

State of the Industry
REPORT
2014

**Annual Survey of
Energy Efficiency and
Demand Response
in the U.S.**

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EXECUTIVE SUMMARY

This 2014 State of the Industry Report was prepared by the Association of Energy Services Professionals (AESP). It summarizes the findings from a survey conducted by AESP to identify emerging trends, opportunities and barriers regarding the energy efficiency and demand response sectors.

As the leading professional association for energy services professionals, AESP's mission is to provide professional development opportunities and resources to its members and to promote the transfer of knowledge in our industry. This report was developed as a way to help AESP achieve its primary objectives of serving its diverse membership base and sharing knowledge and expertise across the industry.

The 2014 State of the Industry Report reflects the comments and opinions expressed by the respondents including new areas such as smart meter deployment, access to customer data, and its impact on energy efficiency and demand response programs.

Overall Conclusions:

- The energy efficiency and demand response sectors continue to be a growing field offering new opportunities and strategies.
- The most promising opportunities are at the state level – driven by continued interest in improving state and local building codes and standards.
- Consistent with the findings from last year, commercial and industrial (C&I) customers continue to offer the greatest potential for energy efficiency activities.
- Interest in behavioral-change programs continues to grow, expanding into the C&I sector as well.
- Successful energy efficiency programs will rely on creative ideas to capitalize on emerging trends, and be able to adapt to changing market trends, standards, and new regulatory requirements.

These annual surveys provide AESP members an opportunity to offer their opinions on the ways in which the energy efficiency and demand response sectors continue to grow and evolve.

INTRODUCTION

The 2014 State of the Industry Report was prepared to provide an analysis of current industry trends and barriers. As the leading professional association for energy services professionals, AESP's mission is to provide professional development and promote the transfer of knowledge in our industry. This report was developed to help AESP achieve one of its primary objectives of serving its diverse members and sharing knowledge.

REPORT METHODOLOGY

The AESP Publications Committee developed a survey that was fielded online to approximately 2100 members of AESP in December 2013. A total of 276 members responded, representing a 66% increase in responses compared to the 2013 State of the Industry Report. The survey questions focused on identifying emerging trends and opportunities in the energy efficiency/demand response industry.

ACKNOWLEDGEMENTS

The 2014 State of the Industry Report represents a highly collaborative effort of the members of the AESP Publications Committee, whom we would like to thank for their generous donation of time, ideas, and enthusiasm in contributing to the development of the survey and interview instruments. In particular, we'd like to thank:

- Katherine Johnson and the staff of Johnson Consulting Group
- Laura Orfanedes, former Vice Chair – Publications Committee, Cadmus

Finally, thanks to the AESP members, thought leaders and industry experts whose insights have helped in the development of the content presented in this report.

Sincerely,

Subid Wagley, U.S. DOE and Matt Daunis, Black Hills Energy, Co-Vice Chairs – Publications Committee

KEY FINDINGS AND IMPLICATIONS

The energy efficiency and demand response sectors continue to be growing with new opportunities and strategies being offered to reach residential, commercial and industrial (C&I) and institutional customers.

Employment within the energy efficiency/demand response sector continued to increase in 2013 according to two-thirds (66%) of respondents. The rate of the increase is slightly higher than noted in the previous report.

Moreover, this trend is expected to continue in 2014 with 56% of respondents saying that they expect employees working in energy efficiency/demand response in their organizations to increase. These trends are summarized in Figures 1 and 2.

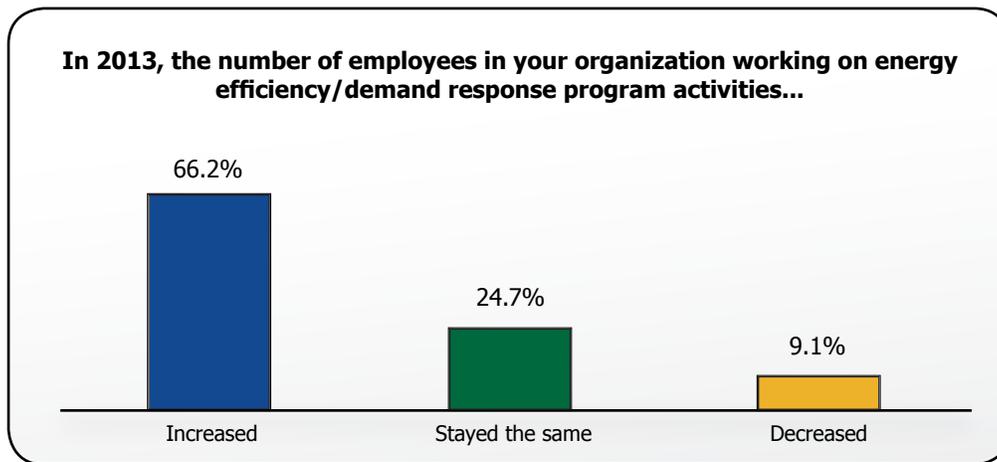


Figure 1: Employment Continues to Grow in the Energy Efficiency/Demand Response Sector

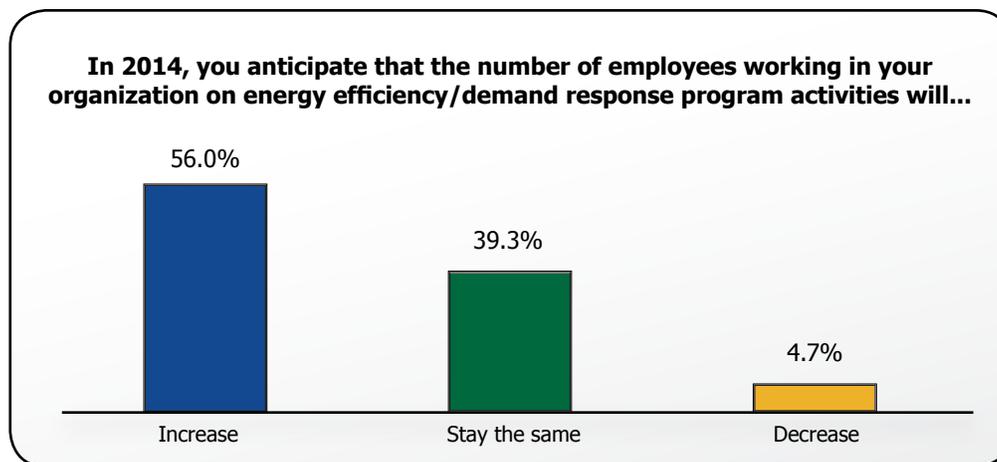


Figure 2: This Trend Will Likely Continue in 2014

Most Promising Trends in Energy Efficiency/Demand Response

The survey respondents were asked to identify the “most promising” trends and overwhelmingly they pointed to the increased level and overall interest in energy efficiency activities at the state level which is consistent with the findings from the previous report.

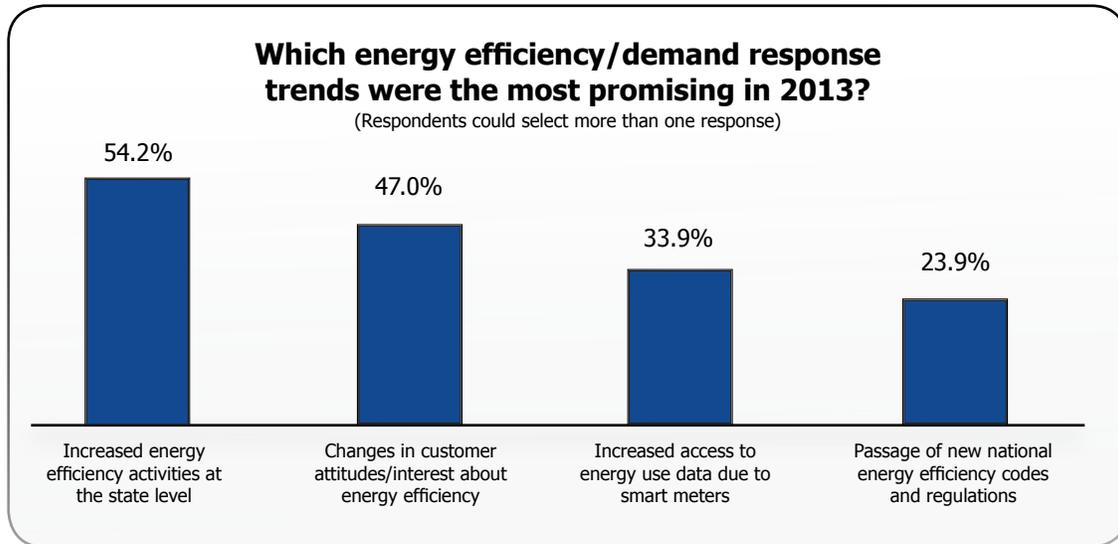


Figure 3: Increased Energy Efficiency Activities at the State Level is a Promising Trend

Selected Comments on Emerging Trends

The AESP respondents identified a number of emerging trends in the industry, including changes in building codes and standards, changes in the regulatory environment and the continued interest in behavioral change programs. For example, 34 percent of the respondents suggested that there was an increase in customer access to energy use data due to smart meter deployment and 54 percent of the respondents believed that energy efficiency activities increased at the state level, whereas 47 percent of the respondents suggested that customers’ interest about energy efficiency increased in 2013. Selected comments:

"Continued support of aggressive energy efficiency efforts in the state."

"Increase in energy efficiency activities at the local level - for example, city-wide building benchmarking initiatives."

"Changing utility regulatory environment to deal with increased energy efficiency and distributed generation."

"New emphasis on building energy performance is driving demand for change through energy efficiency workforce training programs such as building operator certification in energy efficiency and strategic energy management."

"Increased knowledge on climate change and setting of suggested carbon cost by government and internally by energy corporations such as Shell."

"Growing evidence that governments, using ESCOs, are realizing the gains - and elected officials facing reelections are realizing that they can help constituents financially by supporting EE activity."

"Increased interest in behavior-change programs, which broadly includes O&M training."

The industry has recently seen developments on local energy policies aimed at the C&I sector, particularly commercial buildings, which also include multifamily and government buildings that require building benchmarking, and data disclosure or ratings. Each local policy has its own unique characteristics such as the information to be disclosed, building types and other relevant energy information. These data tend to provide information that is key to decision-making on multiple fronts, including identifying opportunities for energy efficiency improvements. Likewise, corporations are raising awareness around the topic of climate change by implementing initiatives such as recycling, biking or walking to work, turning off lights when not in use and other measures that use less energy.



Most notably, the president of the United States, in his recent State of the Union address, called for reduced carbon pollution, less energy waste and preparedness for the challenges posed by climate change. AESP members' responses echo the president's Climate Action Plan that support increases in energy efficiency activities and renewable energy installations.

Most Promising Sectors for Energy Efficiency/Demand Response Activities

Consistent with the findings from last year, most respondents believe that commercial and industrial (C&I) customers continue to offer the greatest potential for energy efficiency activities. Specifically, among the survey respondents, 45% indicated that small C&I customers, a sector that is difficult to reach, offer the most opportunities in advancing energy efficiency/demand response activities, while 39% suggested that large C&I customers offer the most opportunities for advances in energy efficiency.

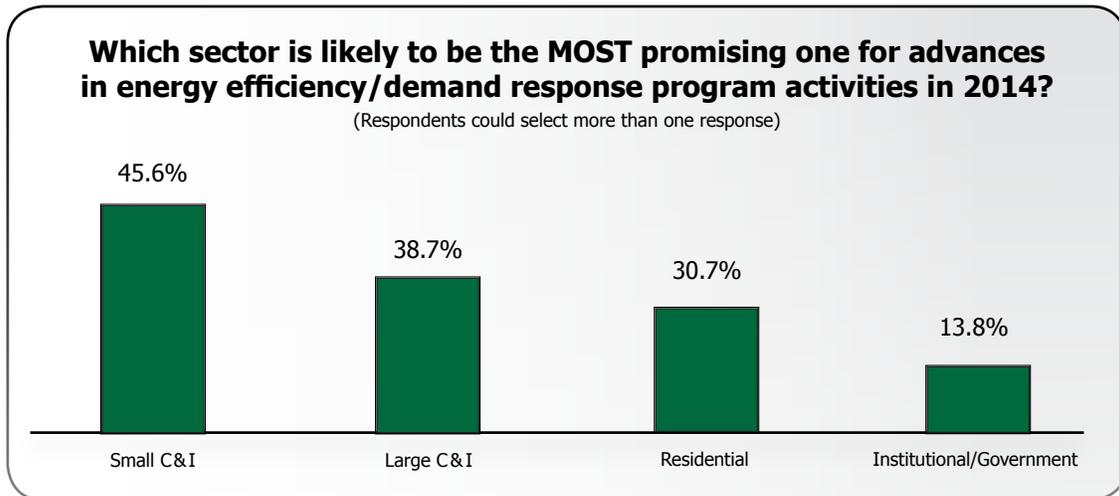


Figure 4: The C&I Markets Are the Most Promising Sectors in 2014

Selected Comments Regarding C&I Sector Opportunities

Based upon the responses in Figure 4, the majority of respondents believe that the large C&I and small C&I customers offer the greatest energy savings potential. The selected comments from the surveyed members below illustrate how the C&I sector uses more energy, which leads to the necessary capital required to invest in advancing technologies and energy efficiency to support their needs.

"Large C&I appears to still have the largest energy savings potential, especially as more holistic programs emerge."

"Industrial is our lowest-cost DSM and therefore the best able to withstand lower avoided costs."

"The large C&I sector has the capital to invest in advanced technologies to support their needs. Residential, small C&I, and institutional customers tend to install more common/proven technologies."

"There are simply more ways in which a large C&I customer uses energy which leads to greater opportunities per customer."

"Large C&I customers are generally more sophisticated and have better access to capital."

"Large C&I appears to still have the largest energy savings potential, especially as more holistic programs emerge."

Selected Comments on the Small Business Sector

Several respondents also pointed out emerging opportunities in the small C&I sector, voicing strong opinions about the small C&I sector taking precedent among state agencies and utilities running the programs. Respondents also noted that universities and colleges have demonstrated willingness to be the leaders and early adopters of energy efficiency and demand response practices. Some have begun to include energy efficiency and demand response courses in their curricula. Another noteworthy point is that some businesses – particularly those in the construction trade such as window and door manufacturers, HVAC manufacturers, etc. – view energy efficiency as an added value offered to their customers.

"It seems that utilities and state-run programs are definitely taking more of an interest in small business."

"There are many new approaches to the small C&I [small business] sector starting to take hold."

"There is a lot of untapped potential in small C&I in most of the country and colleges/universities, in particular, have demonstrated a strong willingness to be leaders/early adopters for EE."

"The small- to medium-sized C&I customers are the most untapped and difficult to reach market beyond a direct install program."

Consistent with the findings from previous reports, the majority of respondents viewed the residential sector as the least promising, as mentioned by 39 percent of respondents.

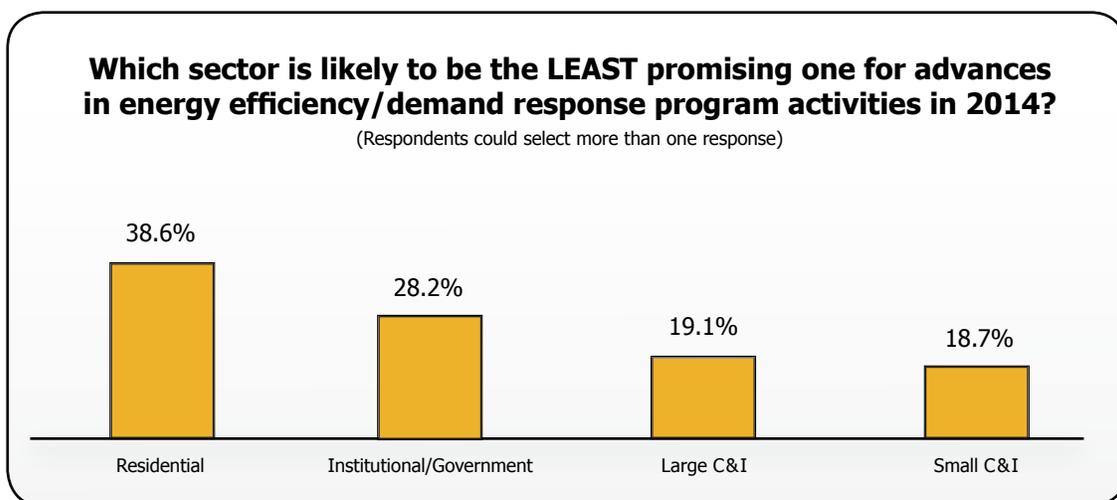


Figure 5: Least Promising Sector for 2014

Selected Comments Regarding the Residential Sector

The AESP survey respondents also provided insights regarding the opportunities in the residential sector. While challenges remain in the residential sector to achieve energy savings goals, more consumer-focused awareness and practices may take programs to the next level.

"As energy efficiency awareness and practices increase on a consumer level, the residential sector is inevitably going to become more efficient."

"Savings are getting to the point where you have to go deeper and tap the areas that have not been accessed much for energy savings."

Challenges in Reaching Customer Segments

Respondents also described the ongoing challenges encountered in reaching customer segments; challenges which include the lack of funds to invest in energy efficiency measures, and the lack of interest in energy efficiency improvements.

Several respondents also observed that changes in regulations have had a definite impact on new technologies, especially lighting. For example, Canada introduced new lighting standards to improve the efficiency of household bulbs sold in Canada. With this latest amendment, the Canadian standards are now aligned with the standards in the United States. While this has raised the baseline, and made it harder to differentiate the savings; these savings will provide more energy efficiency choices, thus encouraging more innovation among energy efficiency technologies and practices.

"With new lighting regulations in Canada, it will be interesting to see what opportunities arise."

Another challenge mentioned by respondents is the "opt-out" policy that has been making headlines recently in states that allow certain market segments to opt-out from energy efficiency and demand response programs. As numerous industry reports suggest, these policies tend to negatively impact momentum, otherwise going strong for the country's energy efficiency and demand response industry. For example, an excerpt from the Final Order of 12/2/13 in Iowa Utilities Board plan approval docket EEP-2012-0001, page 25 stated: "All utility customers, even those who do not directly participate in energy efficiency programs, benefit from the avoided cost savings that are the primary goal of energy efficiency programs..."

However, as much as there are challenges in tapping into existing resources, there are ongoing efforts that are examining emerging technologies in the residential sector. For example, the U.S. EPA's ENERGY STAR® Super Efficient Dryer Initiative (SEDI) is working on adding clothes dryer technology to the energy efficiency list.

The EPA completed its scoping report in 2011, which investigated the potential energy savings from efficient dryer technologies. As comments from the respondents suggest, finding ways to measure energy savings from the behavioral aspects of the program are already underway and identified as a bright spot in the energy efficiency scene.

Selected comments that reflect these opinions are listed here:

"[Residential] is a very challenging sector to work with due to lack of capital and inability/reluctance to borrow money for energy projects."

"Residential is our highest cost DSM and therefore the least able to withstand lower avoided costs."

"The easy tasks for residential energy efficiency, lighting and appliances, have already been implemented. Building shell measures need to be addressed and these are more intrusive and expensive. There is opportunity for residential behavioral change programs, but these are more difficult to quantify for the purposes of regulatory approval."

"Residential is going to be tough with lighting standards removing some savings. We are getting traction on clothes dryers (through the Super Efficient Dryer Initiative). This will help but we need more focus and attention on emerging technology for residential in order to move further."

"In my view, the residential consumer sector is still recovering from the Great Recession of 2008. Home building is still sluggish, and residential consumers still have restricted buying power due to the sluggish economy."

"The small C&I sector lacks the time and financial resources to install advanced technologies. Most advanced technologies take time to research and come at a cost premium."

"Large C&I customers want to opt-out of programs."

"With new lighting regulations in Canada, it will be interesting to see what opportunities arise."

"Low natural gas prices are limiting investments in energy efficiency changes."

"It is hard to get a majority of large C&I customers to focus on energy efficiency when it is a small part of their overall cost to produce their product."

KEY DRIVERS FOR ENERGY EFFICIENCY PROGRAMS

Saving money continues to be the key driver to induce customers to participate in energy efficiency and demand response programs which is consistent with findings from the 2013 report. (See Figure 6). This is especially true, given the concerns about the sluggish economy, as illustrated in Figure 7.

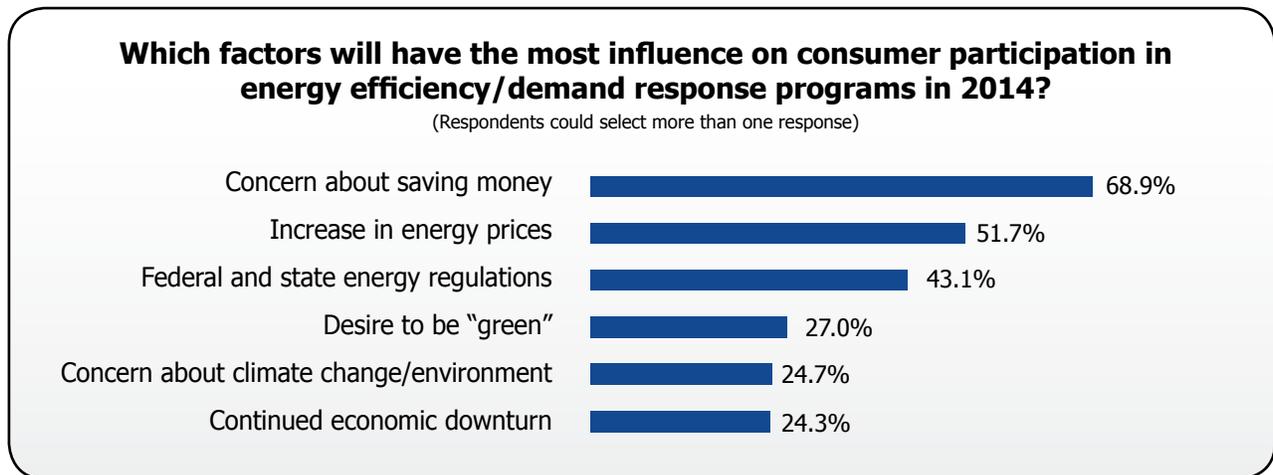


Figure 6: Factors Motivating Customers

Motivations to Participate in Energy Efficiency/Demand Response Programs Remain Consistent

- Key motivations again include wanting to save money, energy efficiency being the right thing to do, and wanting to help the environment.
- The desire to save money continues to be a leading motivation among respondents with 69% stating it had the most influence on consumer participation.

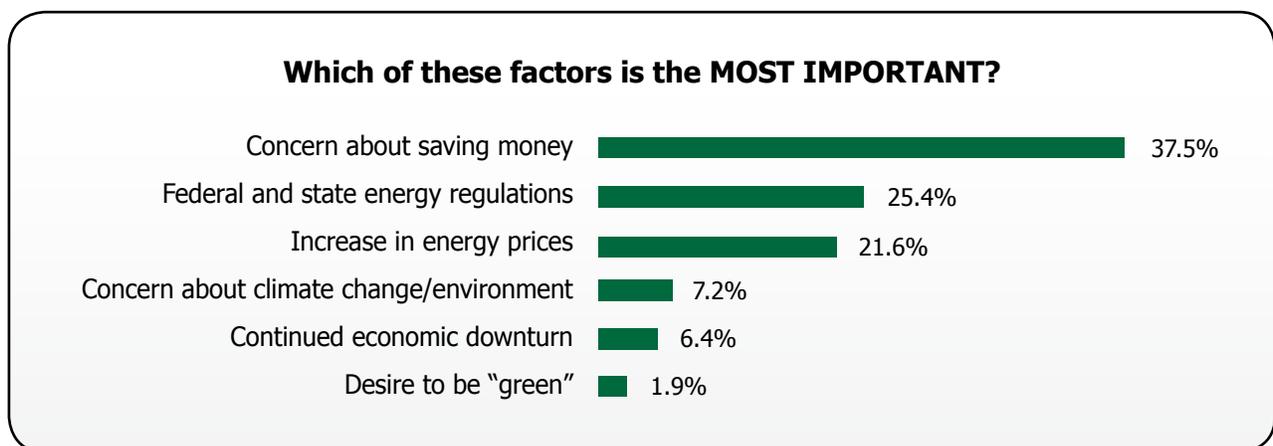


Figure 7: Saving Money Continues to Be the Biggest Driver for Motivating Customers

BARRIERS TO IMPLEMENTING ENERGY EFFICIENCY/DEMAND RESPONSE PROGRAMS

Unfortunately, even though customers may be interested in pursuing energy efficiency activities, barriers still remain. Lack of awareness continues to be the major barrier mentioned by nearly one-half of the participants.

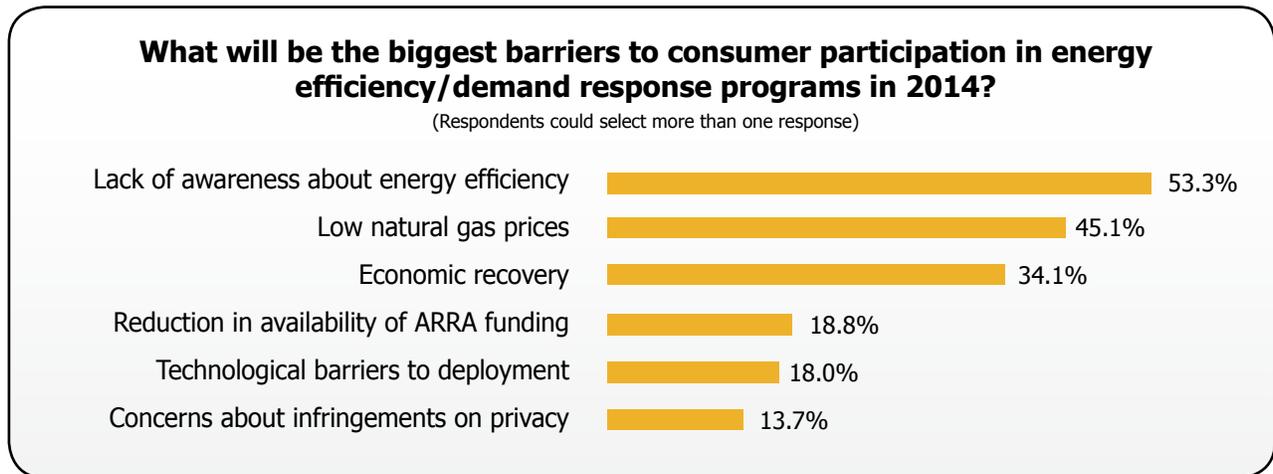


Figure 8: Lack of Awareness About Energy Efficiency Remains Biggest Barrier

Barriers to Taking Action Still Exist

Understanding the potential impact of barriers to taking action is important for strategic planning purposes. Lack of awareness about energy efficiency and low natural gas prices were the two biggest barriers cited by the respondents.

Having an effective marketing and promotion campaign can certainly help increase customer awareness and participation. Low natural gas prices mean lower avoided costs for natural gas making it more difficult to have cost-effective natural gas energy efficiency programs.

Which of the following emerging program-related issues do you think will have the strongest impact on the energy efficiency/demand response industry in 2014?

(Respondents could select more than one response)



Figure 9: Behavioral Programs and Data Mining Are Emerging Industry Trends

Which of these emerging program-related issues is the MOST IMPORTANT?

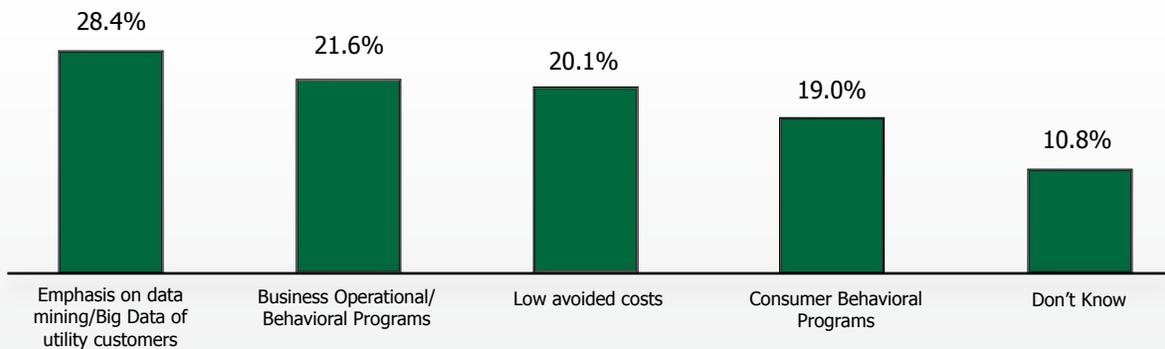


Figure 10: Data Mining is the Biggest Trend for Utility Customers

Most Important Program-Related Issues

- With the emergence and installation of smart metering, the emphasis on data mining/Big Data from utility customers was chosen as the most important program-related issue.
- Following closely behind are behavioral programs for both businesses and consumers.

Energy Efficiency Policy Trends

According to the survey respondents, emerging trends for 2014 are energy efficiency savings estimates from the implementation of codes and standards. These include: codes and standards (47%) for buildings; standardizing the methodologies for calculating energy savings in both the economic tests (42%) and Evaluation, Measurement & Verification Protocols (40%); standardizing deemed savings estimates (25%); and Statewide TRMs (22%). In summary, the energy efficiency industry is maturing and developing standard methods and approaches to both estimating and calculating energy savings.

Which of the following policy-related issues do you think will have the greatest impact on the energy efficiency/demand response industry?

(Respondents could select more than one response)

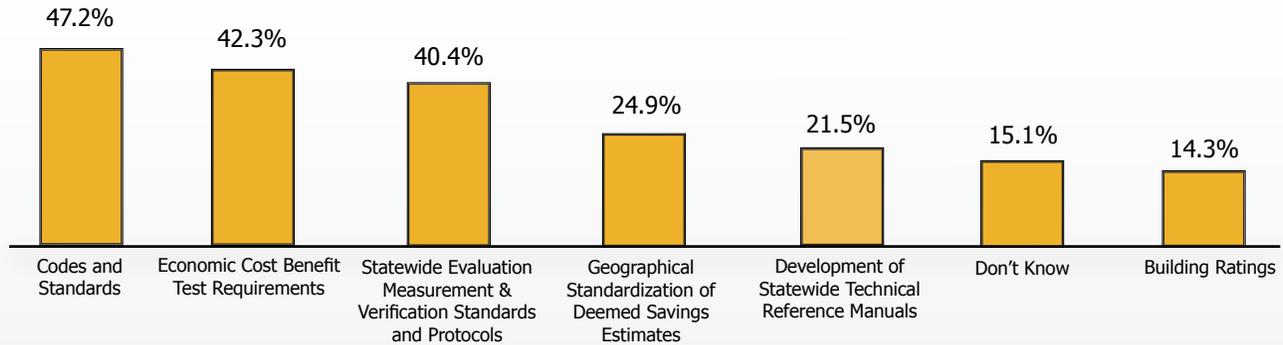


Figure 11: The Industry is Moving Toward Increased Standardization of Savings Estimates

Which of these factors is the MOST IMPORTANT?

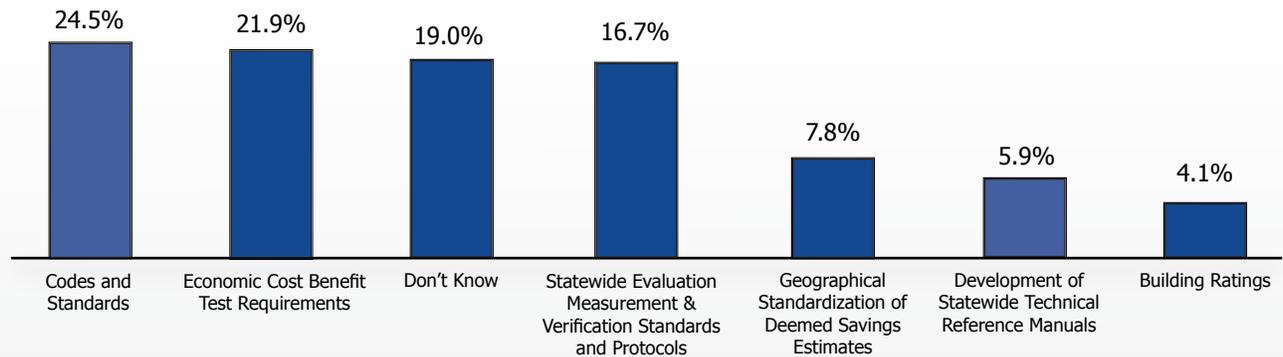


Figure 12: Codes and Standards are becoming an Important Policy Trend

AESP Respondent Demographics

One-third of respondents work for a utility (32%) and 40% are in consulting. More than one-half have worked in the industry for less than 10 years (55%) indicating that this industry is experiencing a new wave of workers entering the field. Of note, 30% of the survey respondents had worked in the industry for five years or less.

Type of Organization Employing Respondents



Figure 13: Most AESP Respondents Work for Utilities

Most (55%) Have Worked in this Industry 10 Years or Less

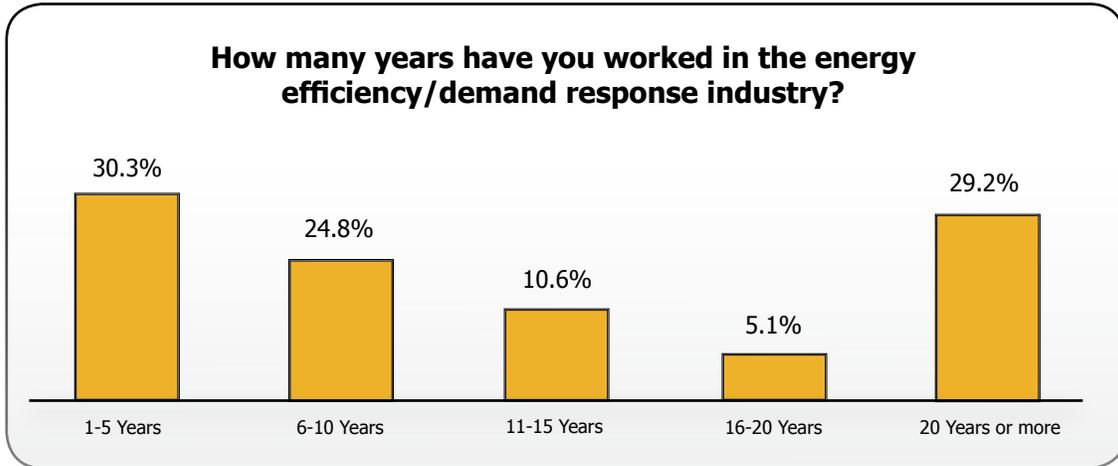


Figure 14: Most Respondents Have Worked in this Industry 10 Years or Less

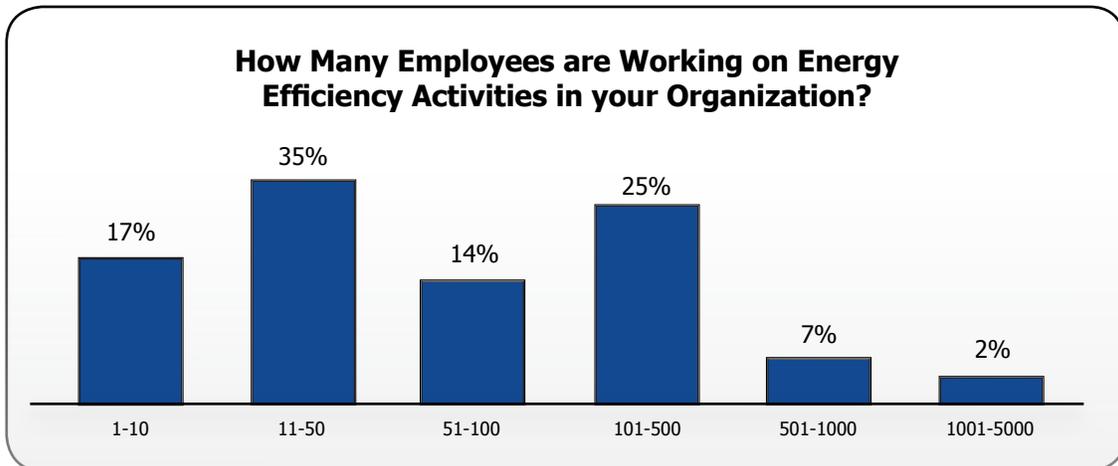


Figure 15: Number of Employees Working in Energy Efficiency/Demand Response in Respondents' Organizations

AESP respondents were coast-to-coast representing 35 states and Canada

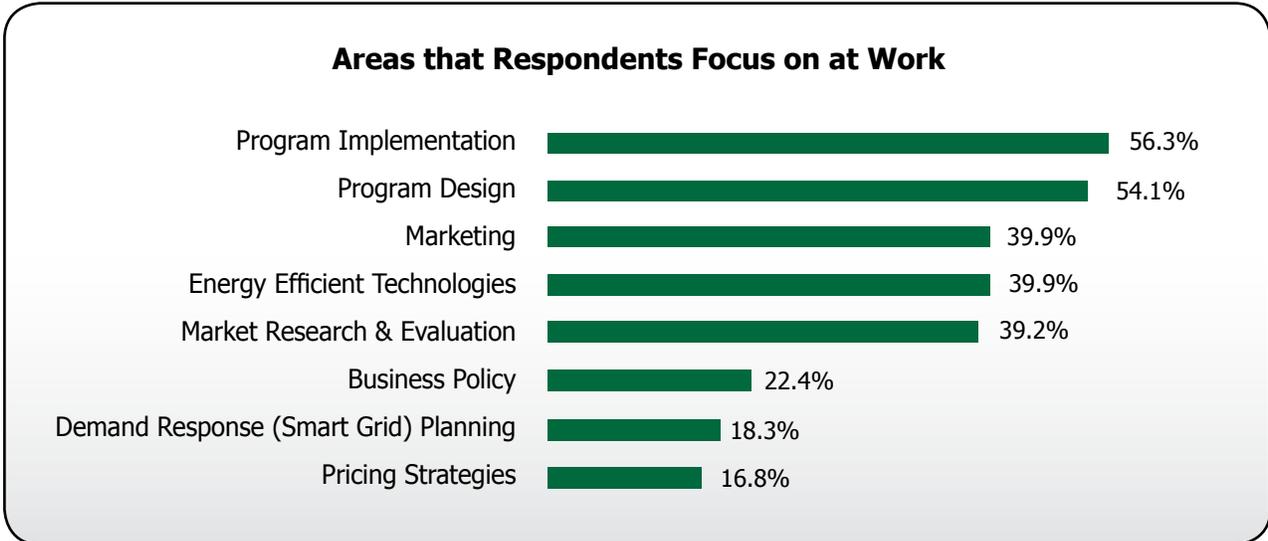


Figure 16: Most Work on Program Implementation and Program Design

Top Twelve Locations of Respondents	
Respondents' Locations	Number of Respondents
MA	27
OR	26
CA	24
WI	20
NY	18
MN	15
GA	13
CO	9
AZ	8
IL	8
PA	8
WA	8

Table 1: Top Twelve Locations of Respondents