

The Opt-Out Challenge

By Jeff Evans, Executive Consultant, Black & Veatch

Published in the March/April 2012 issue of Electric Light & Power

Consumers have been realizing the benefits of Automatic Meter Reading (AMR) and Advanced Metering Infrastructure (AMI) systems for nearly two decades. Conservative industry estimates place the number of enabled meters currently installed in the United States at greater than 50 million. Yet, for all of the history associated with AMR and AMI, today utilities are encountering significant resistance to AMI and smart meter projects. This resistance has caught the ear of regulators who are requiring smart meter opt-out provisions.

Consumer resistance centers on issues related to safety, security, and/or privacy concerns and affects utilities planning and those who have already deployed their smart meter programs. Significant research and studies clearly document that smart meter RF transmissions present no harm to health or the environment, yet this is a key concern voiced by consumers. Utilities are implementing physical and cyber security programs to combat the threat of nefarious actions against the smart grid. Utility privacy policies - backed by state laws and regulatory orders - mandate that utilities protect customer privacy. So why are some customers fighting the smart grid so vigorously?

This article outlines the rise of customer resistance to smart meter programs, current and proposed opt-out provisions, the impact of opt-out provisions and proactive measures utilities can take to reduce challenges associated with smart meter opt-out programs.

RISE OF CONSUMER RESISTANCE

In the past, deployments of AMR were completed with little publicity. Consumers were often not aware that an RF transmitting meter had been installed at their house. Today, utilities are enabling and encouraging consumers to take ownership of their usage. Smart meters have become more top of mind because utilities recognize the benefits of implementing smart metering systems -from improving customer satisfaction and enabling operational efficiency, to reducing the cost of energy, to improving energy efficiency. Communicating these benefits to consumers has increased awareness of smart meter implementations.

The influx of smart grid/meter deployments is also raising awareness with consumers. The American Reinvestment and Recovery Act (ARRA) made \$3.4 billion available to utilities for smart meter implementation. However, the funding provided by ARRA only covered a portion of a particular utility's program and utilities are seeking recovery of the non-reimbursed portion of smart meters costs through rate cases with their respective regulators. This has resulted in wide spread perception that smart grid equals higher rates, overshadowing the long-term benefits the infrastructure will provide.

Smart grid infrastructure is not well understood outside of the industry. A lack of consumer knowledge has created tremendous opportunities for a small, yet powerful, contingent to spread misconception and fear. The advent of social media has made it easier for individuals to advocate beliefs to the

masses. While messages are not always substantiated by fact, publication provides credence. This is especially demonstrated in growing public concern in the areas of public health and privacy related to smart grid deployments

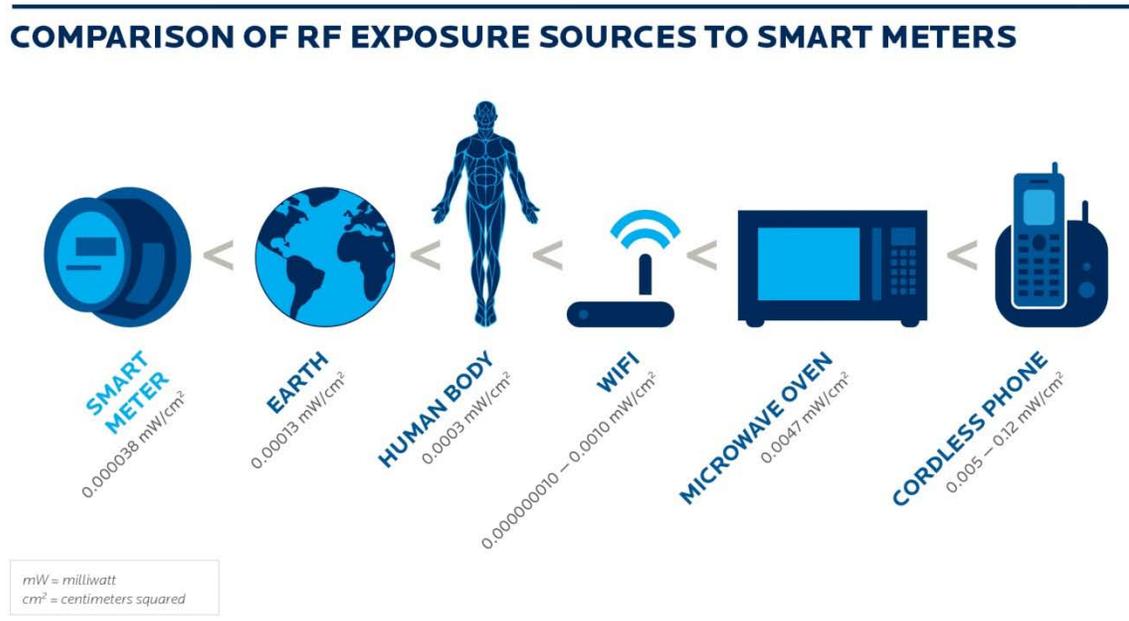
Chief among public health concerns is the belief that RF emissions from wireless smart meter implementations are harmful to human health. This concern is scientifically unfounded and has been addressed by independent analyses and publications (see Table 1).

Table 1

SPONSOR	TITLE/ PUBLICATION DATE
California Council on Science and Technology	Health Impacts of Radio Frequency from Smart Meters (January 2011)
The Economist, Technology Quarterly	Worrying about Wireless (Q3 2011 issue)
Maine Center for Disease Control and Prevention	Executive Summary of Review of Health Issues Related to Smart Meters (November 8, 2010)
Monterey County Health Department	Review of Health Issues Related to Smart Meters (March 2011)
City of Naperville, Naperville Smart Grid Initiative	Smart Meters, Household Equipment, and the General Environment (Pilot 2 RF Emissions Testing - Summary Report v2.0; November 10, 2011)

The magnitude of and permissible exposures associated with RF emissions are limited by the Federal Communications Commission (FCC). FCC limits are based on scientific study and fact. Actual RF emissions from smart meter implementations which have been studied are within permissible exposure levels. In fact, RF emissions from smart meter systems are significantly less than those from common devices such as cordless phones, microwave ovens and the natural RF emissions from the planet Earth. Smart meter RF emissions are even less than what you are exposed to from an individual standing next to you (see Figure 1).

Figure 1



1. Values calculated per 47CFR1.1310 for a typical usage scenario
2. Value for the smart meter exposure is for the exterior of the building and is based on the total exposure from electrical smart meter, gas smart meter, and ZigBee module (without the customer-optional HAN network). Interior exposures would be lower.

Derived from Public Utilities Commission of Nevada Docket No 11-10007, NV Energy filing submitted 12/2/2011

As seen in several utility commission proceedings, protection of personal information from cyber threat or from being sold to a third-party is also a primary concern for consumers. Customers want assurance that data provided to utilities will be protected from cyber threats and won't be provided to a third party without their consent.

Utilities already have privacy policies in place that establish methods for the handling and protection of personal customer data. Such policies also protect the interval usage information collected from a meter and require permission from a customer before releasing usage data to a third party. Many of these policies are mandated via statute or edict by the responsible oversight agencies and apply to smart meter systems.

Customer privacy is further protected based on the scope of data collected at the premise. Smart meters measure whole-house usage information that occurs over time. They do not measure consumption patterns of specific appliances within the home. Without specific, detailed information about customer appliances and customer habits, utilities are not capable of deciphering whole-house usage into individual appliance profiles.

Some utility smart meter programs enable Home Area Networks (HAN). A HAN allows consumers to monitor and control usage within their home and is evolving to include the ability to control appliances such as refrigerators and washer/dryers. This evolution drives further consumer concern about communication of information about personal habits. Utility privacy policies are intended to prohibit capture of HAN data without the permission of the customer.

REGULATORS REACT

As a result of growing consumer concerns, there is a growing surge of state and local agencies requiring utilities to offer opt-out options to customers who refuse to receive AMI meters. Table 2 highlights current state regulatory activity and resulting utility opt-out programs.

Table 2

STATE COMMISSION	REGULATORY ACTIVITY AND UTILITY OPT-OUT PROGRAMS
Maine Public Utilities Commission	<ul style="list-style-type: none"> ■ MPUC requires state’s utilities to implement opt-out programs. ■ Central Maine Power (www.cmpco.com) provides two opt out options (1) installation of an electro-mechanical meter for a one-time charge of \$40 and an ongoing monthly fee of \$12, (2) installation of a smart meter with the internal communications module in non-transmit mode for a one-time charge of \$20 and a monthly fee of \$10.50.
Oregon Public Utility Commission	<ul style="list-style-type: none"> ■ Oregon PUC requires state’s utilities to implement opt-out programs. ■ Portland General Electric provides one opt-out option that allows for the installation of a non-network-based meter for a one-time cost of \$254 and a monthly charge of \$51.
California Public Utilities Commission	<ul style="list-style-type: none"> ■ CPUC has ordered the initiation of a postponement list. Customers who request that a smart meter not be installed are added to this list. ■ On 2/1/2012, the CPUC ordered Pacific Gas & Electric to implement an analog meter opt-out option (application 11-03-014). The CPUC order includes a one-time charge of \$75 and a monthly fee of \$10.
Public Utilities Commission of Nevada	<ul style="list-style-type: none"> ■ PUCN opened a docket considering the implementation of four opt-out alternatives: analog meter, non-AMI digital meter, radio-off AMI meter, and reduced communications AMI meter. ■ NV Energy filed its cost proposal for each option – with one-time costs ranging from \$110 to \$280 and monthly charges ranging from \$0.90 to \$13.30. (Investigation Regarding NV Energy’s Advanced Service Delivery Program aka Smart Meter and its Implementation, 12/28/2011, Docket 11-10007) ■ The PUCN conducted a workshop on January 18, 2012 to discuss the opt-out options and is expected to rule in the near future. ■ NV Energy has also implemented a postponement list.
Other States	<ul style="list-style-type: none"> ■ Michigan Public Service Commission opened case no. U-17000 in January 2012 requiring the investigation of, among other things, opt-out options. ■ Regulators in Vermont and Arizona are informally investigating opt-out options but have not formally initiated dockets.

While not under the jurisdiction of state regulatory authorities, the Cities of Naperville, Illinois and Fort Collins, Colorado are both under pressure to consider opt-out alternatives. The City of Naperville, which allows customers to opt-out of smart meters for a charge (one-time charge of \$68, monthly charge of \$25), recently rejected the inclusion of a non-binding referendum during a future election for the rejection of smart meters. The City of Fort Collins is planning to allow for two opt-out alternatives: analog meter and daily register read only AMI meter. Charges associated with each option have not been determined.

IMPACTS TO CUSTOMERS

The costs to implement opt-out options are significant and could ultimately be incurred by all rate payers. As the opt-out population increases, the anticipated savings from smart meter programs decreases, again resulting in potentially higher rates for customers. In addition, benefits of smart meters associated with reliability and outage response are also compromised with opt-out participation.

Operational cost reductions, such as meter reading costs and truck rolls, decrease as the population of opt-out customers increases. For each meter that opts-out, a utility labor force must be retained and paid for to facilitate the collections process. Additionally, the meter reading solutions, applications, system integration and operations must be maintained for this small number of non-automated meters. Opt-out fees paid by the individual consumers, such as those highlighted in the Maine and Oregon programs, are intended to cover these additional costs.

Results in Maine and Oregon indicate only small number of customers will actually participate when faced with the costs associated with opt-out programs. However, this also presents an additional challenge to the utility. If the number of customers who opt-out is too low, the cost per customer increases significantly. As a result, utilities would need to recover non-covered opt-out costs from the entire rate base during their next general rate case.

TAKE THE INITIATIVE

As demonstrated in the California, Nevada and City of Naperville proceedings, a very small percentage of the consumer population can negatively influence the majority and force regulators to implement opt-out provisions. Short of directly challenging its customers and regulators, utilities should consider executing several steps to reduce the desire for opt-out within its customer base.

Demonstrate Opt-Out Impacts in Business Case

As evidenced by the commission proceedings in Maine, Oregon, and California, and by the leanings of commission proceedings in Nevada and Michigan, it is prudent for utilities to include the potential cost of postponement and/or opt-out in their smart meter business cases. Smart meter business cases assume the elimination of meter reading positions and associated infrastructure (handhelds, meter reading systems).

All facets of opt-out provisions should be considered and accounted for in your business case. For example, one opt-out option requires that analog meters be available for customers who do not want a smart meter. ANSI-certified analog meters are no longer made in North America. Utilities, vendors and the marketplace have long since determined that analog meters represent obsolete technology and

have been replaced by solid state meters. To enable an analog opt-out option, a refurbished analog meter must be used. This adds significant new testing and meter asset management efforts and costs on utility operations.

Several regulatory agencies have implemented postponement policies while investigating potential opt-out provisions. Implementing a postponement list allows consumers to delay installation of a smart meter at their premise. Postponing gives utilities the opportunity to educate customers about the benefits associated with smart meters and allows them to address customer concerns. Postponing is not efficient to a smart meter deployment as utilities realize economies of scale by deploying all meters on a route at once. Skipping a meter requires a return visit to the premise and an incremental cost. But postponing is preferable to opting out.

Educate Your Customers

The implementation of any complex solution that impacts customers in a noticeable way will always create consternation. Smart metering is a complex solution that most consumers don't fully understand. Utilities should communicate with their customers and stakeholders via multiple channels with the intent of educating. Educating your customers can alleviate misperceptions and diminish the fear that fuels resistance to smart grid programs.

Utilities should use their communications channels to provide facts and reduce concern about common issues. Several states and regulatory bodies have studied smart metering and made study results available. Make copies of independent studies and resource materials available via email, web or when talking with consumers at public outreach events.

Communicate utility policy about handling customer-specific information. Tell consumers how the smart grid will be secured. An appropriate level of detail can be communicated to consumers without revealing information that will place security at risk. Let your consumers know that meter transmissions are encrypted, network infrastructure and data centers are hardened, employee actions are managed, and systems are monitored. Utilities are implementing comprehensive cyber security plans and continually evolving security infrastructure and practice to protect against evolving threats. Make consumers aware that your organization is taking security seriously.

Finally, tell consumers when they can expect their new meter and what will happen during the installation process. Inform consumers of the capabilities they will now have as a result of the smart meter program. Let them know how they can manage their energy consumption and lower their utility bills.

Consumers today have greater awareness of utility operations and smart meter deployment plans. But increased awareness does not necessarily mean increased knowledge about the infrastructure. A lack of information provides a breeding ground for rumor, speculation and misconception. Utilities must prepare by developing well thought out business plans that outline the benefits of the smart meter program, as well as the true costs associated with potential opt-out plans. In addition, utilities must prepare, plan and implement comprehensive communication and educational outreach efforts. With

through advanced preparation, utilities can overcome customer resistance and potential challenges related to opt-out programs.

Jeff Evans

Jeff Evans is an Executive Consultant at Black & Veatch. He has 20 years of experience in the utility industry with a primary focus on Smart Grid and AMI solutions. He holds a BS in Mechanical Engineering and an MBA in Marketing and Management & Strategy. Reach him at EvansJ2@BV.com

