U.S. States Intensify Scrutiny of Advanced Meter Program Costs, Putting Deployments at Risk

Consumer Concerns Take Center Stage in Smart Meter Deployment Strategies

Industry Insight

The spread of advanced meters across the U.S. has come a long way, with over half of the nation's 152 million electricity consumers now hooked up to the devices. But further deployment of the technology, seen critical for a more responsive and reliable grid, is at risk amid heightened scrutiny from regulators, who are increasingly bowing to concerns over the costs to consumers.

Dominion Energy Inc.'s 10-year, $6 billion grid transformation program, featuring the installation of the so-called smart meters, was roundly rejected by the Virginia State Corporation Commission in January. The regulator found that the program lacked adequate cost information for the installation of the devices, and that the utility failed to show that the expenses would be prudent. Last spring, a similar fate befell Public Service Company of New Mexico's $121 million plan to roll out the meters amid concerns about the risk of rate hikes and the excessive opt-out fee. Last May, National Grid, Eversource Energy and Unitil were denied authorization for advanced metering deployments after the Massachusetts Department of Public Utilities concluded that it needed to re-examine the customer benefits of the program. Add to the list of failed proposals a $340 million initiative by Kentucky Utilities Co. and Louisville Gas & Electric Co. The Kentucky Public Service Commission echoed the stance of other regulators, saying that the utilities came up short in proving that the benefits of the plan outweigh the costs.

Concerns about the costs and questions about the benefits of the devices have prompted regulators to urge a go-slow approach. The New Hampshire Public Utilities Commission staff called for utilities to provide an opt-in provision, and recommended a strategic, targeted roll out of the technology, and to consider full-scale deployment when a cost-effective case can be made. And last year, Washington state regulators directed utilities to provide an opt-out option for residential customers in response to concerns over safety, privacy, cyber security and customer billing.

U.S. utility investments in advanced meter technology have doubled over the decade even as regulatory scrutiny has intensified and consumers have sounded the alarms over privacy concerns and costs. Utilities say the collection of real-time data from the devices has tremendous benefits. The up-to-the-minute transmission of consumption data from the meters helps utilities balance electric demand, integrate intermittent renewable supplies, minimize or reduce outage durations, and create dynamic rate structures that cut peak time usage and save energy – all benefits that observers expect and demand from what is seen as the modern grid.

Key Takeaways

- More than half of the nation's 152 million electricity customers were hooked up to smart meters at the end of 2017.
- Residential customers represent about 88 percent of advanced meters installed through 2017.
- Utility spending on meter upgrades doubled over the last decade to enhance customer interaction and allow for smart applications.

U.S. Smart Meter Penetration Reaches 50 Percent

The Number of Advanced Meters Has Grown Fourfold since 2010

Almost 90 Percent of Advanced Meters are Found in the Residential Sector

U.S. electric utilities had nearly 79 million advanced meters in 2017, with residential customers accounting for almost 90 percent of the installations. Smart meters accounted for nearly 52 percent of the nation's 152 million electricity meters by the end of 2017, according to the EIA's annual electric power industry report released last December. Smart meters can communicate between electric utilities and customers to support demand response, renewable generation, and to provide outage information to enable quicker service restoration and shorter disruptions. Smart meters automatically record information about customer usage compared to analog meters that are read manually each month. These meters transmit data more frequently – hourly intervals or real-time – through a built-in two-way communication. Real-time data helps utilities balance electric loads and lower outages, and create dynamic rate structures that enable ratepayers to use the information to lower their peak time usage and save energy.

Annual capital investment by major electric utilities, representing about 70 percent of total U.S. demand, almost doubled from 1996 to 2017. The agency noted that spending related to customer accounts and sales dropped, but utilities continue to invest heavily on customer services and information systems to provide better outage communications and outreach tools.
Dayton Power and Light Plans Smart Meters for All Ohio Customers

Dec. 28, 2018 - The Dayton Power and Light Company, a subsidiary of AES Corporation, filed a distribution modernization plan with the Public Utility Commission of Ohio that proposes to invest $576 million in capital projects over the next decade. The company said that plan is consistent with PowerForward, the state’s grid modernization endeavor, which seeks to foster innovation that allows for an enhanced experience for customers. DP&L said the proposal would “begin its digital transformation” by developing the infrastructure necessary to provide smart meters for all customers, installing about 100,000 meters every year.

Kentucky Regulator Denies $340 Million Smart Meter Plans

Aug. 30, 2018 - The Kentucky Public Service Commission rejected proposals by the Kentucky Utilities Co. and Louisville Gas & Electric Co. to deploy smart meters and associated technology throughout their systems, finding that the utilities failed to provide sufficient evidence that the benefits of the advanced metering system proposal outweigh the costs. The utilities estimated the total capital costs of the new systems and cost of deployment to be about $340 million.

Utilities’ Advanced Metering Plans Rejected

May 10, 2018 - The Massachusetts Department of Public Utilities refused to preauthorize customer-facing investments in the grid modernization plans of investor-owned utilities National Grid, Eversource Energy and Unitil, finding that it needs to re-examine the strategies of advanced metering deployment to ensure benefits for ratepayers. Customers would have to shift from basic service to dynamic pricing programs in the competitive supply market to reap the benefits of reduced peak usage. The department said that the benefits such as reduced demand, capacity savings, and participation in dynamic pricing do not justify the costs. The department also noted issues faced by competitive suppliers in offering such pricing products, such as access to customer data, billing restrictions, and inherent risk of customer choice.

Dominion’s $6 Billion Grid Transformation Plan Rejected

Jan. 17 - The Virginia State Corporation Commission turned down a majority of Dominion Energy Inc.’s 10-year, $6 billion grid transformation proposal, finding that the utility had not shown that the costs are prudent. The agency rejected the major elements related to installing smart meters, adding intelligent technology, and grid hardening, observing that such an expensive plan should ensure adequate benefit for the costs that customers will bear in their monthly bills. The agency pointed to inadequate cost information with respect to smart meter related components, and laid out details that the utility should follow when it refiles the plan.

Smart Meter Opt-Out Approved for Tampa Electric Customers

March 5 - The Florida Public Service Commission accepted Tampa Electric Company’s opt-out tariff for customers who wish to retain their existing analog meter instead of a smart meter. The company anticipates about 0.2 percent of customers to opt out of the initiative after reviewing experiences with other utilities that have implemented advanced metering programs. Customers requesting a non-communicating meter will be charged an initial enrollment fee of about $96, along with a monthly fee of nearly $21 for the IT and meter reading related cost. The opt-out provision is expected to be implemented in the third quarter of 2019.

Cost-Effectiveness in Advanced Metering Emphasized

Jan. 31 - The New Hampshire Public Utilities Commission staff, in its grid modernization report, supported the notion of metering that provides a full range of available competitive services, but observed that “the desire for full metering capability needs to be tempered by considerations of cost-effectiveness,” as grid modernization will be implemented gradually. In the short term, interval metering will meet the needs of an evolving grid in many circumstances and is responsive to the commission’s recommendation for a gradual introduction of additional technologies.

Duke Energy Directed to Fast-Track Advanced Metering Rate Structures

Jan. 30 - The North Carolina Utility Commission ordered Duke Energy Corp. to accelerate plans for developing rate structures that would enable customers to use smart meter data to save energy and money. The agency declined Duke’s proposed plan that would take until 2022 to develop the rate design, observing that the company has deployed advanced metering infrastructure for several years, and should have enough information about metering capabilities and customer usage profiles, which can facilitate rate structures on a faster schedule. Last June, the commission directed Duke to file new rate structures within six months, but Duke proposed a plan providing a timeline to finalize the design by July 2022.
Recent Regulatory Actions: West and Central Regions

**IL Court Finds Advanced Metering Data Access Reasonable**

Aug. 16, 2018 - The Seventh Circuit Court of Appeals ruled that data accessed by the Naperville City-owned electric utility through advanced meters constitutes a reasonable search under Illinois Constitution and the Fourth Amendment of the U.S. Constitution. A citizen group, called Naperville Smart Meter Awareness, contended that the data collection could disclose details of resident's actions, violating the federal constitution. The court said that the significant government interests such as providing cheaper power to consumers, encouraging energy efficiency, and supporting grid stability render the city’s search reasonable.

**WA Regulator Directs Utilities to Offer Smart Meter Opt-Out**

April 10, 2018 - The Washington Utilities and Transportation Commission issued (U-180117) a policy statement requiring utilities to file an opt-out tariff with the agency prior to installing any advanced meters in their Washington service territory. The requirement applies to residential customer choice for advanced meter installation in response to concerns over safety, privacy, cyber security and customer billing.

**NM PNM's $121 Million Smart Meter Program Struck Down**

April 11, 2018 - The New Mexico Public Regulation Commission rejected (15-00312-UT) the Public Service Company of New Mexico's proposal to install smart meters due to the potential for rate increases, an excessive opt-out fee, and layoffs of 125 meter reading employees. The commission said that the costs would exceed savings and force a rate increase of at least $5.9 million in the first year to the benefit of shareholders.

**TX More Benefits From Advanced Metering Sought**

July 12, 2018 - The Public Utility Commission of Texas approved (47472) the implementation of a web-based information system called Smart Meter Texas to store retail customers' data in 15-minute intervals and provide authorized stakeholders with secure access to that data, so that they can sell services such as energy efficiency and demand response.

**IN Duke Energy to Charge 25 Percent Less for Smart Meter Opt-Out**

June 31, 2018 - The Indiana Utility Regulatory Commission approved (44963 - NONE) the reduced fees Duke Energy Indiana LLC, a subsidiary of Duke Energy Corporation, may charge residences and businesses that wish to opt out of its AMI program, following an agreement reached with consumer advocates. The settlement slashed the company's originally proposed one-time fee to $75 from nearly $105, and its recurring monthly fee to $17.5 from nearly $28.6. Duke was prompted to create the opt-out program amid customer concerns over data security, data privacy, and health impacts from wireless radio frequency. Duke started deploying AMI meter as the standard meter in its Indiana service area in 2016, expecting to complete an estimated 836,000 meters by mid-2020.

**KS Regulator Launches Investigation into Opt-Out Programs Following Complaints**

July 24, 2018 - The Kansas Corporation Commission opened (19-GIME-012-GIE) a case to examine how state utilities should permit ratepayers to opt out of advanced meter programs as some customers look to ditch the systems amid complaints, ultimately rejected by the agency, that the technology causes health problems, cause fires and threaten an invasion of privacy through inadequate cyber security. The proceeding will discuss the non-advanced meter types that customers prefer, costs associated with the installation and operation of such meters and billing strategies. The case will cover programs by Westar Energy Inc., Kansas Gas and Electric Co., and Kansas City Power & Light Company.

**Upcoming Events**

- **WA UTC Advanced Metering Infrastructure Hearing**
  The Washington Utilities and Transportation Commission will discuss consumer protection and meter-related rules to accommodate the deployment of smart meter technology by regulated utilities. The commission is seeking input on ways to test meter accuracy, certification, remote disconnects and other operating rules. (U-180525)

- **NC UC Advanced Metering Infrastructure Rate Design Deadline**
  The North Carolina Utility Commission is scheduled to receive Duke Energy Carolina’s revised work plan that accelerates the deployment of new rate structures for advanced metering infrastructure, as well as proposed pilot rate designs for residential and small general service. (E-7 Sub 1146)
Industry Voices

Smart Meter Deployment Plans filed by Kentucky Utilities Co. and Louisville Gas & Electric Co. with the Kentucky PSC (2018-00005)

Louisville Gas and Electric and Kentucky Utilities filed an application for a certificate of public convenience and necessity for the full deployment of advanced metering systems across the Kentucky service territories, including gas operations for LG&E, and approval of their proposed opt-out special charges.

AARP

AARP said that about 25 percent of customers already have these meters and the utilities can continue their slow roll out, without extra charges and “moderating the pace of rate increases.” The group also reminded that the KY PSC recently rejected the proposal in a rate case and “nothing has changed since then to make a universal roll-out any more sensible.”

Public Service Company of New Mexico’s Application for Approval of Advanced Metering Infrastructure Project and Ratemaking Principles (15-00312-UT)

PNM’s proposed project would replace the company’s existing electricity consumption and demand meters with smart meters and equipment that would allow PNM to remotely read customers’ meters, thereby eliminating the need to visit customers’ property on a monthly basis, and facilitating new service options.

PRC Utility Division Staff

The staff said that PNM’s arguments for the appropriate legal and regulatory standards have several flaws. For example, PNM considers the main purpose of the New Mexico Public Regulation Commission’s notice of inquiry into time-based rates and smart meters pertains to financial benefits, when it is clear that the technology was being promoted by the federal government and to be considered by states to facilitate energy efficiency through customer participation in time-based rates and peak load reduction and demand response programs. The staff also found that the PNM’s project was not ripe for commission review as lacks concrete plans for time-based rates or demand response, fails to show that the program is a part of a larger grid modernization plan that enables customer choice, and does not address cybersecurity adequately.

New Mexico Attorney General

The AG pointed to uncertainty in benefits with respect to cost savings. PNM initially put forth cost savings of $20.9 for customers on a net present value basis over the 20-year life span of the meters from 2020 through 2039, then revised the estimate to $8.6 million, and later made concessions that it claimed increased the savings to $16.1 million. The cost increases, which show that the program is less favorable than was originally envisioned, will hurt ratepayers while benefitting PNM’s shareholders. The AG estimated 65.7 percent return in equity that profits shareholders, with ratepayers also having to bear a tax gross-up on any return on equity component.