NOVEMBER 2014 | A Landis+Gyr Publication

FutureReady

WHERE THE SMART GRID IS HEADING

PARADIGM SHIFT:
Exploring New Visions for Utility 2.0

Top 5 Concerns of Utility Executives
How the Smart Grid Can Help

Transition to Transactive
It's Already Begun

THE GOING RATE
What's the Future of Utility Rate Structures?

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Distribution is Changing

A Message from Prasanna Venkatesan

The century-old distribution model is changing. Some utilities are dealing with generation uncertainties and rising power costs. Others are struggling with decreasing demand and declining revenues. The emergence of distributed generation and renewables is introducing questions about integration and lost revenue.

As a result, the industry is rethinking traditional business models that compensate utilities for the amount of energy they sell. For one thing, that model is at odds with efforts to improve efficiency and introduce distributed generation. The challenge is constructing a new model that encourages utilities to become service providers, not commodity resellers.

In this issue of Future Ready, we look at utility rate structures and some of the new regulatory approaches being tested in bellwether states such as New York and California. We also discuss the role a transactive energy framework will play in assessing the value of energy services.

Changes to utility business models may be inevitable, but many utility executives rank aging infrastructure as the top priority. Our review of top utility concerns finds a close link between infrastructure, regulatory climate and new challenges to the traditional business model.

Speaking of infrastructure investments, the impact of the American Recovery and Reinvestment Act (ARRA) on smart grid infrastructure is still under review. While initial results are mostly positive, the Electric Power Research Institute (EPRI) estimates there is a need to continue investing upwards of $24 billion a year to keep pace with needed grid modernization.

The one constant is that technology is already making a difference in helping utilities provide better service and efficiently utilize existing assets. There is much more that can be done, and Landis+Gyr looks forward to helping our customers prepare for change and take advantage of new opportunities.

Prasanna Venkatesan

Landis+Gyr, Executive Vice President, Americas

PARADIGM SHIFT:

EXPLORING NEW VISIONS

FOR UTILITY 2.0

The traditional investor-owned electric utility business model is a centralized, vertically integrated monopoly. These utilities provide power to roughly 69 percent of U.S. consumers and earn a return on equity based on capital investments, with costs recovered from the amount of kilowatts used by consumers. Today, that model is at a crossroads, beset by more new challenges than ever in its 100-plus-year history.

The industry is witnessing the rise of a wide range of disruptive forces — distributed generation, electric vehicles, demand response, renewable integration and storage, microgrids and more — all while many utilities are experiencing flat or declining load growth.

Recent research by Accenture reflects the concerns of utility executives about new threats to the existing utility business model. Of greatest concern for utilities is that distributed generation, energy storage and energy efficiency advances will "increase the likelihood of customers using the grid only as a backup resource for peak supply or even migrating off the grid entirely." [1]

So, how do we evolve to the optimal electric system of the future?

"It's a daunting challenge for everybody who has a vested interest in the issue," says Becky Harrison, Chief Executive Officer of GridWise® Alliance, a coalition advocating for the modernization of the nation's electric system. "It's all about change and change is never easy."

The GridWise Alliance is bringing together stakeholder groups to

GRIDWISE ALLIANCE

Grid of the Future Action Plan

explore what the future utility business model might look like in its Grid of the Future Action Plan — a series of prescriptive reports designed to provide a roadmap and recommendations for grid and energy delivery transformation.

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"The utility business model has to change," says Harrison. "When we understand what we're going to expect the grid to do, we'll better understand the implications for that new business model."

Change Drivers

As many utilities across the country begin to experiment with new business models, three states — Hawaii, New York and Massachusetts — are emerging as leaders in developing a process for exploring new regulatory models (California is close). Yet, it's interesting to note that the initiatives in each state are being driven by a unique set of challenges.

Hawaii: Smart Network Operator

Because of its location and the challenges inherent in accessing cost-effective generation, Hawaii has the most expensive energy rates in the country. This is driving greater interest in rooftop solar among consumers, causing operational challenges for utilities.

In fact, the exponential growth of photovoltaic installations in Hawaii has prompted the Hawaii Public Utilities Commission (PUC) to insist on the adoption of a new, more sustainable utility business model. The goal is to transform the utility's role from that of sole electricity source to system integrator — facilitating the integration of renewables and distributed energy resources.

As Hawaii quickly moves to providing grid services by engaging stakeholders in the development of innovative solutions, many view it as a test case for tomorrow's utility — or, as PUC Chair Hermina Morita recently characterized it, Hawaii is sending us "a postcard from the future."[2]

New York: Distributed System Platform Provider

In New York, on the other hand, extreme weather events like Hurricane Sandy have spurred new interest in the benefits of integrating distributed energy onto the grid for increased reliability. To that end, the New York Public Service Commission recently launched a Reforming the Energy Vision (REV) proposal. It is designed to move utilities from a traditional utility model to a distributed system platform provider (DSPP) and to make the regulatory and ratemaking changes needed to support that new model.

The goal is to reduce peak demand and mitigate extreme weather event threats to the distribution system by increasing behind-the-meter resources while also reducing the need for future investments in generators and delivery infrastructure.

The DSPP model will position utilities as service providers that coordinate distribution of electricity produced by hundreds of small generators, with an eye toward increasing energy efficiency and empowering consumer choice.

As they continue to move the utilities from the traditional to a DSPP model, New York's regulators will try to come up with rate mechanisms that encourage consumer involvement in distributed energy resources, such as photovoltaics and other renewables. It's a true paradigm shift, one in which utilities will need to explain and demonstrate the real value of the services they provide.

With its new proposal, New York is attempting to reform the energy vision. "Although not every state will pay attention to what New York is doing, many will," says Ward Camp, Vice President, Regulatory and Governmental Affairs, Landis+Gyr. "The DSPP model moves us away from a commodity-based rate recovery system and toward a services-based system and transactive energy future. Transactive energy is here and continuing to happen."

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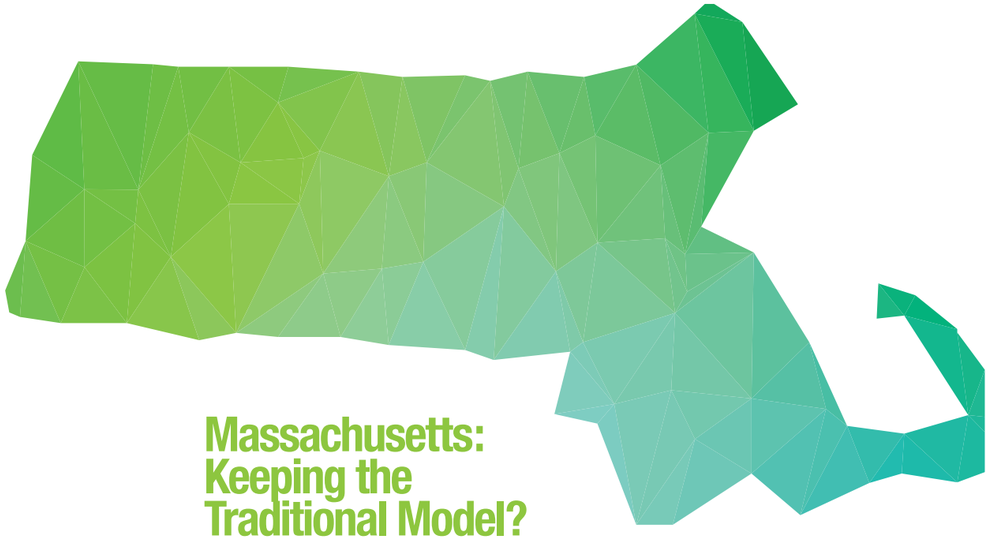

Massachusetts: Keeping the Traditional Model?

In Massachusetts, a deregulated state that is part of the New England Independent System Operator grid, the Department of Public Utilities (DPU) is seeking a solution to enable the state to bring price signals to electricity consumers and achieve three objectives: reduce outages, optimize demand and integrate distributed energy resources. The hope is to retain the core market structure by leveraging advanced metering and to evolve it from basic default rates to dynamic, time-based pricing.

Where Are We Headed?

The initiatives in New York and Hawaii, in particular, are prompting new industry discussions about the utility business model of the future and are helping industry stakeholders answer many questions. How will utilities be compensated in the future for the value proposition they're bringing? What should their role be in managing distributed generation or providing microgrids? Can they become a trusted advisor if distributed energy resources are unregulated?

From reliability concerns and environmental regulations, to the decline in load growth and the continuing growth of solar PV and other distributed generation, the industry faces a "perfect storm" of challenges. In response, the industry will require a new regulatory framework and business model to adapt in an environment of fast-paced changes.

Individual utilities are already exploring new business models. From adding home services to active participation in the solar market, they are working to succeed in this new marketplace. But as the pace of change increases, utilities must collaborate with regulators and all other stakeholders in order to resolve the new business models.

"We're changing the equation," says Harrison. "We have to make sure that we evolve the system in a way that everybody pays their fair share. Right now, there's no agreement about what the final business model will look like."

The hope is that initiatives like the Transitional Action Plan being developed by the GridWise Alliance will help stakeholders begin to determine the steps they'll need to take over the next decade in order to unlock the real value of the grid of the future. ■

"We're changing the equation. We have to make sure that we evolve the system in a way that everybody pays their fair share. Right now, there's no agreement about what the final business model will look like."

– Becky Harrison, CEO of GridWise Alliance

[1] Accenture. "Optimize utility 1.0 by embracing the digital present before taking on utility 2.0," EnergyBiz July-August 2014, p. 19.

[2] "Hawaii's overhaul of the utility business model," Utility Dive, May 7, 2014: http://www.utilitydive.com/news/hawaiis-overhaul-of-the-utility-business-model/259923/

THE AMERICAN RECOVERY AND REINVESTMENT ACT

Beginning in 2009, more than 200 organizations were awarded grants for Smart Grid Investment Grant (SGIG) projects. Of the more than $7.9 billion invested in those projects, $3.4 billion was provided by the American Recovery and Reinvestment Act (ARRA).

AFTER ARRA: WHAT NOW?

It's five years later. What was the impact of the grants?

Most of those original projects are well underway, with 92 percent of the expected

14.2 million smart meter deployments nearly complete, according to a recent DOE progress report.[3] The DOE also reports that deployments of communications and other equipment are already producing positive results, including:

- improvements in reliability
- conservation voltage reductions
- operational efficiencies
- reductions in electricity demand during peak periods

The total positive impact of the projects is difficult to gauge, however, since organizations are only required to report on the specific metrics used when applying for the grants. Utilities may be reaping other unreported benefits from the deployments. Conversely, the projects may provide additional capabilities of which utilities are not yet taking full advantage.

Even allowing for partial reporting, the jury is still out about whether the federal funds helped or hampered a timely smart grid deployment. Becky Harrison, CEO of the GridWise Alliance, an industry coalition advocating for modernization of the U.S. electric system, believes the grants served as a catalyst for progress. "SGIG grants played a significant role in advancing development of the grid and our understanding of how our industry will need to operate the system differently," she says.

In the end, the answer may lie somewhere in the middle. Because they enabled the expansion of several "shovel-ready" projects, the SGIG grants probably resulted in a net positive. Yet, some still believe that because many organizations delayed work while waiting to learn about the grant awards, the ARRA funds may have actually stalled deployment of many AMI systems.

What's Next?

The grants were a strong start, but only the beginning of what must be invested. According to the DOE report,[3] the original $7.9 billion represents only "a relatively small down payment on the hundreds of billions of dollars the electric power industry will need to fully modernize the electric grid over the next several decades."

In its "Estimating the Costs and Benefits of the Smart Grid" report,[4] the Electric Power Research Institute (EPRI) projected that U.S. utility distribution systems will need to invest approximately $17 to $24 billion every year over the next 20 years. Clearly, a commitment on this scale requires the involvement of all stakeholders.

Industry leaders like Bob Shapard, Chairman of Oncor and Chairman of the GridWise Alliance Board of Directors, are optimistic. "The market is deep for investments in high-quality infrastructure," he says. "Much of the investment will be funded through existing tariffs and through efficiency and energy savings."[5] ■

[3] U.S. DOE: "Smart Grid Investment Grant Program," October 2013: https://www.smartgrid.gov/sites/default/files/doc/files/SGIG_progress_report_2013.pdf

[4] "EPRI, "Estimating the Costs and Benefits of the Smart Grid," 2011 Technical Report: http://ipu.msu.edu/programs/MIGrid2011/presentations/pdfs/Reference%20Material%20-%20Estimating%20the%20Costs%20and%20Benefits%20of%20the%20Smart%20Grid.pdf

[5] "Grid Will Advance Even as Stimulus Funds Wane," by Bob Shepard, EnergyBiz, May 19, 2013: http://www.energybiz.com/article/13/05/grid-will-advance-even-stimulus-funds-wane

TRANSITION TO TRANSACTIVE

IT'S ALREADY BEGUN

Transactive energy is here. Now, who will lead the charge for the structural changes needed to enable a two-way distribution grid?

According to Doug Houseman, Vice President, Innovation and Technology at EnerNex and a member of the GridWise Architecture Council (GWAC), transactive energy does not have a traditional advocate in the regulatory process.

"In regions where generation, transmission and distribution interests are split, it might come down to a third-party advocate or outside change agent that has an interest in pushing it forward," says Houseman. "In other markets, the ISO [Independent System Operator] may be the party with the most at stake and desire a change in how future energy transactions are conducted."

For certain, a structure to identify and manage all of the grid's new transaction points will be needed. Changing energy markets and the proliferation of distribution generation are prompting the need for such a discussion.

In this framework, all energy sources are assigned value. Yet, unlike demand response, whose purpose is to encourage consumers to use less energy during peak demand, transactive energy is concerned with ensuring power quality and grid reliability.

"Historically, demand response doesn't analyze a circuit in depth to help balance phase or send pricing signals to help accomplish this," Houseman says.

Transactive energy can provide circuit-level load management and the ability to incentivize both lower and higher energy use, depending on available supply.

The twofold challenge for technology is to manage power quality issues that can arise from two-way power flows, as well as manage pricing for distributed generation. Net metering is not effective in its current

> A structure to identify and manage all of the grid's new transaction points will be needed.

Formed by the U.S. Department of Energy to promote and enable interoperability among the entities that interact with the electric power system, the GWAC has taken the lead role in developing a transactive energy framework.

structure because it pays retail price for electricity without factoring in the other cost components, such as bulk transmission and distribution services, that make up the cost of energy.

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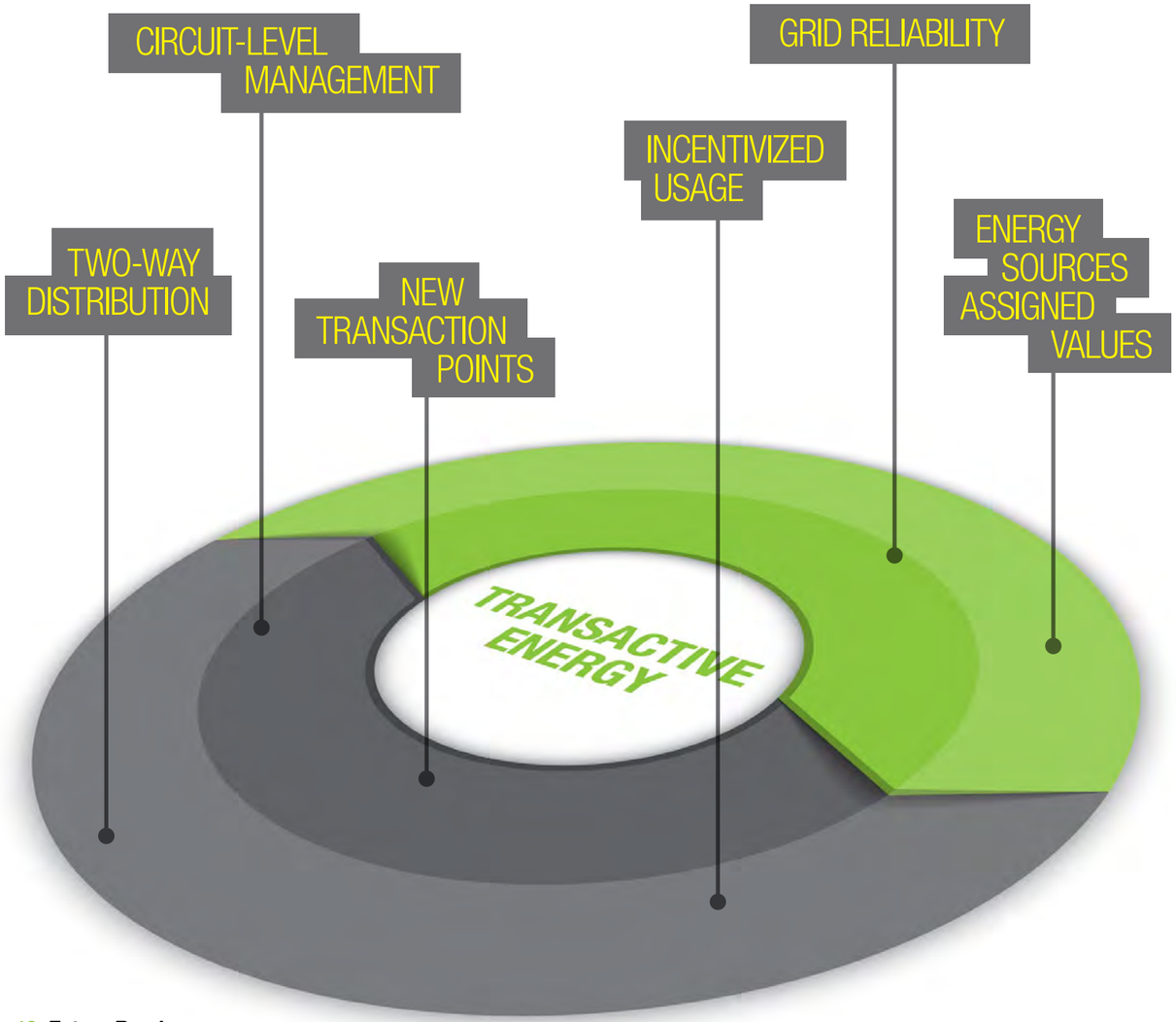
"If you want to reimburse for putting power back on the grid, you should be paying for the energy component only," Houseman says. "A lot of the necessary technology to make this happen is already in place. But there still is the need for a demand response management system at the distribution level that is able to respond to price signals from wholesale markets."

A changing distribution grid presents a number of challenges for utilities. For those with generation, the key concern is figuring out how to get paid. "We are entering a transition that might not allow recovery of capex on throughput. This new system of buying and selling of electricity may require a number of new services from the utility. Further, the utility may increasingly become a platform to enable these new transactions.



Utilities are very interested in knowing how they will be compensated for these services as the transactions displace their previous energy-as-a-commodity role," says Ward Camp, Vice President, Regulatory Affairs, Landis+Gyr.

"It's starting to happen. We are already seeing movement away from a commodity-based model. The rate payer is becoming a customer," Camp says. "There are a lot more choices for consumers, and certainly the main choice is buying or not buying energy. It will be a two-way decision." ■

Selling Services in Response to Lower Energy Sales

Reliability. Consumer tolerance for outages has decreased as reliance on electrically powered devices has risen. Ensuring reliable power is a marketable consumer service.

Control. Comfort has value and pricing can reflect that. Sometimes comfort, specifically energy use for heating and cooling, will cost more but be worth it to a consumer.

Infrastructure. In addition to connection fees, utilities may recoup costs with service fees for sales, installation, monitoring or control of heavy appliances and other equipment.

Energy efficiency. Many utilities are providing services such as load control and energy audits. In the future, they may charge to give consumers more direct control over energy use.

Top 5 Concerns of Utility Executives:

How the Smart Grid Can Help

When utility executives are asked to list their top concerns for the industry, their replies don't seem to change much from year to year. The difference of opinion comes in the priority ranking of these concerns.

1. Aging Infrastructure

Questions about future workforce, generation constraints and regulatory issues have ranked near the top over the last decade. But one area of concern across the country stands out for how closely linked it is to many of the problems facing utilities: aging infrastructure. In its "State of the Electric Utility" report published earlier this year, Utility Dive found that 48 percent of the 500 utility executives surveyed considered old infrastructure to be one of the three most pressing challenges facing the industry. Its score was the highest of any issue in the survey.

The problem of aging assets is connected to other industry challenges — such as flat demand growth, distributed generation and efficiency mandates — because those changes impact the revenue available to upgrade infrastructure. That is driving angst over the commodity-based regulatory model which in most cases assumes utilities will cover the cost of infrastructure by selling more electricity at a flat rate.

2. Regulatory Climate

"Right behind infrastructure is the concern that the current regulatory structure has not kept pace with industry change. Both concerns are very much related," says Ward Camp, Vice President, Regulatory Affairs at Landis+Gyr.

Regulatory policy is the primary driver for how the industry will evolve

Regulatory concerns are often an equal blend of the time it takes to settle issues and the models used to determine cost recovery and asset depreciation. While there are varying state-level regulations, the standard model requires that regulated utilities recover capital expenditures from a fixed rate on energy sales. Decreasing volume — whether from lower market demand or distributed energy resources — makes it difficult for utilities to recover costs, let alone attract investment.

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Top Utility Concerns

Doug Houseman, Vice President of Innovation and Technology at EnerNex, believes regulatory policy is the primary driver for how the industry will evolve. "Utilities can only do what they are allowed to do," he says. "It's been a demand-following, asset heavy industry with long life cycles on those assets. A transition to a supply-following industry will require utilities to be able to react more quickly to a changing market."

And this goes beyond changes in ratemaking to a realization that today's technology is digital, not analog, requiring more frequent upgrades and shorter depreciation schedules.

"We're infamous for taking two or three years for a rate case to get through the process," says Becky Harrison, CEO of GridWise Alliance. "So, if it takes five or six years to deploy technology, you may already be behind where you need to be."

3. Growing Adoption of Distributed Energy Resources

If the need to upgrade infrastructure is a universal challenge, other problems are more regional in nature. Certainly, there are many state and regional differences concerning the energy market, regulatory models and load growth. But a growing difference is also apparent in the adoption of distributed generation and renewables.

Harrison says that states that have increasing concentrations of rooftop solar — such as Hawaii, Arizona and California — are currently working through the load balancing and energy pricing issues that two-way power flows can cause.

"The value proposition for utilities is changing. It's not just putting kW through the grid. It's coordinating a platform to enable two-way power flows and expanding services to consumers. That's a challenge that involves a lot of players."

– Becky Harrison, CEO of GridWise Alliance

Managing load fluctuations and grid safety is a big part of that equation, as is the question of who will manage and maintain microgrids as they become more prevalent.

"We may end up with increased outsourcing of generation — distributed energy resources, microgrids — to private investment parties, but it's also likely utilities and third parties will have a shared investment in these resources," says Camp.

4. Reliability

Then there's the question of reliability, which is harder to manage in areas that are susceptible to large storms or with peak demand constraints. Certainly, infrastructure plays a critical role in ensuring that the lights turn on, but so does the ability to effectively balance and manage loads.

"All consumers really care about is reliability, as long as costs stay reasonable," says Harrison. "They aren't interested in the magic behind the light switch. And the challenge is funding the long-term costs of the changes that need to take place without surprising the consumer."

5. Flat Load Growth and Generation Constraints

The issue of flat or declining demand for power is somewhat regionally biased. While overall load growth is predicted to increase over the next 20 years, some regions have experienced declines based on economic and population trends.

"Load is still growing in parts of the country, but it's flat in others parts due to a lot of factors. That's forcing utilities to ask questions about how to stay viable," Harrison says.

More important for some utilities is the impact on supply from traditional generation by pending coal plant retirements and renewable portfolio standards. While some regions, like the Pacific Northwest and parts of the Midwest, boast ample energy supplies and access to hydro, wind and solar resources, neighboring states still sell coal-fired generation into those regions, making the impact of plant retirements everyone's concern.

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How Smart Grid Technology Can Help

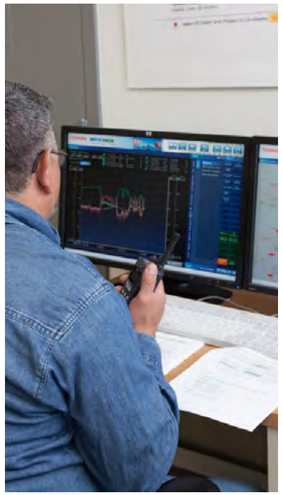
Smart grid technology promises to play an important role in helping utilities address future challenges. Today, data from meter and sensor networks provides a picture of what's happening on the grid at any given moment. Coupled with advanced analytics, this view of the grid goes beyond the substation to provide details such as end-of-line voltage, transformer loading and power quality across the grid. Energy management systems can also use this data for managing the integration of microgrids and energy storage.

"The good news is that this transformation has already started," says Houseman. But he believes the monitoring and control capabilities will need to become even more refined to protect power quality and grid stability as distributed generation and microgrids become more prevalent.

There is also a gap in knowledge about how to operate the new technology. Workforce concerns expressed by many utilities go beyond pending retirements. Very soon, they'll need to recruit or train workers capable of delivering a new set of services and managing unfamiliar infrastructure and technology. This is especially true for consumer services not previously delivered by the utility.

And of course, new technology also means more opportunity for data intrusion. Although cybersecurity isn't at the top of the priority list, it's still a concern for utilities.

"It's always a concern of someone at the utility, and certainly at a broader level as distribution networks become more interconnected and interdependent," Camp says.



While top industry challenges vary by region, there is enough interdependency that the priorities will need to be addressed nationally, rather than state-by-state. This will involve cooperation and commitment from policy makers and regulators at all levels.

"If we come to a common understanding about what we expect of the grid and what it needs to do," says Harrison, "we can determine what needs to happen to move forward." ■

The Going Rate

What's the Future of Utility Rate Structures?

While technology has greatly evolved in the last two decades, utility rate structures have not kept pace. Utilities still recover costs for their infrastructure and capital expenditures based on a volumetric rate.

This worked well when load growth was a given. Now, a wide range of factors is impacting both load growth and the entire utility rate structure.

The ways in which U.S. regulators are responding to these challenges vary by region. States such as New York are exploring services-based systems, while other regions are pushing for fixed variable rate recovery. Overall, however, regulators are now looking at decoupling the link between electricity sales and revenue.

Broadly defined, decoupling means the utility is not dependent on volumetric throughput to recover fixed costs. There are a number of ways to do this, including fixed variable cost recovery. The important point is that fixed costs for providing service aren't negatively impacted by decreased sales. This incentivizes utilities to implement demand reduction and energy efficiency programs.

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Challenges to Load Growth and Utility Rate Structure

Flat demand. For a variety of reasons, demand can no longer be counted on to cover the cost of utilities' capital expenditures. This situation will further cloud the future if it impairs the ability of utilities to borrow capital for new infrastructure upgrade projects.

Reliability challenges. From aging infrastructure to severe weather events, challenges to grid reliability are driving investment in distributed generation, microgrids and other technologies not accounted for by current rate structures.

Changing regulations. Utilities must find new, cleaner sources of energy to meet the requirements of the coming EPA Rule 111(d). This will impact the use — and amortization schedules — of older, high-emitting resources. Capital recovery plans will need flexibility to meet revised usage.

Third-party services. As more customers or communities provide power or localized distribution, rate mechanisms will need to reflect the new role of utilities as a service rather than a commodity.

Automatic or semi-automatic price adjustments between rate cases enable utilities to capture allowed revenues even if sales fluctuate. And service-based structures apply market-rate thinking to performance indicators such as reliability.

All of these changes point to a performance-based ratemaking model — a solution to replace traditional cost-of-service regulation for a higher rate of return when utility performance metrics are higher.

"Performance-based ratemaking (PBR) isn't a completely new model," says Ward Camp, Vice President, Regulatory and Governmental Affairs, Landis+Gyr. "Many aspects of PBR are used throughout North America today. As technology has advanced so that utility performance can be better measured and verified, commissions can feel comfortable knowing that the utility is doing a good job and entitled to rate recovery."

New and creative methods for recovering capital, operations and maintenance costs of grid infrastructure are needed to ensure the success of tomorrow's utility. Utilities must also capitalize on technology investment incentives to ensure a sustainable and versatile smart grid.

Regulators will need to put rates in place that compensate utilities for taking risks.

A performance-based model in which utilities can get rate recovery based on how well they perform, rather than the system's volumetric throughput, may be the accelerator utilities need in order to adapt to a services-driven future. ■

Landis+Gyr Reports Growing Adoption of Smart Grid Networks among Public Power Utilities

Landis+Gyr signed 31 new advanced metering and smart grid network deployment contracts with municipal and cooperative utilities during the first seven months of 2014.

The initial agreements include more than 300,000 metering endpoints. Over time, contract volume and revenue could triple in size, as several customers have the potential to expand their projects. The new business represents a mix of customers migrating from one-way network technology and new customers deploying Gridstream® networks for two-way advanced metering, load and grid management, and consumer engagement capabilities.

The migration path to future-ready communication networks and grid sensors includes both Gridstream RF mesh network technology, offering reliable connectivity to meters, sensors and grid automation devices, and Gridstream PLX, a next generation PLC network that supports 15-minute interval data from every meter. For existing Landis+Gyr customers, migrating is made easier by a common head-end software platform and multi-platform data collectors that support new and legacy endpoints. ■

Landis+Gyr Works with Medical Campus and National Grid on Energy Modernization Study

The Buffalo Niagara Medical Campus, Inc. (BNMC Inc.) announced it will partner with National Grid and Landis+Gyr for an energy study that will develop strategies to improve reliability, sustainability, and the quality of energy used on the Medical Campus.

Landis+Gyr will provide the critical networking infrastructure, grid sensors, software and services necessary for data collection and analysis.

Funded by NYSERDA and National Grid, the study will be conducted by Electric Power Research Institute (EPRI) and will support the continued growth of the Medical Campus and Buffalo Niagara Region by exploring and evaluating distributed and renewable energy sources against the existing distribution system on-and-around the Campus to accomplish targeted grid modernization and to realize grid resiliency. ■

Westar Energy Signs Comprehensive Smart Grid Services Contract

Westar Energy, Inc. has agreed to a comprehensive smart grid infrastructure and services contract with Landis+Gyr to support the utility's grid modernization and consumer choice initiatives.

The initial phase of the agreement involves deployment of 217,000 Gridstream-enabled advanced meters with remote service switch capability and a five-year services contract that includes daily maintenance, cloud services for software and data, and integration support.

"This agreement is part of our commitment to deliver more options to customers for better understanding their energy use, while at the same time improving reliability and operational efficiency in how we deliver that energy," said Greg Greenwood, Senior Vice President, Strategy at Westar Energy. "System and grid infrastructure upgrades help us provide more services to customers and allow us to do that in the most cost effective and reliable way."

The technology deployment will support Westar's existing pre-payment and variable pricing programs, delivery of energy usage information to customers through the internet, and will also provide operational support with outage management and power quality. Remote meter connection capabilities will reduce miles driven by utility personnel, especially for servicing high-transient populations in university communities. ■

Landis+Gyr + Light

The Largest Smart Grid Project in South America

- 1.1 million metering endpoints
- 1.6 million customers by 2018
- 40 percent of customer base
- Intelligent Gridstream network
- Enhanced monitoring

Light, a Brazilian electricity utility, is partnering with Landis+Gyr on the largest smart grid project in South American history. The five-year contract covers the supply, implementation, operation and maintenance of Gridstream for both advanced metering and distribution automation.

The deployment includes 1.1 million metering endpoints and automation of power vaults and reclosers.

The contract is part of Light's ongoing effort to improve the efficiency and reliability of its electricity grid. The Gridstream network offers improved measurement and automated management functions on a single secure platform, and will also facilitate adoption of electric vehicles, and wind and solar micro-generation technologies.

As a result of the project, Light will be able to take advantage of enhanced monitoring and control points throughout its network, helping to reduce commercial losses. In the future the utility also hopes to provide its customers with greater pricing options and more information on their energy consumption patterns.

"The goal of Light is to provide an intelligent electricity network to 1.6 million consumers, equivalent to around 40 percent of our total customer base by 2018," says Paulo Roberto Pinto, President of Light.

According to Marcelo Machado, General Director of Landis+Gyr South America, this is the first major South American deployment of a smart grid and smart metering system and will demonstrate to utilities and consumers firsthand the tangible cost, safety and user-experience benefits that come with smart energy. ■

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