



Circuit City

Say hello to real-time pricing, a way to cut electricity costs and protect the earth at the same time.

By Ruth Ford

Talking to Peter Funk is not for the faint of heart. For more than 30 years, Funk, an attorney and former co-op board president, has labored in the vineyard of energy consumption and conservation, soaking up the lexicon of electricity use, reuse, transmission, and distribution, and he is the first to admit that talking to him, is, well, a little intense. As he puts it: "I'm like the guy you meet at a party who keeps on talking."

But these days, Funk's fellow cooperators have a reason to appreciate the lawyer's loquacity. After three years of negotiating with state and city officials, Funk, a resident of the 48-unit co-op at 322 Central Park West, has signed up his property to be the first in the city to save money by using its electricity during the cheapest times of the day.

Now the cooperators in Funk's building save money every time they reduce their energy use during the hours of peak

demand – when the dirtiest power plants are on-line and the cost of electricity is highest – a change in habit that can result in a savings of thousands of dollars a year.

Funk calls it the new paradigm – paying for electricity based on time of use. Just as it's cheaper to use your phone at night and on weekends, it's cheaper for residents of Funk's co-op to switch their electricity use to the evening and the morning. In the first three-and-a-half months of the program, the building shaved \$6,000 off its annual \$93,000 electric bill.

Points out Funk: "By giving people lower energy prices in certain time periods, we are incentivizing them to move to using electricity in lower price periods, so it reduces the peak demand. And the peak demand is what makes the high prices."

The philosophy behind the program, known as time-of-use or real-time pricing, is to encourage people to break bad habits by rewarding them for developing good

habits, says Funk. "The benefits are enormous: you don't have to build as many power plants. You don't have to spend as much on upgrades on transmission and distribution lines, and you don't have to import as much oil."

Call it trifecta of energy conservation: reducing usage, cutting costs, and protecting the earth, all at the same time.

WAVE OF THE FUTURE

For co-op boards, Funk believes that real-time pricing is the wave of the future. After all, how much of a co-op's bottom line costs can you reduce? "You can't affect taxes. You may be able to reduce your mortgage," labor costs aren't going down, so "one of the areas that you can address is the energy area," says the former Central Park West board president.

The question is, can real-time – or time-of-use – pricing work for other co-ops? Funk and his fellow energy advocates

believe it can, and they are on a campaign to spread the word and convert more to the program. It's an uphill battle, they readily admit, but one that's worth the effort.

So how does it all work? Right now, most residential consumers of electricity pay a flat rate for their electricity, about 19 cents per kilowatt hour. With real-time pricing, they can pay as low as 11 cents per kilowatt hour and as high as 37 cents during hours of peak demand. By linking people's energy use directly to the ebbs and flows on the New York state electricity grid, most people do the obvious thing – switch their energy usage to cheaper times of the day.

While Funk knew all about the savings that industrial and commercial companies enjoyed by tweaking their energy consumption on an hourly basis, the idea of letting residential customers do the same didn't come about until New York State deregulated its energy market in 1997-1998. All of a sudden, there was a free-for-all, with tariff rates rising and falling, new energy service companies offering to supply electricity, and energy conservationists looking to tie all the pieces together.

For Funk, the dots started to connect after an energy seminar hosted by the New York Council of Cooperatives & Condominiums in 2001. His board had already done what it could to reduce energy costs in the building, installing submetering in the 1980s and using both gas and oil to supply its heat. But Funk knew there was more the building could do. It was after the seminar that the former board president met Lewis Kwit. As president of the energy consulting firm, Energy Investment Systems, and a one-time deputy director of energy at the Department of City Planning in the Beame administration, he was anxious to bring the savings that residents in Seattle and Florida were enjoying to the people of New York.

The two men began talking about different things that could be done to help residential customers take advantage of lower electricity rates, and, then, they agreed on a pilot program for real-time pricing in Funk's building. By using Kwit's contacts at the New York State Energy Research and Development Authority (NYSERDA) – who were pushing a comprehensive energy management program state-wide – and Funk's understanding of tariffs and pricing, the two men were convinced they could realize significant savings for Funk's building with real-time pricing. But it

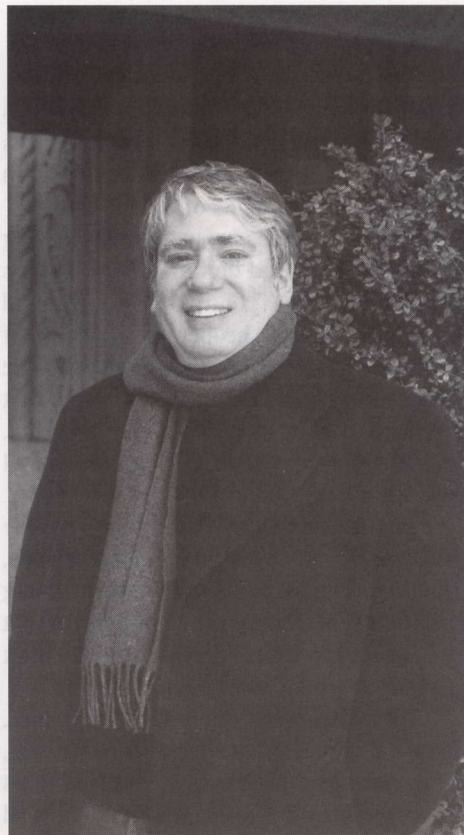


PHOTOGRAPHS BY BIRGIT POHL

Funk: Waiting for the "ah-ha!" moment.

would be an uphill battle.

First, they began lobbying the Public Service Commission, which oversees the energy market. Then, they talked with NYSERDA about financial help in installing advanced interval submeters in Funk's building to more closely track residential energy use. They met with Con Edison officials to develop a pricing sys-



Kwit: as hours vary, so do prices.

tem. That was followed by the really hard part, explaining the process to the co-op residents and convincing them that this was the right thing to do.

"We were very methodical, very patient," recalls Funk. "We did diagrams, had presentations." Fliers were sent out, showing residents the times of day when the building used more and less electricity, diagrams drawn, charts drafted. Slowly the concept of real-time pricing began to sink in for the residents.

The "ah-ha!" moment came at a cocktail party in the Funks' apartment. Word had spread about the new billing program and the evening was lively. Ellen Zeifer, Funk's wife, recalls a sizeable crowd in their apartment – residents keen to translate the esoteric idea of managing electricity use into the nuts-and-bolts of cost-savings. Then, one of the residents connected the dots out loud: so, if she did her laundry in the morning and ran her dryer before 1 P.M., she could lower her electricity costs and see savings on her bill? Demonstrably, replied Funk. The idea clicked. One by one, the residents signed off on the program.

THE ELECTRIC SLIDE

And so the work began. In 2002, the co-op installed a master meter in the building to track the building's electricity use every hour. With NYSERDA footing half of the \$4,000 cost of the new master meter, the board was able to begin charting the building's overall energy demand. After a year of profiling energy use, in March 2003 the board took the next step by installing

advanced interval submeters to track individual usage in each apartment. The meters keep track of each unit's energy use and demand in 15-minute intervals.

The next step was to marry the information on the master meter, which tracked energy use in the building, with each of the advanced interval submeters, which tracked use in each apartment, to create a pricing system that would allow the residents to take full advantage of the demands on the state's electric grid.

For help, Funk and Kwit turned to Gulf Power, an energy company based in north-east Florida that had already started a time-of-use program with residential customers in the mid-1990s. Kwit and Brian White of Gulf Power modeled a pricing program on 322 Central Park West's energy use and the hourly cost of electricity in New York State. The billing system is broken down into three parts, corresponding to the building's low, medium, and high or peak demand periods.

There is the low rate: 10 P.M. to 10 A.M., when residents are charged 11 cents a kilowatt hour. There is the medium rate: 10 A.M. to 3 P.M., when residents are charged 18 cents per kilowatt hour. And there is the high or peak rate: 3 to 9 P.M., when residents are charged 37 cents per hour. From 9 to 10 P.M., the rate drops back to the medium rate, 18 cents per kilowatt hour.

While it will take up to two years to accurately track how much money the building is saving on real-time pricing, already the residents are changing their energy habits. In the first three months of the submeter installation, the residents cut 6 percent off the total electric bill for the building, a saving just shy of \$6,000, from an overall bill of \$93,000.

The education process is ongoing. The co-op board and Kwit and Gulf Power are still tweaking the pricing, trying to lower the cost even further in times of low demand, and raise it higher during times of peak demand, and Funk has been careful to keep everyone in the building apprised of the changes.

"We've sent out a number of mailings. I've talked to people in the building. We'll arrange to have an explanatory sheet of paper under everyone's door," and the building is planning another event in the lobby, where people can come by and talk about rates. "We're hoping we can reduce our total energy bill by a good 10 percent. Even if we reduce by only 5 percent, I would consider it a great success."

THE NEW PARADIGM

Already other co-op board directors are watching the success of 322 Central Park West as a prelude to introducing real-time pricing in their own building. Greg Carlson, president of the Federation of New York Housing Cooperatives & Condominiums and a member of the Coalition to Prevent Blackouts, is a convert.

"This is going to be the future of how we are going to be billed for electricity," maintains Carlson, who has been one of a handful of co-op advocates pushing Con Edison and the Public Service Commission to institute real-time pricing for all residential customers. "Until we build more transmission lines and power plants, which no one wants, conservation is key if we are going to prevent blackouts."

Last summer, Carlson's co-op shut down all its non-essential electricity output for four days in the wake of the blackout on August 14, in response to a request from Con Edison to reduce its electricity output while the utility worked to get everyone in the city back on-line. By turning off roof fans, shutting down half the elevators, and asking residents to curtail air conditioning use between 10 A.M. and 4:30 P.M. for four days after the blackout, the co-op saved more than \$1,000 off its electricity bill. Just imagine what they could save if they were on real-time pricing, and could continually be tweaking their energy use as demand and costs of electricity rise and fall every hour.

And this past June, the co-op owners of Columbus Park Towers at 100 West 94th Street took their own baby steps toward real-time pricing, installing advanced interval submeters so they could track their energy usage in each apartment. The results have been telling, reports the president, James Ryan. Where once everyone was charged an electricity rate as part of their maintenance, based on the square footage of the individual apartment, now, for the first time, people were paying only for what they used. Some bills shot up as high as \$300, and some dropped to as low as \$30.

And anyone who was concerned could just look at the meter, taking 15-minute snapshots of the energy use in the apartment, to change his or her habits. As William Jacquette, a long-time resident of the building and a member of the board puts it: "The submeter tells you at any

given time of the day just what you are consuming and the wattage. And you can turn off appliances or turn out lights and see the drop on the meter."

LOOKING TO THE FUTURE

Ron Giovanni, a consultant with TRC Solutions, an energy consulting company, is working with families in Westchester to help them take advantage of time-of-use pricing (www.westchestertodpilot.com), a variation of real-time pricing. Right now, those families in the pilot project can go on-line and look at the cost of buying energy at different times of the day and then schedule their electricity use to the cheapest periods, like setting times to turn the dishwasher on at 9 P.M. "You can see how you can create your own savings, when to buy energy, and how energy is cheaper at certain increments of the day," observes Giovanni. "It's really on the cutting edge."

While the pilot project being conducted now is only for Westchester residents, the hope is to get residential customers across the state interested in time-of-use pricing, says Giovanni, who can be reached at (212) 221-7822, or rgiovanni@trcsolutions.com. To contact NYSERDA for financial help in installing new meters to take advantage of real-time pricing, residents can call (518) 862-1090, or e-mail questions to residential@nyserdera.org. Ryan Moore, a spokesman for NYSERDA, says it's been NYSERDA's experience that residents cut 18 to 26 percent off their electricity bill when they install advanced interval submeters.

Take the next step and sign up for real-time pricing, and the savings can multiply even further, maintains Kwit, whose company can be reached at (212) 966-6641. "If people understand that electric prices vary literally on an hourly basis, they are going to be more sensitive to when they are going to use electricity. And this variable pricing model allows them to save money, if they change their behavior."

The environmental benefits are great. People like Peter Funk "are pioneers," says Kwit. "If we can get people to shift their usage based on the laws of economics – if it costs more for them in the afternoon to use electricity than it does in the morning – you can lower prices, lessen pollution and potentially have fewer blackouts."