. January was the lone instance when his electric bill was higher than it would have been on ComEd's standard rate, he said.

While rare, such volatility illustrates the risk involved and is a reason why Kolata believes real-time pricing should remain an opt-in program for customers -- for now.

That said, CUB is a big supporter of dynamic pricing and would like to see more options available and more customers taking advantage, Kolata said.

And not everyone needs to participate for the program to be effective at reducing peak load, he said. If just 5 to 10 percent of consumers enrolled in plans to reduce peak energy use, everyone would benefit by avoiding the need for generation resources.

"So much of our power costs are determined by 20 or 30 hours of the year," he said.

A more typical winter day yesterday found real-time pricing customers in the Chicago area paying about 6.5 cents per kWh at 11 a.m. The forecast called for prices to be 5 cents later in the afternoon before jumping to 10 cents at 6 p.m., when masses returned home from work, dialed up the heat and turned on televisions and lamps.

Throughout the ComEd and Ameren Illinois territories, Elevate Energy said current average savings are about 15 percent on the energy supply part of their bills. Those who enrolled when the program began seven years ago have saved about 25 percent.

A ticker on the home page of Ameren's real-time pricing program, Power Smart Pricing, quantifies the benefits in more real terms. It claims to have saved consumers \$9.3 million -- and counting -- since the program began.

In addition to consumers saving money by programming appliances to run overnight, another small but growing group of customers has also found nighttime power prices to its liking.

"I can tell you our electric vehicle owners are quite happy," Evans said.

### More options

Looking ahead, the Brattle Group's Faruqi is among those who believe dynamic pricing can provide billions of dollars in benefits. He expects those benefits to increasingly be realized as smart grid infrastructure continues to roll out, eliminating remaining technological barriers, and consumers, utilities and regulators become more comfortable with the idea of variable rates, whether it's only during the weekdays of summer months or year-round.

And, he said, there are additional benefits to be realized, such as helping integrate more intermittent solar and wind power.

While real-time pricing plans offer the greatest rewards -- and risks -- and are unlikely to be widely introduced anytime soon, other utility programs aimed at shaving peak energy could become models for the industry, Faruqi said.

Those include Pepco Holdings Inc. and Baltimore Gas and Electric Co. programs on the East Coast that provide automatic bill credits for customers that reduce energy use during critical periods of peak demand.

And Oklahoma Gas & Electric Co.'s SmartHours price plan allows customers to choose variable power prices during peak hours on summer weekdays. And to win over any skeptics, the utility promises to credit customers' accounts if they end up paying more for electricity during the first year of participation than they would under the standard price plan.

"There's fear that has to be overcome through more careful product design," Faruqi said. "But when people see that they're paying more than they should be paying, you'll have a popular movement."

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