



ComEd Smart Meter Program

Bellwood, Berwyn, Broadview, Forest Park, Hillside, Maywood, Melrose Park, Oak Park, River Forest, Humboldt Park - Cook County

The problem

Commonwealth Edison (ComEd) has been supplying Illinois residents with reliable energy for many years, but has seen increasing failures of its infrastructure recently. This demonstrates that the current energy infrastructure is insufficient to handle energy challenges of the future. Supplying reliable, affordable and clean electricity requires a smarter and more comprehensive grid system. Illinois communities experience power disruptions and outage levels that are far above the national average costing the state \$6-11 billion annually (CNT, 2009).

The solution

With rising energy prices, increased consumption, and a push to mitigate human-induced climate change, an investment on the smart metering technology and offering smart rates to consumers can help address energy challenges. Smart metering was initiated as the first step towards upgrading ComEd's infrastructure to a Smart Grid system that also includes a combination of diversified energy sources, efficient infrastructure improvements and increased information provided to consumers on energy usage. Other technologies incorporated into the Smart Meter system include: automation of the distribution system to enhance reliability and reduce customer interruptions; conservation voltage regulation technologies to reduce line losses, that is, the energy wasted when power is moved from power generation plants to homes; and intelligent substation technologies to improve safety and optimize maintenance practices and operational performance.

The process

The Smart Meter Program can be traced back to September 2008 when the Illinois Commerce Commission (ICC) authorized Illinois Smart Grid Collaborative to pilot an Advanced Metering Infrastructure (AMI) program. The collaborative selected ComEd to implement the pilot program and in January 2009, ComEd launched a six-month workshop series to solicit input from key stakeholders to help properly design the pilot. ComEd partnered with the Center for Neighborhood Technology and the Galvin Project, Inc., to design a pilot program that would test the operational and societal effectiveness of a smart metering system

In October 2009, ComEd started deploying smart meters in nine towns serviced by its Maywood operating center, including Bellwood, Berwyn, Broadview, Forest Park, Hillside, Maywood, Melrose Park, Oak Park and River Forest, as well as the Humboldt Park neighborhood in Chicago. These areas were selected because they were representative of the entire ComEd service territory. The footprint in Chicago, bordered by Fullerton, Chicago, Pulaski and Kedzie, was selected based on studies done by the City of Chicago Department of Environment.

The actual testing of the smart meters began in June of 2010 and ended on May 31, 2011. Over 131,000 residences participated in the pilot, of which 8,000 residences were given accurate information on their energy usage to see if that information would influence their decisions to reduce energy costs. The homes were installed with innovative appliances and smart thermostats in to adjust the house temperature during peak periods in order to save energy.

Overview

Smart Meter Program, also called Advanced Metering Infrastructure program, is a comprehensive test of advanced metering technology designed to provide customers with key energy usage data and billing information to help them make more informed decisions about energy use and help them lower energy costs and carbon emissions. Smart Meters provide consumers with reliability and unprecedented control over their electricity.

CMAP Resources

- [Strategy Paper on Climate Change](#)
- [GO TO 2040 Chapter on Livable Communities](#)

GO TO 2040

Recommendation:
Livable Communities -
Manage and conserve water & energy Resources.



Smart Meter installation: It wirelessly transmits usage data to ComEd every 30 minutes.

For more information

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Participants were incentivized to use less energy at peak hours of the day through smart meter rates that offered discounted power rates for off-peak hours. They were educated on how and when to use electricity and encouraged to purchase energy efficient household appliances that would respond to changes in energy supply and price adjustments to save them money.

Initial funding for the pilot came from a \$5 million grant from the American Recovery and Reinvestment Act (ARRA). Additional federal funding was received for integrating solar power with smart metering, dynamic pricing and energy storage in 100 of the residences that participated in the program. Some of the homes installed with solar panels were powered primarily by solar energy. Any extra energy that was not used was put back onto the grid and the AMI consumers received rebate for it. During the pilot, ComEd established a call center at CNT in Chicago, dedicated to serving AMI customers only.

Community considerations

Although the smart meter pilot program was a great success, moving the program forward to construct a state-wide smart metering system has raised a lot of concerns. The main concern stems from ComEd's plan to raise rates by \$3 over the next 10 years to help pay for the construction of the smart grid. The cost of the pilot was shared by all ComEd customers raising a major concern from non AMI customers why they had to pay for a program that they were not part of. Most people are concerned that a statewide program would unfairly pass the cost onto consumers. ComEd has failed to convince the public that the benefits of the smart grid and smart metering systems would be worth the \$3 increase over the long run. A statewide implementation would cost each ComEd residential customer about \$5 per year and non-residential customers with energy usage under 400Kw, about \$10 per year.

Outcomes

The smart meters gave consumers key energy usage data so that they could know what they were spending before the bill arrived in the mail. Most of customers used this information to take smart steps to reduce energy consumption thus saving money. One of the primary goals of the smart meter pilot program was to test both operational and customer benefits. The pilot allowed ComEd to assess the potential operational, environmental and other benefits of installing smart meters for all ComEd customers. They also tested operational efficiencies of remote disconnection and reconnections which can allow them to quickly suspend and restore service when customers move.

The smart meter program provided useful information to ComEd and state policy makers on how the statewide Smart Grid should be developed. ComEd used the outcomes of the pilot to make recommendations to the ICC on how the new technology can transform the delivery of electricity in the state. The pilot also served as a building block for the statewide Smart Grid system that would employ digital technology to deliver electricity to customers reliably and effectively while providing them with unprecedented choices and control.

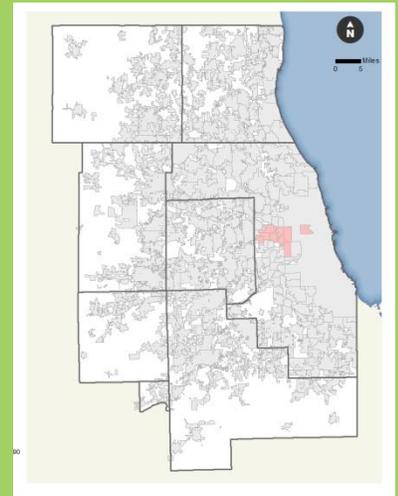
Lessons learned

Although the smart meters provide customers with energy usage information and the power to manage it, they still do not provide the full potential benefits of a full Smart Grid system. For example, they do not automatically notify ComEd if there is an outage. Even though the smart meters can interact with some in-home energy management devices currently on the market, they will not work with such home appliances as dishwashers or air conditioners.

Contact Lindsay Banks (lbanks@cmap.illinois.gov) to submit a case study.

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Location Map:



Additional Resources

- [Empowering Consumers through Modern Electric Grid](#)
- <http://www.cntenergy.org/pricing/comed-smart-meter-program/>
- [ComEd seeks \\$ 175 million AMI federal fund for smart grid](#)
- [Two-year Illinois Smart Grid Collaborative Effort Reaches Completion](#)



131,000 ComEd customers participated in the smart meter program of which 8,000 were placed on special rates plan



Smart meters are more than 99.5% accurate