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September 2011

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Letter from the President and CEO

WHAT DOES BEST BUY KNOW ABOUT CONSUMER BEHAVIOR?

By: *Meg Matt, President and CEO of AESP*

Plenty! As one of the largest national electronics retailers, these guys clearly know what consumers want and how to sell to them.

But it does not stop there. Recently, Best Buy conducted a survey among consumers about their attitudes toward residential energy management. The data gathered yielded a fascinating report which helped them understand the drivers behind the purchase of energy management products, and, more importantly, how to deliver a marketing message that resonates with their customers. These findings would be valuable to us in the energy industry too, especially those of us managing programs where consumer buy-in is crucial to success.



Meg Matt
AESP President and CEO

Kris Bowring, senior director and platform lead of Home and Energy Management for Best Buy, is the closing plenary speaker at our upcoming AESP Fall Conference in October. His presentation "Understanding Consumer Lifestyle Drivers and Energy Attitudes as Motivation for Smart Energy Program Participation," will enlighten the audience and provide thought-provoking data on this topic.

One of the key insights that emerged from their survey is that a one-size-fits-all profile does not apply to the energy savvy consumer. "We identified two main segments," Kris said, "The Life Maximizer is generally more tech-savvy and seeks "delightful" investments that provide comfort, control and a cool quotient. For this group, remote management is a key selling point, like, being able to control your home from an iPad or smartphone."

"Meanwhile, the Home Safeguarder seeks solutions that financially and physically protect the home. They seek investments that make the home more efficient, safer and better." The key is to connect relevant solutions with the right consumer profile.

Another bold recommendation from Best Buy is to move away from the traditional ROI proposition – which is the cornerstone of many EE program marketing campaigns.

But then, what fills the void if ROI is not the way to go? Instead of emphasizing cost savings alone, what messages is Best Buy using to encourage consumers to invest in home energy management products? Will that same message work for you and your program too?

Upcoming Events

Brown Bags

Sep 8, 2011

Saving Money and Getting Results - Regional research on commercial HVAC load shapes and peak coincidence, lighting persistence, and incremental costs

Sep 22, 2011

The Evolution of Evaluation

If you would like to organize a Brown Bag, please contact Kisha Gresham at kisha@aesp.org.

AESP Training Courses

Principles of Evaluation, Measurement & Verification
/
P2 – Level II DSM Program Planning Design & Implementation
Oct. 25–26, Portland Hilton, Portland, OR

Principles of Evaluation, Measurement & Verification
/
E2 – Level II DSM Economics & Evaluation
Nov. 8-9, Desmond Hotel, Albany, NY

[Click here for course details and to register.](#)

If you would like to schedule

Kris will reveal this and much more in his presentation in Dallas. I am just as curious as you are to know more and I hope to see you there!

PS: Registration is now open for the AESP Fall Conference, "Customer Behavior & The Smart Grid," taking place in Dallas this October 3-6. In addition to exciting sessions and round tables centered on the topic of customer and Smart Grid implementations, there are also a pre-conference interactive workshop and training sessions on EM&V and Marketing. Find out more and register at our website aesp.org.

Headlines

Industry News

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Integrating LEDs into Energy Efficiency Programs
Integrating DSM and Supply-Side Options – The Business Disconnect

AESP News

Updates from AESP
 New and Renewing Members
 News Releases and Announcements

Industry News

The following executive summaries of current news items were written for Strategies after being compiled from various news sources.

U.S. Reforms Electric Transmission Planning

The Federal Energy Regulatory Commission (FERC) has reformed electric transmission planning and cost allocation requirements for public utility transmission providers. Order 1000 could create opportunities for energy efficiency investments, grid-scale renewable projects, and smaller scale distributed generation. Among the requirements for transmission planning the rule establishes is for public utility transmission providers in each pair of neighboring transmission planning regions to coordinate to determine if there are more efficient or cost-effective solutions to their mutual transmission needs. This will be accomplished through significant changes in the way interstate electric transmission companies plan to meet their system needs and the way in which they allocate costs to their customers. According to the World Alliance for Decentralized Energy, the order will lead to a flurry of industry activity to implement its requirements. Every transmission utility will need to participate in a regional transmission planning process and submit a filing to show how it is in compliance with the requirements of the Order within one year of the effective date, with interregional compliance filings due within 18 months.

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From "U.S. Reforms Electric Transmission Planning"
Renewable Energy Focus (08/15/11)

Demand Response Helped Some Regions Conserve Electricity During Heat Wave

an onsite training please contact Suzanne Jones at (480) 704-5900 or suzanne@aes.org. For more information about the AESP Institute, click here.

Conferences

October 3-6, 2011
 AESP's Fall Conference:
 Customer Behavior & The Smart Grid
 Dallas, TX
Register NOW!

February 6-10, 2012
 AESP's 22nd National Conference & Expo
 San Diego, CA

May 15-18, 2012
 AESP's Spring Conference
 Baltimore, MD

Have a Question...Ask AESP!

Do you need advice from your peers on your latest project or program? If so, submit your questions on AESP's listserv. To subscribe to the listserv, email your request to mailsrv@aes.org and type "Subscribe AskAESP" and your first and last name.









AESP is a member-based association dedicated to improving the delivery and implementation of energy efficiency, energy management and distributed renewable resources. AESP provides professional development programs, a network of energy practitioners, and promotes the transfer of knowledge and experience.

AESP
 15215 South 48th Street,

During the heat wave that affected large parts of the United States in July, power generation plants were assisted by demand response programs. These programs curb power consumption by raising thermostat settings, lowering lighting, shutting down pumps and production lines. "To be quite frank, it's imperative that those resources are there and able to perform," says John Moura, manager of reliability assessments at the North American Electric Reliability Corp. (NERC). The PJM Interconnection relied on demand response providers to take off 2,358 megawatts of demand from the grid on the afternoon of July 22, says spokesman Ray Dotter. Although its systemwide peak exceeds 158,000 megawatts, the impact of demand response is more significant in PJM's Mid-Atlantic side, where transmission connections are more crowded and extra generation is harder to find. Demand response service provider EnerNoc Inc., saved 1,230 megawatts of electricity demand in 12 states on July 22, including all of New England, New York, Maryland, Delaware, New Jersey, Pennsylvania, and Idaho, the company says. EnerNoc Chairman and CEO Tim Healy says automated software systems triggered the bulk of cutbacks at hotels, retail stores, and manufacturing businesses. Wholesale spot prices for electricity in parts of New England reached \$560 per megawatt-hour on July 22, about ten-fold higher than annual average prices, EnerNoc says.

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From "Demand Response Helped Some Regions Conserve Electricity During Heat Wave"

New York Times (07/27/11) Behr, Peter

'Green Homes' That Don't Break the Bank

Green homes have not yet gone mainstream, and most of the ones that have been built so far are upscale dwellings. However, in Frederick, Md., the energy efficient townhomes in the North Pointe neighborhood will feature solar panels, geothermal heating, and a computer system to manage energy use; and they will be priced from the mid-\$200,000s. With 20 solar panels mainly on the roof, the units will produce energy during the day when residents are at work; and this energy will be consumed in the evening, meaning that they are net-zero units and consume only as much energy as they create. However, experts say the energy savings are only estimates and could be off by 10 percent to 20 percent. The computer system included in the homes will allow occupants to track energy usage and turn off lights, sprinklers, and other items from remote locations. Buyers also can apply for state and federal tax credits to offset the cost of the solar and geothermal systems.

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From "'Green Homes' That Don't Break the Bank"

Washington Post (08/13/11) P. E3 MacDonald, Christine

The Too-Smart-for-Its-Own-Good Grid

Massachusetts Institute of Technology (MIT) researchers have shown that some relatively simple price controls can prevent huge swings in electricity demand, but that stability could undermine the efficiencies that real-time pricing provides. Customers currently receive monthly electric bills that indicate the cost of electricity based on a three- to six-month average. The price varies according to demand, but the demand does not vary according to price, which is known as an open loop. Smart meters could close that loop, drastically changing the dynamics of the system. MIT researchers hypothesized that every consumer has a "utility function" that describes how they use electricity, and these functions can be pooled into a collective function that represents an entire population. The researchers found that if consumer response to price fluctuation is large enough to significantly alter patterns of energy use then price variations well within the normal range can cause dangerous oscillations in demand. The researchers developed a system that shields consumers from the market, which could limit dramatic oscillations.

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From "The Too-Smart-for-Its-Own-Good Grid"

MIT News (08/03/11) Hardesty, Larry

New Mexico Court Invalidates Energy Efficiency Surcharge

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The New Mexico Supreme Court has invalidated a regulatory plan to encourage the state's electric utilities to promote energy efficiency. The court struck down a decision by the Public Regulation Commission (PRC) requiring New Mexico residents to pay a surcharge to cover part of the money lost by utilities when customers use less electricity because of energy conservation. The court concluded that regulators failed to use a cost-based ratemaking approach in determining the surcharge last year. The amount was not tailored specifically for each utility or based on actual costs incurred by the individual companies. Without doing that, the court said, there's no way to determine whether the surcharge is "just and reasonable." The surcharge was to carry out a state law for removing regulatory barriers to energy efficiency programs. A utility's earnings and ability to cover its fixed costs are tied to electric consumption under a typical regulatory ratemaking system. The PRC's rule tried to deal with that by having customers compensate utilities for part of the revenues lost when energy efficiency programs succeed and electric usage dropped. To carry out the state law, the PRC allowed utilities to collect one cent for each kilowatt hour of electricity that was saved through energy efficiency programs. The surcharge was to expire after about two years, and the utilities were to come up with a specific rate for their companies to help cover the lost revenues from energy efficiency. However, a surcharge of one-half cent per kilowatt hour was to continue as an incentive for encouraging customers to consume less energy. The state's largest electric utility, Public Service Company of New Mexico, expected to receive about \$4 million from the energy efficiency surcharge approved by the commission, according to utility spokeswoman Susan Sponar.

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From "New Mexico Court Invalidates Energy Efficiency Surcharge"
Bloomberg BusinessWeek (08/03/11) Massey, Barry

Verizon Turns to National Lab for Energy Efficiency

Verizon has signed a memorandum of understanding with the National Renewable Energy Laboratory (NREL) to provide guidance and assess how the company can best cut its energy emissions and come up with marketable energy-saving technologies. Verizon says that it wants to work with NREL on two key areas: running its operations, including data centers, in more energy efficient ways and developing technologies that make use of Verizon's communications network to cut energy use in homes and businesses. The collaboration could help to promote segments of the smart grid market that have not seen as much traction as some companies and their investors have hoped. One area that has struggled has been home energy management tools. Google and Microsoft made headlines recently when both ditched their once-heralded energy management software and portals that were designed for consumer use. Additionally, some startups in this sector have found lackluster interest from their intended customers, be they utilities or consumers. Now, telecommunications firms such as Verizon and AT&T appear to think they can create better tools than utilities and can use their weight to get tools into the market faster than some of the startups focused on this. They are positioned to work with all these players to test what business models make sense in the new smart grid market. Telecommunications companies already have the communications networks and some insight into people's use of gadgets and data. Verizon began running a home energy management pilot project in New Jersey earlier this year. The company also joined a \$17.7 million round for Consert, a startup with a home energy product that connects via Verizon's cellular network.

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From "Verizon Turns to National Lab for Energy Efficiency"
Reuters (07/27/11) Wang, Uccilia

U.S. Cities, States Require Large Buildings to Cite Energy Use

To help consumers lower their utility bills and spur greater efficiency, a growing number of U.S. states and cities are starting to require that commercial buildings measure and disclose their energy use. The new rules, which generally exempt small firms, are expected to basically "shame" landlords into upgrades that will save energy. The rules will not specify utility costs, but will show a building's relative efficiency measured in energy use per square foot for apartments. July 31 was the deadline for 16,000 large buildings in New York City to report how much energy they used in the last year or face \$500 quarterly fines. Similar requirements begin in Seattle, San Francisco, and the District of Columbia this October, in Austin next June, and across California as early as the first quarter of 2012. At least six other states

are now considering such rules. "They give consumers — tenants and investors — access to information they've not had previously," says Andrew Burr of the Institute for Market Transformation, a Washington-based non-profit promoting energy efficiency. The Department of Energy's Kathleen Hogan says DOE plans next spring to begin testing a voluntary program to rate the energy efficiency of commercial buildings, similar to a pilot program it finished in June for rating homes. Seattle, which aims to reduce energy use 20 percent by 2020, opted for mandatory reporting, because "voluntary programs weren't getting us there fast enough," says Jayson Antonoff, an energy adviser for the city. He says 860 buildings with more than 50,000 square feet must report by Oct. 1 and another 8,000 buildings with more than 10,000 square feet by April 1. Nationwide, he says, "the number of buildings that will be benchmarked (for energy) is going to explode."

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From "U.S. Cities, States Require Large Buildings to Cite Energy Use"
USA Today (07/31/11) Koch, Wendy

Orchestrating a Smart Grid

Pike Research estimates that 21 million smart meters were deployed last year, a number that is expected to grow to 57.9 million in the coming years, as more than 90 U.S. utilities have developed smart meter deployment plans. After utilities launch these wireless, smart systems, they need to determine how to take advantage of the new information the systems will produce. The companies can help residential and commercial industrial users consume energy more efficiently, troubleshoot networks, and integrate renewable energy sources into the system more easily. However, establishing the systems as viable networks requires a lot of work, as software, hardware, and infrastructure upgrades are needed. One major challenge facing smart grid adoption is that it is proceeding at an uneven pace. "California and Texas have been pushing the most aggressively, with other areas at least taking a few steps toward implementing smart grids," says Pike Research's Bob Gohn. In 2007, Semptra Energy used \$572 million to replace 1.4 million electric meters and 900,000 gas meters with smart meters. That project is currently about 95 percent complete, and is expected to be finished by the end of 2011. Some utilities see other ways the smart grid can improve their business besides smart metering. "We are in a heavily populated area, and much of our distribution network is underground, so it had been impossible for us to see what was happening with those devices," says Con Edison's Tom Magee, whose smart grid initiatives were funded with \$181 million in federal stimulus funds. The company has been upgrading its distribution nodes with wireless network functions. The smart grid also can use applications to help consumers energize electric and hybrid cars during off-peak times so as not to strain the grid.

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From "Orchestrating a Smart Grid"
EnergyBiz (07/11) Korzeniowski, Paul

Microsoft Paper Proposes Using 'Cloud' Servers to Heat Homes

Microsoft researchers recently published a paper that proposes saving energy by installing servers used for cloud computing into homes and businesses. The researchers say the excess heat produced by the servers could be used to heat homes, which would save the hosts and cloud computing companies as much as \$324 a year per server. The researchers envision having data furnaces (DFs) in the basements of suburban homes all across the United States. The servers could heat the homes, provide hot water, and be used to dry clothes, all with existing broadband connections. Larger systems with more central-processing units could be installed in commercial buildings, which would provide more computing power for the cloud company and a reduced heating bill for the host building. Such a system could result in increased storage and computing power for cloud applications without an increase in electrical demand because the electricity used to run the DFs would be offset by the electricity saved in home heating. The system also could result in faster access times for customers because the servers would be located nearby.

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From "Microsoft Paper Proposes Using 'Cloud' Servers to Heat Homes"
PhysOrg.com (07/26/11) Yirka, Bob

Blueprint for America's Energy Future

The National Renewal Energy Laboratory's (NREL) Research Support Facility (RSF) in Golden, Colo., creates a new model and standard for commercial building energy efficiency through the use of a thermally activated building system (TABS), which uses its mass to absorb or release heat through its conditioned surfaces to regulate the interior environment. Among the features typical of TABS structures are concrete slabs embedded with hydronic tubing for low-temperature radiant heating and high-temperature radiant cooling. A sophisticated ventilation heat exchanger was built out of the edifice's lower level with concrete airflow diverters/partitions, and the labyrinth captures heat of the day and the chill of the night, stores the thermal energy, and then slowly emits it to help warm or cool the ventilation supply air. In this way, the building's cooling load is reduced in summer, while during the winter the labyrinth retains heat tapped from computers within the RSF's new data center and from outside air heated by sunlight shining on a transpired air collector. A new technique for installing radiant heating and cooling systems helped make the RSF possible, and 42 miles of Uponor PEX tubing were prefabricated into rolls whose dimensions were tailored to match those of the facility's numerous heating and cooling zones. NREL engineer Paul Torcellini hopes that future TABS-style buildings will utilize PEX-based radiant heating and cooling slabs. "Logic will prevail," he says. "Water is a much better conductor of energy than air, and employing hydronic systems as a pathway for energy will be one of the strongest tools in rewriting our energy profile."

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From "Blueprint for America's Energy Future"
PM Engineer (07/11) Vol. 17, No. 7, P. 18 Abellon, Devin

California Gets It Right

California's feed-in-tariff (FIT) program could provide an effective strategy for bringing solar electricity into the nation's energy mix. The state plans to use elements from the program implemented in Germany, but one of the key innovations involves awarding power purchase agreements based on the results of a reverse auction. The California Public Utilities Commission recently approved a RAM (reverse auction mechanism) mandating that utilities procure 1,000 MW of distributed solar generation. Most solar FIT programs use a fixed subsidy-level allocation with a date-based trigger, but this requires policymakers to correctly predict a workable subsidy level; an over-subsidized market can result in aggregate payouts of subsidy dollars that are much higher than anticipated or budgeted. However, with a reverse auction, the market sets the incentive level by forcing developers to compete to participate in the program. California would only allow projects between 1 MW and 20 MW in size to participate, as a way to encourage growth in distributed generation. The regulators have proposed the first large-scale solar program that has the potential to accomplish all of the major policy objectives.

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From "California Gets It Right"
Public Utilities Fortnightly (07/11) Vol. 149, No. 7, P. 8 Hall, Mike

Featured Articles

Integrating LEDs into Energy Efficiency Programs
Integrating DSM and Supply-Side Options – The Business Disconnect

By: Lisa Gartland, Opinion Dynamics, and Randy Gunn, Navigant



Introduction

Light emitting diodes (LEDs) or solid state lighting, may be the "hottest" emerging energy efficiency technology on the market. Many articles have been written about the technology, competitions have been conducted to try to advance the state of the art, and many conferences have been held to



Lisa Gartland



Randy Gunn

provide information to the energy efficiency industry about this measure. However, with certain notable

exceptions, inclusion of LEDs into energy efficiency programs has been somewhat slow, and efficiency program planners have confronted many uncertainties in how best to integrate these technologies into programs.

LED Technology Benefits

The general benefits of LEDs include:

- Rapidly increasing lumens per watt (LPW). LED's LPW have increased from about 25 in 2003 to 46 in 2009, to a maximum of about 107 currently. However, LED's LPW varies somewhat according to the lighting application. In refrigerated cases, for example, the current LPW is about 55.
- Long lifetimes. The lifetimes for LEDs can be as long as 100,000 hours, several times as long as linear fluorescent lamps and CFLs.
- Easily dimmable. This feature adds design options, especially in outdoor applications where the conventional technologies – metal halide and high pressure sodium – are not dimmable.
- Better light distribution in outdoor and high bay applications. LEDs provide more uniform lighting distribution than metal halide and high pressure sodium, as well as older linear fluorescent applications.
- Work well in cold weather. Unlike many other lighting technologies, LED performance actually improves in cold weather. However, accumulations of snow and ice can be an issue for some applications.
- Failure is not abrupt. LEDs dim over time, but do not fail abruptly as most other lighting technologies do.
- Contain no mercury or lead. Most other more efficient lighting technologies contain mercury or lead.

Current Applications for LEDs

The current status of LEDs for many common applications is summarized below:

- Exit signs and traffic signals: LEDs are almost always specified for new applications. A 2006 federal standard requires LEDs of 5 watts or less in new exit sign applications. However, many incandescents and CFLs are still in place, presenting retrofit opportunities.
- Refrigeration case lighting, parking lot fixtures and street lighting: LEDs are already being frequently used for new applications and retrofits. LEDs' low energy use results in less waste heat for refrigeration systems, which adds to their energy savings. LEDs have good performance in cold weather conditions which make them good choices for all these applications. LEDs emit a whiter light than high pressure sodium systems. LEDs' longer lifetimes also mean lower maintenance costs.
- Directional Lighting: LEDs can be made to project light in a very directional manner, as is desired in spot lighting and task lighting. LEDs are already being frequently used for these applications. LEDs generally have the highest LPW of the common lighting sources for this application.
- LED linear replacement lamps: LED replacement lamps for linear fluorescent systems still do not perform as well as T8 fixtures. Complete LED fixture replacement may become a more viable application in the medium term. Some misinformation about LED performance exists in the marketplace on this application.
- LED incandescent replacements: The products that are currently on the market have similar LPW as CFLs, but cost up to \$40. Products have been announced by Osram Sylvania and Switch Lighting for release within the next six months that are supposed to achieve 100 LPW (compared to 40-70 for CFLs) at prices of \$20 or more.

Integrating LEDs into Energy Efficiency Programs

Energy efficiency program administrators can integrate LEDs into energy efficiency programs in many ways. Some of the more common and productive ways are summarized below:

- Provide information to customers. Considerable misinformation has been and is still being circulated about LEDs. Objective and factual information from third party testing can be quite helpful to customers as they're making decisions about whether to purchase LEDs.
- Include LED traffic lights and exit signs in prescriptive or custom lighting retrofit EE programs. These measures are most commonly included in custom programs, but prescriptive programs are simpler to administer and provide greater certainty for customers about how much of a rebate they will receive.
- Include other LED applications in custom rebate or similar programs. These applications can have considerably varying energy and demand savings depending on the existing systems and the specific LED systems that are chosen.
- Consider waiving or reducing benefit-cost requirements for LEDs. Many EE programs require all measures to pass the TRC test or program administrator (utility) test. Some LED applications will not be cost effective enough to pass these tests. To help LEDs gain broader market penetration, program administrators could reduce the

benefit-cost ratios required to be less than one for an interim period until LEDs' cost effectiveness improve for some applications.

Lisa Gartland is the director of engineering at Opinion Dynamics Corporation, while Randy Gunn is the managing director at Navigant Consulting. You can contact either authors at lgartland@opiniondynamics.com or randy.gunn@navigant.com

Integrating DSM and Supply-Side Options – The Business Disconnect

By: Daniel Violette, Navigant Consulting, and Denise Richerson, Tucson Electric Power

Demand Side Management (DSM) faces new challenges as the industry works to meet expanded goals for energy efficiency (EE) and demand response (DR). The development of DSM resources that help ratepayers meet their energy needs as part of a least cost portfolio will likely not occur until DSM is mainstreamed within a utility and the overall energy industry as an important line of business – just like distribution and generation.



Denise Richerson



Dan Violette

Electric and gas utilities have worked under the long-standing paradigm that allows for earnings on capital intensive investments. However, regulators and industry stakeholders are now asking utilities and energy providers to take a different approach to business – one that requires the provision of services into a market. This can be viewed as a change in the regulatory compact between utilities and ratepayers. Now, future energy needs are to be met by a mixture of capital investments and market services where both provide significant business challenges to the utility.

A substantive shift in resource investment into DSM (both EE and DR) can be designed to:

- Lower overall costs of meeting customer energy needs.
- Reduce system cost risks and enhance reliability:
 - Allow for more lead time for investment decisions by slowing the rate of growth in demand.
 - Portfolio effect reduces the risks associated with fuel price increases, and increases resource diversity.
 - Lower the risks associated with environmental compliance costs.

Traditional industry approaches toward DSM planning, operations and management, staffing, and customer relationships are likely to be challenged by expanded goals for DSM. Consider the business processes that are involved in building a DSM power plant that can be upgraded, revised, and elements replaced as needed (e.g., new programs) to allow for DSM to deliver benefits to ratepayers and provide the portfolio benefits outline above.

Delivering DSM resources and services requires the development of a number of challenging business processes. Lack of resources and attention to these business processes may result in a lack of quality in designing and providing DSM resources. DSM business processes include:

Process #1: Product development – New service lines and products need to be conceptualized to fill the pipeline for energy services that can deliver on the promise of the DSM power plant.

Process #2: Value propositions need to be developed and customer assessments are needed to appropriately package the DSM products and elements for both end-use customers and trade allies.

Process #3: Marketing – A good value proposition does not guarantee success in the market. It has to be combined with an effective marketing program that communicates this value.

Process #4: Sales – Sales and marketing are sometimes confused. Marketing works on awareness and intent, while sales involves getting the end-user or trade ally to sign on for the product or service.

Process #5: Delivery Channels – All products and services require a supporting delivery infrastructure that works within the industry to ensure that adequate levels of product and services are, in fact, available to customers and trade allies.

Process #6: Fulfillment – This involves getting the service or technology to the customer or trade ally once they have signed up for the program. This involves building up the execution infrastructure that provides the high efficiency air conditioner, delivers the upgraded energy management system to commercial customers, or the financial support of trade allies in producing high-efficiency architectural and design plans for new and remodels of residential and commercial buildings. Once someone signs on for a DSM service such as increased ceiling insulation, there has to be some assurance that a truck with the insulation and the personnel to install the insulation will arrive at the customer site within the appropriate time frame.

Process #7: Quality Control – All products and services require appropriate quality control. The installation of the high-efficiency AC unit can be undermined by inappropriate refrigerant charging, or plans for a high-efficiency building or lighting retrofit can be undermined by poor installation practices. Estimates of losses due to non-quality activities can be as high as 30 percent in some DSM programs. DSM resources depend upon many of the building and construction trade allies for delivery and installation. There can be uneven quality among trade allies in their implementation of a DSM element.

Process #8: Financial Accounting and Reporting – Many DSM resources involve incentives and/or payments based on successful installation. Appropriate tracking and financial systems are needed to manage the overall DSM budgets and payouts to trade allies and customers.

Some DSM skeptics view the resource as unreliable, which leads to another important business process – management of uncertainty. However, integrated resource plans show that supply-side resources can easily have plus/minus 100 percent uncertainty in ratepayer revenue requirements just a few years after the decision to develop a supply-side resource has been made. Consider the sizeable uncertainties in supply-side decisions stemming from:

- Uncertain and volatile fuel costs.
- Delivery of fuel when needed to the plant.
- Cost of construction with basic elements such as steel, concrete, and other needed commodities showing considerable cost variation year-to-year.
- Uncertain costs of environmental compliance (e.g. costs associated with carbon).
- Uncertain growth in demand which can result in a large-scale capital investment not being needed as expected in the supply plan.
- Uncertain operations of the plan, i.e. not meeting expected heat rates or higher than expected forced outage rates.

Examinations of integrated resource plans show that uncertainties are explicitly analyzed and addressed as part of the plan. This shows a level of planning sophistication that has yet to become adopted in DSM planning. Once identified, plans for managing and mitigating the impacts of these uncertainties can be developed. This leads to a final business process for DSM resources:

Process #9: Addressing Uncertainty – Every business plan for the delivery and implementation of a DSM resource should, like supply-side plans, identify uncertainties that could result in under delivery of the resource or having the resource and include plans that can be implemented to mitigate the impact of these uncertainties. Only a few utilities and DSM providers currently address this important business process in a meaningful manner.

Delivering DSM resources that can be counted on as a long-term component of resource portfolio has been hampered by not mainstreaming this activity as an important line of business within utilities and the energy industry. A weakness in the business view of DSM is illustrated by the lack of integration across EE and DR that could take advantage of synergies across the business processes discussed above.

Finally, the provision of DSM resources involves an investment in both operating capital and human resources which are scarce in most firms. Providers of DSM resources deserve to earn a fair return on their investment.

The National Association of Regulatory Utility Commissioners (NARUC) passed what has become a widely cited resolution in 1989 which has subsequently been supported by numerous other NARUC resolutions:

RESOLVED: Executive Committee of the National Association of Regulatory Utility Commissioners (NARUC) urges its member state commissions to:

1. Consider the loss of earnings potential connected with the use of demand-side resources;
2. Adopt appropriate ratemaking mechanisms to encourage utilities to help their customers improve end-use efficiency cost effectively; and
3. Otherwise ensure that the successful implementation of a utility's least cost plan is its most profitable course of action.

The rationale behind these policy statements remains unchanged, if not strengthened, by today's energy markets; and, the risk mitigation aspects of DSM as part of a supply portfolio. As DSM professionals, communicating the business of DSM as a challenging enterprise that requires trained professionals, quality implementation, and the attention of management is an important task. At the same time, regulators and other stakeholders need to recognize that the best financial incentives may not be the minimum incentive to induce utilities to undertake DSM, but an opportunity for a fair financial return on scarce resources committed to a DSM effort and one that garners management attention by making it a mainstream business process within the utility.

Providing adequate returns on DSM investments will not substantially change the cost-effectiveness of DSM programs; however, it will provide management and the industry with the incentive needed to deliver high quality, innovative programs and services that provide ratepayers with the highest return on the DSM investment.

Dan Violette, is the managing director of Navigant Consulting, and Denise Richerson is the director of Demand Side Resources at Tucson Electric Power (TEP) and UniSource Energy Services (UES).

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AESP News

Updates from AESP

100% Winner with a 75% Answer



Do you recall that in the July issue, we challenged members to come up with a great answer to the question: "How many Facebookers, Tweeters and YouTubers does it take to screw in a CFL?" Well, we got loads of brilliant entries. Thank you to all of you who participated, including our winner Steve Lawrence who is the energy efficiency program manager at Georgia Power. His winning answer was: "75% less than to screw in an incandescent lightbulb." Brilliant Steve!

Important Notice about AESP Fall Conference

Registrations are now taking place for "Customer Behavior & The Smart Grid" in Dallas for Oct. 3-6. Register today at aesp.org

The deadline for the discounted block room rate for the Fall Conference ends Sept. 13, next Tuesday. To reserve your room at the special rate of \$165, please call the Westin Galleria (972) 934-9494 as soon as possible.

Plus, if three or more are attending, you can save money by registering 3 people for \$1,440. (Note – all three must register at the same time and pay by credit card).

It's Raining Training

We listened to your training needs and scheduled several regional training courses in Portland, OR and Albany, NY.

*Principles of Evaluation, Measurement & Verification or
P2 – Level II DSM Program Planning Design & Implementation
Oct. 25–26, Portland Hilton, Portland, OR*

*Principles of Evaluation, Measurement & Verification or
E2 – Level II DSM Economics & Evaluation*
Nov. 8-9, Desmond Hotel, Albany, NY

Group members – you can use points to attend! [Click here for course details and to register.](#)

Put Training On Site and save \$1000

If you have more than 10 people in your staff who need training, have AESP bring the training to your facility instead. Schedule your flat rate on-site training course to be delivered before December 31, 2011 and your organization will also enjoy a \$1000 discount for a two-day course, or \$500 for a one-day course. Contact suzanne@aesp.org. Available courses are:

- Intro to the Principles of Demand-Side Management (DSM)
- Principles of Research & Evaluation (EM&V)
- Elements of Marketing your Energy Efficiency Program
- E2 Economics and Evaluation Level II DSM
- P2 Program Planning and Implementation Level II DSM

Get your opinions in before Sept. 22

Many of the best ideas to help improve and grow AESP come from YOU – our members! There's still time to give us your feedback and opinions in our annual AESP Member Survey. [Click here](#) and participate now. It takes less than 5 minutes to complete.

Tour SolarTAC with Rocky Mountain Chapter

See the largest solar technology test bed in the United States. Join the Rocky Mountain chapter for a tour of the Solar Technology Acceleration Center (SolarTAC) in Aurora, CO on October 13th! The trip will provide a glimpse of the facility itself and insights into the multiple R&D projects underway and planned—including performance evaluations of flat-plate PV, concentrating PV (CPV), and central solar thermal (CSP) systems. Stay tuned for more details via email or contact robin.maslowski@navigant.com to learn more.

Report from the Northwest Chapter

The chapter hosted Oregon State Representative Jules Bailey at their August event. Rep. Bailey talked about some of the key pieces of legislation that were addressed during the 2011 session such as the reincarnation of the state's business energy tax credits, the governors "cool schools" initiative, and future legislation pertaining to energy ratings for buildings. The chapter meets monthly on the third Wednesday. [Check out our web page](#) for details of our next gathering or contact Chapter President, Jonny Holz at jholz@peci.org.

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New and Renewing Members

New Individual Members

Andrew Braatz, KEMA
Ben Marcus, NEEA
Bethany Glinsmann, Navigant Consulting
Cynthia Meade, Dynamic Energy Group
Denise Rodriguez, Tampa Electric Company
Ed Reyes, Converge
Evan Hays, Niagara Conservation
Grace Sedurifa, San Diego Gas & Electric
Jeff Kiec, Geavista Group
Kathy Barbian, We Energies
Kevan Espy, Cobb EMC
Mary Hubbell, PowerDirect
Michelle Costello, San Diego Gas & Electric
Mike McKenzie, GDS Associates
Nathan Holder, Advanced Energy
Nurdan Cornelius, Cobb EMC
Patrick Nork, PEI

New Group Members

EnergySavvy
Alliance Technologies

Renewing Group Members

AM Conservation
Enbridge
Michaels Energy
Pentair Water Pool and Spa
Servidyne
Southern California Edison
Tetra Tech

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News Releases and Announcements

[Aclara Utility Customers Dominate E Source Study of Customer-Facing Web Sites](#)

[Cape Girardeau Takes Progressive Approach to Lighting with Innovative LED Street Lights](#)

[Osram Sylvania expands Octron® T8 Florescent Family with Octron 800 XV™ lamps](#)

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