

Utility Sustainability Roundtable 2010



California
Sustainability
Alliance

www.sustainca.org

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Introduction, Goals & Objectives

The California Sustainability Alliance conducted a Utilities Sustainability Roundtable in May 2010 to gather representatives from leading utilities across the nation to share ideas and implementation strategies for sustainability and energy efficiency programs. This document summarizes the dialog between utility participants and is intended to provide other utilities and the general public insight into the sustainability visioning of the nation's leading utilities in sustainability.

PARTICIPANTS

Organization	Name	Title
City of Riverside Public Utilities	MICHAEL BACICH	Sustainability Officer
Austin Energy	JOHN BAKER	Chief Strategy Officer
Sempra Utilities	SHAUN DENTICE	Statewide Partnerships Advisor
Sempra Utilities	MARK GAINES	Director, Customer Programs
Pacific Gas & Electric	LYNNE GALAL	Manager, Green Communities & Innovator Pilot Programs
Southern California Edison	NANCY JENKINS	Manager, Energy Efficiency Partnership Program
ComEd	GEORGE MALEK	Energy Efficiency Portfolio Manager
Sempra Utilities	FRANK SPASARO	Manager, Energy Efficiency Partnerships
Puget Sound Energy	BOB STOLARSKI	Director of Customer Energy Management
Xcel Energy	DEB SUNDIN	Director of Customer Programs
NYSERDA	JOHN WILLIAMS	Director of Energy Analysis
SMUD	VIKKI WOOD	Principal Demand-Side Specialist

The Current State of Utility Energy Efficiency Programs

The design and scope of utility energy efficiency programs varies significantly across the country. Many utilities and regions have made significant investments in energy efficiency for many years and thus, programs are very mature. In other jurisdictions, energy efficiency programs are still fairly young. Most of the participants in this roundtable have mature, long running energy efficiency and renewable programs. All of the participants have ambitious goals and have experienced rapid increases in budgets and goals.

Despite the inevitable differences among utilities and agencies, however, there are some commonalities:

- All utilities are pressured to achieve more energy efficiency, and to do so as cost-effectively as possible. Some energy efficiency goals are mandatory, some are voluntary; some are established by legislation or regulatory mandate, others by the utilities themselves (especially publicly owned utilities (POUs) that must meet the expectations of their customers and constituents, who are also their owners).
- Measurement of energy savings continues to be challenging. Proving the amount of energy savings that may result from educational and marketing programs is difficult. Measuring the impacts of market transformation programs can be difficult. These challenges are significantly complicated by cap and trade, in which it will become even more important to develop protocols for attributing credit for energy saved. For example, was that energy saved because of the value of greenhouse gas (GHG) offset markets or because of energy efficiency incentives?
- There are significant challenges to creating a level playing field for Energy Efficiency (EE) programs. Although energy efficiency has been identified in many jurisdictions as a high priority resource, it also typically has lower incentives than Renewable Energy (RE) resources. In addition, except in limited circumstances, energy efficiency does not qualify for GHG offsets.

COMPETITION BETWEEN ENERGY EFFICIENCY AND OTHER ENVIRONMENTAL POLICIES

For example, in California, there are many complexities and uncertainties that affect energy efficiency programs:

- Assembly Bill 32 (AB 32)¹, the California Global Warming Solutions Act of 2006, may compete with utility energy efficiency programs. The legislation requires a 20% reduction of GHGs by 2020. The Governor has established a goal of 80% reduction of GHGs by 2050. Under the act, the largest 250 energy customers will be governed by Cap and Trade.² It was originally speculated that these customers would be responsible for their own GHG reductions and would not be able to use energy efficiency incentives to help achieve those reductions. Only recently did utilities receive guidance from the CPUC that these customers would still be eligible for their programs.
- The energy resource loading order stipulated under California's Energy Action Plan³ places energy

1 <http://www.arb.ca.gov/cc/ab32/ab32.htm>

2 <http://www.arb.ca.gov/cc/capandtrade/capandtrade.htm>

3 http://www.energy.ca.gov/energy_action_plan/index.html

efficiency as the highest priority resource, followed by demand response, renewable energy and distributed generation, in that order. However, the California Independent System Operator (CAISO) is moving towards market pricing. It is unclear what energy efficiency's place is in a purely market environment; i.e., if energy efficiency is California's highest energy resource priority, will it be accorded additional incentives to achieve its proper place in the market? Presently, renewables are accorded higher incentives than energy efficiency, although they are lower in the resource loading order. This type of disconnect between the design of energy programs and the state's adopted policies increases the difficulty of achieving the targeted energy efficiency goals.

New York has adopted a "45 by 15" clean energy goal; this includes meeting the State's electricity needs from improved energy efficiency (15% of projected demand is to be achieved through energy efficiency) and renewable energy (30% of electricity sold in New York is to come from qualified renewable sources) by 2015⁴ and, like California, a greenhouse gas emissions reduction goal of 80% by 2050.⁵

New York is relying on its participation in the Regional Greenhouse Gas Initiative (RGGI)⁶, the first mandatory, market-based effort in the U.S. to reduce greenhouse gas emissions among ten Northeastern and Mid-Atlantic States, as a means to partially achieve near-term GHG reduction goals. Through RGGI, offsets are permitted for energy efficiency, but the power sector-focused initiative does not capture industrial customers, who still need to access energy efficiency incentives to make emissions reductions more cost-effective. New York and the participating states were hoping to see actionable price signals from RGGI; however, that has not yet occurred. ComEd is trying to evaluate and capture capacity reductions to submit through PJM. Here, too, there are potential coordination issues that become significantly complicated during the energy efficiency evaluation, measurement and verification (EM&V) process; i.e., who should be credited for energy savings?

Concerns about attribution of energy savings and avoiding "double dipping" and over-counting led to the issue of "free ridership." In utility energy efficiency programs, "free ridership" is related to attribution of energy savings; i.e., would these energy savings have occurred absent this energy efficiency program? In general, most of the participants agree that undue emphasis and resources are being devoted in many jurisdictions to proving that energy savings are due to something other than the energy efficiency programs. Instead of investing significant funds across the U.S. on studies and methods that focus on discounting energy savings, these funds could be productively deployed on achieving more energy savings.

It is essential that the intrinsic value of energy efficiency measures with respect to GHG reductions be properly

"It is very difficult for energy efficiency to compete when residential solar is being accorded a GHG value of \$900/ton and energy efficiency is being valued at \$30/ton."

MARK GAINES,
SEMPRA UTILITIES

4 http://www.ny.gov/governor/press/press_0107091.html

5 http://www.state.ny.us/governor/executive_orders/exeorders/eo_24.html

6 <http://www.rggi.org/home>

recognized. The CPUC approved including a value of \$12.50/ton for energy efficiency resources that was recently raised to \$30/ton. The California Air Resources Board (ARB) has adopted proxies of \$150/ton for central plant renewables and \$900/ton for residential solar. It is very difficult for energy efficiency to compete with these other energy resources that are being accorded much higher GHG values, in contradiction with the energy resource loading order adopted in the California Energy Action Plan.

ENERGY EFFICIENCY FUNDING

Ultimately, these issues must all be considered in the context of utilities' potential role in environmental sustainability. Through legislation or administrative action, utilities are required to collect surcharges from utility customers in the form of Public Benefit Charges (PBCs), and then to apply those PBCs to the public purposes specified by the respective states' legislatures or public utility commissions.

The California Public Utilities Commission (CPUC) mandated that the IOUs support greening the state's local governments through non-resource energy efficiency programs for which California's IOUs do not earn energy savings credits. This raises two questions: (1) are IOUs the right entities to support the greening of local governments, where "green" goes beyond energy efficiency; and (2) if so, how do you build a sustainable program when no energy savings credits accrue to the program? Since energy savings are directly linked to shareholder earnings; and further, since investments in non-resource programs reduce the overall "cost-effectiveness" of energy efficiency portfolios, there is less incentive to California IOUs for investing in non-resource programs.

The New York State Energy Research and Development Authority (NYSERDA) serves in the dual role of public agency and implementer of public benefit energy efficiency programs. In this respect, its role is simpler than that of IOUs because non-resource programs including low income, market transformation and research, development and demonstration (RD&D) programs implemented by NYSERDA are all deemed consistent with the public benefit, which is NYSERDA's primary mission.

Recently, New York has resurrected IOU energy efficiency programs that are directly funded and managed by the utilities. Each New York IOU has a program goal to achieve, and there are both credits and penalties associated with those goals.

Bundling energy efficiency with climate action helps to overcome silos and improve both program effectiveness and cost-effectiveness. There are many public purpose goals which need to be supported by multiple sources of funding. Boulder, Colorado is presently one of few cities helping to fund climate programs.

“Emerging technologies alone cannot achieve the targeted energy savings, which exceed the amounts estimated through potential studies.”

DEB SUNDIN, XCEL ENERGY

CLOSING THE GAP ON ENERGY EFFICIENCY POTENTIAL

Energy savings goals are sometimes established on bases that are at odds with energy efficiency potential studies. Minnesota adopted a decision to achieve an energy efficiency goal of 1.5% of sales on an annual basis. Energy efficiency potential studies support energy efficiency of 1% to 1.2% per year over the long-term. How are utilities going to achieve the increase from 1% per year to 1.5% per year, and is it really achievable every year?

Energy efficiency potential studies do not handle emerging technologies (ET) very well. From a historical perspective, ET has resulted in incremental benefits, but there have been no “silver bullets.” Looking forward, the amount of energy efficiency estimated in new technologies is much smaller than historical lighting improvements, and even those benefits are diminishing. While significant savings were initially seen in the conversion from residential incandescent to compact fluorescents (CFLs), those are now tapering off.

Utilities are trying to figure out what elements are needed for a sustainable energy efficiency program. Smart grid may help, although it is uncertain at present how much of the potential benefits are likely to be demand response (e.g., load shifting) vs. energy efficiency (e.g., energy savings).

SMUD expects to see significant energy efficiency from smart grid, although pricing structures will be needed that elicit the right responses from energy customers. Through studies of mass markets and loads > 50 kW, SMUD anticipates smart grid will achieve reductions of 15-20% in peak demand and about 20% energy efficiency overall. Much of this potential is expected to be achieved through automated control of appliances: home energy management systems (EMS), programmable communicating thermostats (PCTs), and integrated diagnostics that show customers the relative performance of their energy consuming appliances. SMUD received \$128 million in smart grid research funds through ARRA that will be used to conduct consumer behavior studies. These will supplement SMUD’s prior technical potential study that included retail, office buildings and restaurants.

“If IOUs are the right entity to help green local governments but there is no recognition of energy savings through these efforts, how do you create a sustainable program?”

NANCY JENKINS, SOUTHERN CALIFORNIA EDISON

Envisioning the Future Utility

The future utility needs to be nimble to effectively incorporate new technologies while concurrently adapting to changing markets and customer expectations. A strong theme during this discussion was the relationship between the utility and the customer via infrastructure and information technology, and the need for utilities to work closely with their customers to help them transition to world of a real-time energy information.

“We want to be there; we have a historical relationship with our customers.”

MIKE BACICH,
RIVERSIDE PUBLIC UTILITIES

THE ROLE OF SMART GRID AND ADVANCED METERING INFRASTRUCTURE (AMI) IN THE FUTURE UTILITY

There is significant interest around smart grid technology and its potential to substantially transform the role and infrastructure of energy utilities. While smart grid has received much attention, most utilities are still trying to decide how to approach the technology, to what level it will be integrated into their systems, and what is the appropriate role for their utility. In particular, where does the future utility's role fall when it comes to the customer side of the meter? Is it to simply provide the advanced meter and stop there, or is it to provide services to their customers on the other side of the meter as well? Various utilities are embracing different visions and business models.

Smart grid is often cited as a change that will enable a wider adoption of Electric Vehicles (EVs). However, from the experience of the utilities, integrating vehicles into the grid poses several infrastructure and coordination challenges:

- Automakers have expressed concerns about using vehicle batteries as grid-storage devices, a function for which they have not been designed
- It is not clear who will own any renewable energy or emissions offsets credits produced: the utility, the automakers, the customers?
- There are many unresolved questions as to how the power will be transferred to vehicles for storage, who will control the power, and who will own the power.
- Utility transformers usually cool overnight when demand is low. If a significant number of vehicles are charged during the night, how will the useful life of transformers be impacted?
- How can recharging be managed to avoid adding to peaks and minimize stress on the distribution system?

“We don't want to own the thermostat or home energy management system. We do want to own education about demand side management as a resource.”

BOB STOLARSKI, PUGET SOUND ENERGY

Pilot studies are being conducted throughout the U.S. to help answer these and other questions. AMI is already being rolled out by utilities nationwide—some in response to regulatory direction, and others voluntarily, to begin the transition to the future utility. It is anticipated that AMI will provide the ability for savvy customers to proactively manage their energy consumption, and that customers will be able to select from a variety of pricing structures that best meet their pattern of energy usage. Parallels are often drawn between AMI and the manner in which cellular phones transformed the telecommunications industry.

Utilities anticipate that there will at a minimum be a need to help customers understand the rate options and learn how best to respond to price signals. Many telecommunication companies assist their customers in choosing the best rate plan; energy utilities can learn from that.

One of the lessons learned by early utility AMI rollout activities is that it should be coupled with customer education and communications to address any concerns about the distinctly different structures in energy meter data, especially with respect potential impacts on customers' bills.

The transition to a smart grid poses a special challenge to regulators, who are presently approaching the rollout as a “one size fits all.” The customer side of smart grid, however, is driven primarily by demographics.

Many complex rate and equity issues will need to be addressed by regulators over the next few years. For example, what is the role of utilities in absorbing time-of-use price risks? How will credit be allocated to utilities for customer responses to rate design?

CUSTOMER-UTILITY INTERACTIONS

Energy utilities have historically had a special relationship with their customers. Sempra reported that customers stated: “I never think of you; but when I do, it’s good.” In fact, for the most part, except during unusual circumstances, most energy utilities have been “invisible” to most of their customers. In the past, that was viewed as good – energy utilities were reliable, dependable and always there, in the background. That relationship is about to change.

In a smart grid/AMI world, utilities will need to increase interaction with their customers – whether directly or through third party providers of energy management systems. The future utility will be more about information – a lot of it, and real-time – so that both the managers of the electric grid and the energy customers that get their power from the grid can make more informed decisions.

Utilities vary as to what their role should be behind the customer’s meter. Some utilities value their relationship with their customers and are concerned about the possibility of having their relationship with their customers eroded by third party providers of customer energy management systems. Others see opportunities for partnering with providers of energy information services.

Most utilities concede that they are not equipped to compete with consumer electronics companies, nor internet service providers or social e marketers. Inevitably, whether or not utilities choose to become actively involved on the customer side of the meter, partnering with internet service providers, information technology firms, home EMS providers and others is anticipated.

One of the key roles that utilities expect to play for the foreseeable future is guardian of customer data. This will be increasingly challenging in an AMI world; but utilities still feel that it is their job to protect confidentiality of their customers' data to the extent possible.

“Utilities are being challenged to balance the need to provide energy data with the need to also maintain privacy.”

SHAUN DENTICE, SEMPRA UTILITIES

MOVING FORWARD

With the increase in information available through AMI, utilities will need to target customer classes to effectively reap the benefits of AMI. For AMI to effectively work the following steps need to be taken:

1. An effective price signal needs to be established via rates
2. Enabling technologies must be provided to the customers
3. Customers need to be educated on how to use the enabling technology to respond to price signals and save money

Communicating with customers will be a challenging task for the future utility. Enormous amounts of information will be available to both the utility and the customer regarding energy use, prices, energy efficiency programs, and much more that communication must be streamlined in order for it to remain effective. Utilities want to play an active role in this line of communication; utilities do not want to be invisible.



Sustainability in the Utility Context

Many parties define “sustainability” differently. Some consider “sustainability” to be comprised of three primary elements: social, economic and environmental. The California Sustainability Alliance is dedicated to advancing environmental sustainability that includes seven high priority strategies for the state of California: energy efficiency, water efficiency, renewable energy, greenhouse gas reduction, “smart” growth, waste management and transit oriented development.

A wide variety of factors determine a utility’s role in sustainability. Three primary drivers impact utility sustainability policies: government or regulatory pressures, internal top-down leadership, and customer demand. There are also different dimensions of sustainability adoption by utilities:

- Internal (i.e., by the utility itself);
- External (i.e., through customer programs, products and services); and
- Societal (i.e., a broad role as a corporate citizen, advancing sustainability adoption beyond the scope of the utility’s own operations).

Exelon exemplifies internal top-down leadership through a visionary CEO which resulted in corporate-wide adoption of sustainability principles and best practices. In 2008, Exelon launched Exelon 2020, an ambitious strategy to reduce, offset or displace more than 15 million metric tons of greenhouse gas (GHG) emissions per year by 2020 - more than the company’s 2001 carbon footprint. This push from the top made it possible to accelerate sustainability adoption in all of ComEd’s 79 locations. Exelon’s corporate headquarters in Chicago received the USGBC LEED-CI Platinum and was the largest such project in the world at the time. Exelon states: “In 2009, Exelon marked its successful first year of the comprehensive low-carbon strategy by reaffirming 2020 emissions targets. We have reduced our greenhouse gas emissions by an amount equal to the annual emissions of approximately 1 million passenger vehicles.”¹

In addition to greening its operations, Exelon companies (PECO and ComEd) are helping their customers and the communities they serve reduce their greenhouse gas emissions through sizable energy efficiency and demand response programs. Both companies are working in partnerships with the cities of Chicago and Philadelphia to further their energy efficient retrofits and smart grid infrastructure.

There are many different dimensions of “sustainability” from a utility’s perspective. For example, Xcel views itself as a “green” company that has adopted some sustainability practices such as recycling and employee transit programs, but has not adopted a broad corporate sustainability strategy or culture. Xcel has observed growing customer demand for sustainability programs and services. Both Xcel and ComEd noted that their need to deliver services in multiple states complicates their ability to deliver sustainability programs, although ComEd also observed that having a national perspective enabled deployment of an integrated corporate-wide strategy that spanned its operations in multiple states.

¹ <http://www.exeloncorp.com/environment/climatechange/overview.aspx>

CUSTOMER DEMAND FOR SUSTAINABILITY PROGRAMS

Utilities have an opportunity to advance sustainability adoption through both traditional and non-traditional energy efficiency programs, including innovative rate design.

Riverside Public Utilities (RPU) observed that its customers are becoming increasingly sophisticated and aware of environmental sustainability. In fact, large customers have told RPU that they want the utility to replace its coal supplies with renewables. RPU offers a green business attraction and retention program through an economic development rate. Eligibility for the green economic development rate requires adoption of a corporate “green” or “sustainability” policy by the customer.

Utilities also have a substantial role to play in advancing sustainability in the built environment. In Austin, a proactive green building group influenced green adoption in both new and retrofit construction. Although many other utilities also have programs for both new and retrofit construction, new development has been scarce over the past couple of years, due to the economic crisis. SMUD therefore focused its efforts on encouraging customers to adopt “deep” energy efficiency retrofits. SMUD built a “Home of the Future” in an older area of Folsom, California that demonstrates the types of measures and benefits that residential customers can achieve.

Through its Local Government Partnership Program, Southern California Edison (SCE) has adopted tiered incentives that reward local governments who achieve higher levels of energy savings through higher energy efficiency incentives. New Jersey has adopted a similar program for Class A and B customers.

Puget Sound Energy found that about 50% of its customers consider themselves “green,” although there were many shades of green within that group. The rest of its customers are primarily focused on economics – if it makes economic sense, they are interested; if it does not produce economic benefits, they are not.

PG&E’s ClimateSmart™ program allows customers to balance out the GHG emissions from their electric and gas usage through environmental conservation, restoration and protection projects. Enrollment among business customers grew by 20% in 2009. Many business customers find that conveying their commitment to environmental sustainability through this program helps their bottom line.

“Over time, as the power mix becomes cleaner, GHG reductions will become less valuable.”

LYNNE GALAL, PG&E

THE ROLE OF FINANCING IN SUSTAINABILITY PROGRAMS

Utilities, lenders, advocates and others have been trying to overcome the “first cost” barrier for years. Recently, several new programs have been deemed to hold high promise for helping to accelerate energy efficiency adoption. Of these, the program that is receiving the most attention on a national scale is “PACE” – Property Assessed Clean Energy financing that attaches first liens on clean energy retrofits (energy efficiency and renewable energy) on real property through property tax bills. The primary attraction with PACE is that the responsibility for paying off the debt transfers to successive owners through the tax rolls. Other financing programs, such as “PAYS” (Pay as You Save) and utility on-bill financing attach loans for retrofits to the energy meter. Responsibility for paying off the debt transfers to successive owners through energy bills for the retrofitted facility. These programs are deemed more risky because new customers may not agree to pay off the loan, and the utilities have no legal recourse to pursue the new energy customer.

RPU has implemented a whole house rebate program that provides tiered incentives – the more you do, the more you save. A point system determines the amount of the rebate that can be as high as 350% of standard energy efficiency incentives. In combination with RPU’s PACE-type program, the energy efficiency adoption decision is substantially simplified, making the decision much like buying a car.

REGULATORY BARRIERS

One of the key aspects of sustainability types of programs is that it seeks to optimize multiple environmental goals under a single program. This is a considerable challenge under traditional regulatory structures in which energy efficiency, demand response and renewable energy are still separately regulated.

The adverse impact of traditional regulatory silos can be seen in the difficulty of implementing “zero energy” programs (a combination of renewable energy, energy efficiency, and demand response). Baby steps are being taken to overcome these barriers. For example, in California, SCE recently issued a \$30 million solicitation for local government pilot programs that required crossing traditional departmental boundaries. The CPUC recently approved PG&E’s zero net energy projects that also cross regulatory boundaries. California is also exploring the concept of providing energy incentives to save water. In New York, water is deemed a co-benefit of energy efficiency programs but no separate incentives are provided for water savings.

Regulations can perpetuate silos. A new regulatory compact will be needed to enable effective integration of multiple activities and value streams that comprise the full scope of environmental sustainability initiatives.

The Business Case for Sustainability

Inclusion of holistic sustainability principles could add value to utility energy efficiency programs, for utilities, customers, and regulators. In particular, sustainability is a way for utilities to leverage energy efficiency through high priority, complementary regulator and customer initiatives. This approach enables utilities to become partners to customers looking to achieve their own sustainability goals, potentially resulting in more cost effective and comprehensive adoption of energy efficiency. It also enables utilities to become partner to regulators expanding their sustainability policy priorities.

For customers, sustainability provides a framework to mitigate risks in diverse areas such as energy costs, water supply, procurement, and air quality. It also provides an opportunity to more fully understand business processes to improve economic efficiency. Finally, sustainability is increasingly being utilized as a market differentiator and as an approach to improve employee productivity and increase employee retention.

Despite the high potential of an integrated sustainability strategy, utilities face numerous challenges in implementing such an approach. These include understanding whether/how the sustainability value proposition resonates with customers; assessing what types of sustainability activities are appropriate for an energy utility; justifying and recovering the costs for supporting the broader sustainability agenda; and developing effective partnerships with other stakeholders such as water utilities, local governments, and private companies.

“Customers benefit most from comprehensive energy solutions, not just incremental energy efficiency.”

GEORGE MALEK, COMED

THE SUSTAINABILITY VALUE PROPOSITION

While customers across the country are increasingly focusing on sustainability as a holistic principle, some regions of the country are more interested in the concept than others. Different customer classes also express varying levels of interest.

While many customers pursue energy efficiency because of its financial impact, participants in sustainability programs are far more likely to be emotionally motivated. This emotional motivation helps to increase uptake of energy efficiency measures with longer paybacks, but only certain customer classes tend to have this type of motivation – typically local governments and customers on strong financial footing. The “free ridership” question also becomes particularly difficult to address: if the customers are already emotionally motivated, how can a utility prove they would not have adopted sustainability measures even in the absence of incentives?

Nevertheless, there are many benefits to sustainability that resonate with customers and regulators and combine to form a compelling value proposition:

- Reduced energy bills
- Climate action (GHG reduction)
- Energy security
- Social equity
- Air and water quality
- Water conservation
- Smart growth and improved transit
- Public health

Today, one of the primary drivers for sustainability is climate action. Yet it is important not to focus exclusively on GHGs as the primary driver for and metric of sustainability. While GHGs provide a unifying metric that cuts across many types of sustainability initiatives, all of the above drivers are strong motivators and should not be neglected. Focusing too narrowly on climate action risks limiting the target audience and can be overly dependent on a single, highly political driver. Instead, utilities should embrace the diverse and multiple benefits of sustainability to ensure stable and broad-based programs.

“Even if utilities were able to reach 100% renewable generation, we would still need energy efficiency programs. The end game is not solely to reduce GHGs.”

JOHN BAKER, AUSTIN ENERGY

THE UTILITY ROLE

Utilities hold a unique position in the marketplace as well-established and generally highly trusted institutions. Yet in expanding from energy efficiency to sustainability, there is a limit to what utilities can and should take on. Historically, utilities have had a very difficult time expanding beyond providing energy and infrastructure to providing broader services. In addition to requiring new program approaches, sustainability goes beyond utilities' core competency – energy – and into areas they are less familiar with, such as water and waste.

While the ability to serve as a “one stop shop” for customer sustainability inquiries holds a great deal of potential, many utilities are concerned about exceeding their core competencies. In addition, some utilities expressed concern that in so doing, they may be exceeding the authorized PBC purposes specified by the legislature.

A broader utility role in assisting customer sustainability efforts may be:

- An umbrella that enables utility and non-utility entities to partner to leverage customer access and resources;
- An approach to getting customers to adopt deeper and/or more sustained commitments to energy efficiency;
- A strategy for reducing costs for attaining GHG reductions; and/or
- An approach for working with customers to develop best strategy/approach for integrating energy efficiency, demand response and renewable energy for their facilities/operations.

Such programs could be more integrated than today's energy efficiency programs, addressing related issues such as demand response, renewable generation, and water conservation.

Yet, regardless of how sustainability programs are funded and structured in the future, utilities must be at the table and engaged in developing programs and communicating with customers, taking advantage of their central position in the marketplace.



“Investing in sustainability now will help develop the infrastructure needed to get kWh savings ten years from now.”

JOHN WILLIAMS, NYSERDA

PARTNERSHIPS

Implementation of holistic sustainability programs may require partnering with diverse stakeholders such as water utilities, overlapping and neighboring energy utilities, local governments, and energy services companies. However, utilities face numerous challenges in developing effective partnerships with these organizations. Regulators often limit utilities' ability to develop programs jointly with other energy and water utilities, and restrict marketing efforts; contractors often specialize in one aspect of sustainability, and are unqualified to serve customers in more holistic programs; and local governments often have such broad goals that only a small portion of programs can be devoted to energy efficiency.

In all types of partnerships, it is difficult to come to a common understanding with organizations that have different business models, priorities, approaches, funding mechanisms, applicable regulations, and types of experience. Privacy is also a significant concern. Nevertheless, these partnerships are essential to leverage sustainability efforts and make it cost-effective to reach utilities' aggressive sustainability goals.

In California, for example, PG&E partnered with several water agencies to incentivize high-efficiency clothes washers. This program has been highly successful in streamlining the rebate process and making it easier for customers to participate. However, the program development process took over a year and was difficult on both sides – neither PG&E nor the water utilities are experts in each others' area of business, and vendors also tend to specialize in either water or energy. Moreover, water agencies can become overwhelmed with immediate needs such as emergency drought measures, making it difficult

for them to focus on longer term conservation initiatives. In a similar program, Southern California Gas successfully partnered with a water agency but was limited by regulation in its ability to jointly market the program.

In New York, NYSERDA has been able to use deemed savings for water conservation to make energy efficiency programs more cost-effective. However, due to the RGGI program structure and agreement among participating states to invest auction proceeds into defined energy and climate mitigation activities, water savings and other non-energy sustainability benefits are not integrated into the metrics for program progress.

Recently, debates and concerns about attribution have also increased the difficulty of partnering and have decreased the incentives for pursuing market transformation. If there is a contentious debate about the portion of the savings that can be attributed to each partner, the burdens of partnering increase, while the benefits could decrease.

“Customers come to us as the source for energy-related information—and that’s a big advantage. But we also need to stay within our competencies.”

FRANK SPASARO, SEMPRA UTILITIES



Leveraging Resources

Given that environmental sustainability spans many different programs and initiatives, each with its own unique set of key stakeholders, there are many opportunities for strategic partnering to leverage resources and increase both the effectiveness and cost-effectiveness of energy efficiency programs:

- Job creation is a very high priority under this stressed economy. Most utilities are already partnering proactively with non-profits and educational institutions. For example, ComEd staff serves as advisors at Northwestern University and the Illinois Institute of Technology where they meet with students and make presentations. Utility staff also conducts seminars and workshops on integrated design principles at the local chapter of the USGBC. In California, the CPUC sponsored a contest among university students and the utilities have substantial intern programs. In addition, there are multiple workforce programs in place, primarily at the community college level
- SMUD has moved away from direct incentives to customers, now favoring incentives almost exclusively upstream in the supply chain (e.g., to retailers, equipment sellers and contractors, or manufacturers) which has been shown to be considerably more efficient.
- Trade allies such as the Urban Land Institute (ULI), U.S. Green Building Council (USGBC) and the Building Managers and Owners Association (BOMA) are powerful partners and effective program delivery channels, as are equipment manufacturers and providers.
- SCE and SCG jointly sponsor a “Cool Planet” program that helps facility managers get recognition from their Boards. After participants reach a targeted threshold of energy efficiency savings, the program pays for their membership in the Climate Action Registry.

Conclusion

The roundtable discussion revealed that despite significant advances in energy efficiency technologies and programs, many questions remain. While the utilities represented are under pressure to achieve greater energy savings, measurement and attribution of these savings is becoming more of a challenge. And even though California has designated energy efficiency as its highest priority resource, efficiency programs typically receive lower incentives than renewable energy development, making it harder for utilities to prioritize and finance such programs.

Perhaps the most uncertainty surrounds the role of the smart grid, or Advanced Metering Infrastructure (AMI), in future energy efficiency programs. Despite the rollout of smart grids in many communities, uncertainty remains about the energy savings that will be achieved and the potential for integrating electric vehicles into the system. Yet the most significant change may be the utility-customer relationship. In the future, utilities will not be invisible, but will need to interact more with their customers by sending price signals, providing enabling technologies, and developing customer education programs. Some utilities have expressed concern about expanding beyond their traditional core competencies, and many will wish to partner with technology companies, non-profits, and local governments.

While typically thought of as standalone programs, energy efficiency adoption may be greatest if it is promoted through comprehensive sustainability programs; however, significant financing and regulatory barriers remain. Utilities have differing motivations to adopt sustainability programs, while customer demand for sustainability can vary significantly over class and region. Nevertheless, there are many benefits to sustainability, including reduced energy bills, climate action, and energy security, which may combine to form a compelling value proposition to customers. While climate action is a major driver for both customers and regulators, utilities should not focus on it too narrowly and miss gaining buy-in around the diverse and multiple benefits of sustainability programs. At the same, utilities are concerned about extending themselves beyond their core competency— providing energy— as they expand their programs to encompass sustainability. Again, forming effective partnerships to leverage resources will be key to implementing effective energy efficiency and sustainability programs.

The importance of energy efficiency to meeting sustainability goals cannot be overstated. To ensure widespread adoption, incentives putting energy efficiency on more equal footing with new generation (including renewable energy), a revised regulatory structure, better customer communication, and effective partnerships will be required to help utilities deliver the sustainability programs now being asked of them.