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## Naperville prepares to roll out 'smart' electricity meters

### New meters can measure how much electricity is being used -- and when

By Gerry Smith

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In Naperville, the future of electricity use is coming.

Beginning next year, the city will install thousands of smart meters, wireless devices that allow utilities and customers to monitor electricity use, with the goal of reducing outages, lowering energy bills and shrinking carbon footprints.

But as smart meters have been unveiled across the country this year, some have questioned their intelligence.

Some have complained that utilities are passing the costs of the new technology to customers. Others worry about privacy implications of devices that collect massive amounts of intimate customer data. Still others are not convinced that busy customers will take the time to use them.

Naperville, which runs its own utility, plans to install 57,000 smart meters over the next three years in the homes of customers who volunteer. In October, the city was the only Illinois municipality selected for a smart-grid grant from the U.S. Department of Energy. Early this month, the Naperville City Council agreed to match the \$11 million federal grant by selling bonds.

Other utilities are rolling out smart meters in the Chicago region. ComEd has begun installing 130,000 smart meters. The devices could become ubiquitous in American households. The number of smart meters in the United States is projected to rise to 13.6 million next year from 8 million in 2009, and to more than 33 million by 2011, according to the research company Park Associates.

Unlike traditional electricity meters, smart meters can measure how much energy a customers uses and when it is being used. That allows utilities to charge varying prices, based on season and time of day, and to reward customers who adjust their electricity use accordingly.

For example, on steamy summer afternoons, when wholesale electricity prices spike with peak demand, customers could use smart meters to set new, smart appliances to run at night when demand -- and prices -- are lower. Naperville officials estimate that such measures could eventually save customers 5 percent



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to 15 percent. Smoothing out demand and improving efficiency, smart meters are an integral part of a more reliable smart grid. In the future, a smart grid could charge electric cars and absorb more intermittent energy sources such as wind and solar energy. A more efficient energy grid could lead utilities to build fewer power plants.

Consumer advocates agreed that smart meters hold great promise, but they are monitoring their deployment closely.

"We think a well-designed smart grid can be good for consumers," said David Kolata, director of the Chicago-based Citizens Utility Board, "but there are some policy questions to work through."

Among them is how customers are billed. Smart meters are supposed to make billing more accurate, but more than 100 frustrated Pacific Gas & Electric customers packed a hearing in Fresno, Calif., in October, alleging the utility's smart meters caused their bills to spike unnecessarily.

Pacific Gas & Electric attributed the increase to summer heat and to rate increases approved by the California Public Utilities Commission. The utility was forced by a lawsuit to suspend its deployment of smart meters among its residential customers.

Naperville has yet to develop a rate structure for pricing energy by the hour, but the city's public utilities director, Alan Poole, said he was confident the city could service its debt without raising electricity rates. ComEd officials said customers with smart meters will see a \$5-a-year increase starting in 2010 to fund the utility's \$69 million program.

Meanwhile, others worry about the wide array of personal data collected by smart meters. Leslie Harris, president and CEO of the Center for Democracy and Technology, said the devices present a set of unresolved privacy issues by collecting 750 to 3,000 data points each month.

These data, she said, can include detailed information on when customers eat, work and sleep and could fall into the hands of advertisers, marketers, law enforcement agents or criminals. Harris said utilities need a more public airing of what data they collect, why they collect it and how long they will keep it. "For them to say 'Trust us; we're not going to share data in identifiable form' is really not good enough," she said. "They have to have some mindfulness that they are now in the personal-data collection business."

Naperville officials say they have taken measures to ensure customer privacy, such as not releasing individual data to outside parties and requiring signed court orders before releasing data to law enforcement.

"Privacy of data is going to be a very important piece we'll have to work out to make sure we're following the law without giving out people's private information," said Mark Curran, Naperville's assistant director of public utilities.

For Naperville residents who join the city's smart meter program, the only upfront costs will be the \$100 price of a home-area display unit, which shows current energy use from appliances. Poole said the city may develop a cost-sharing program to give residents incentive to buy the units.

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