



Research Report

EXECUTIVE SUMMARY: **Smart Grid Consumer Survey**

Preferences and Attitudes about Smart Meters,
Home Energy Management, Demand Response
Programs, and Smart Appliances

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Published 4Q 2010

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Section 1

EXECUTIVE SUMMARY

1.1 Introduction and Overview

As the momentum of utility smart grid initiatives continues to increase, questions of consumer acceptance are of greater importance for the industry. During 2010, industry discussion of consumer issues has intensified, particularly in the wake of loud consumer pushback related to smart meter deployments in the Pacific Gas & Electric and Oncor service territories. Utilities are seeking effective ways to communicate the benefits of smart meters to their customers while at the same time addressing consumer concerns about billing, privacy, control, and health issues.

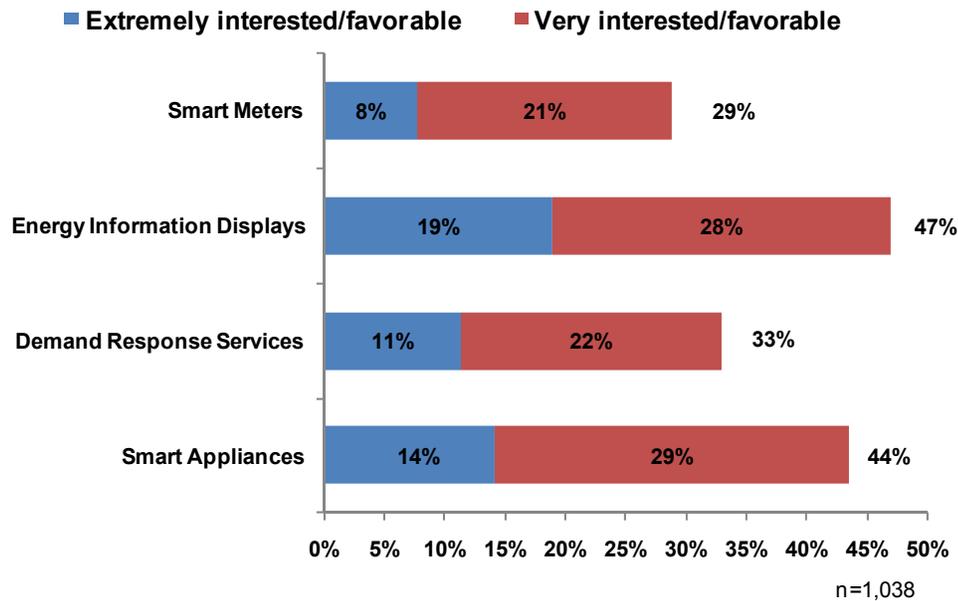
Meanwhile, key players in the smart grid applications market continue to wrestle with developing the business models and user experiences that will resonate best with consumers. Most notably, several dozen home energy management companies are jockeying to find their place in this emerging market. These companies are seeking to determine the extent to which consumers would prefer to actively monitor and control energy usage in their homes. They are also looking to establish which user interfaces will be preferred for those purposes. Likewise, significant unresolved questions remain about the proper business model for the residential demand response sector. Also note that while connected devices such as smart appliances will soon arrive on the scene, little is understood about the dynamics of consumer demand for the capabilities that smart appliances will enable. Finally, overhanging all of these issues is yet another question: What will the utilities' role be in terms of providing energy services on the customer side of the meter?

1.2 Key Findings

In order to establish a framework for understanding consumer interest and attitudes related to a select group of smart grid concepts, Pike Research conducted a survey of 1,042 U.S. consumers, based on a nationally representative and demographically balanced sample, in the summer of 2010.

Chart 1.1 provides an overview of consumer interest in the various smart grid concepts considered for the purposes of this survey.

Chart 1.1 Interest In/Favorability toward Smart Grid Concepts



(Source: Pike Research)

While energy information displays (EIDs) and smart appliances enjoy relatively strong levels of interest, consumers are less enthused about smart meters and demand response (DR) programs. The following is a summary of key findings on each topic.

1.2.1 Smart Meters

- Familiarity with the concept of smart meters was quite low, with 56% of respondents describing themselves as “not very” or “not at all” familiar; 35% fell in the latter category.
- 29% stated that they were either “extremely” or “very” favorable toward the concept. Fewer respondents (23%) categorized their opinion about smart meters as “not at all” or “not very” favorable. Ambivalence to smart meters was most common among respondents; 48% said that they were “somewhat favorable/somewhat unfavorable.”
- Strong opinions, whether favorable or unfavorable, were strongly correlated with familiarity; there were significantly stronger favorable opinions for those most familiar with smart meters. This should be encouraging for industry participants concerned about negative publicity over the last 18 months.
- The highest incidences of “neutral” opinions occurred among the respondents who described their familiarity with the concept as “somewhat familiar/somewhat unfamiliar” (58%), “not very” (57%), or “not at all” familiar (52%).
- Increased consumer access to electricity usage information was identified as an important benefit by 52% of respondents; this was the most frequent benefit cited. Improved reliability of electricity service was not far behind, with 46% of consumers identifying this benefit as important to them.

- The most popular reason for an unfavorable opinion about smart meters, chosen by 59% of respondents, focused on concerns that the devices would lead to an increase in electricity bills.

1.2.2 Home Energy Management

- Consumer interest in the energy information display (EID) concept was fairly strong, with 47% stating that they would be “extremely” or “very” interested in using such a device.
- Interest in EIDs was greater among consumers with higher monthly electric bills. Among consumers spending \$200 or more per month on electricity, 60% expressed interest in having an EID, whereas only 43% of consumers spending less than \$100 per month conveyed interest.
- The largest number of EID intenders (38%) stated that they would actively manage the energy usage in their home, as opposed to a more passive or “set and forget” mode of EID usage.
- Dedicated in-home display units (IHDs) were the most popular user interface option, capturing interest from 66% of EID intenders. Web-based dashboards were also selected by a significant number of respondents (53%).
- Consumer willingness to pay for EIDs has diminished since 2009. While 34% of respondents indicated that they would not pay for an EID in the 2009 edition of our survey, 44% of respondents expressed the same view in this year’s survey.
- Nearly all respondents interested in EIDs (92%) selected the electric utility as their preferred provider of energy management services, representing an increase over the 83% of panelists choosing this option in 2009.

1.2.3 Demand Response Services

- 33% of survey participants stated that they would be “extremely” or “very” interested in demand response (DR) programs. Note that for the purposes of this survey, Pike Research described these programs as “energy savings plans.”
- Consumers with higher electricity bills were more likely to express interest in DR programs. There was a 16-point difference in interest levels between the group spending the least on electricity each month (less than \$100) and the group spending the most (more than \$300).
- 43% of respondents stated that electric bill savings of 20% or less would be sufficient incentive for them to sign up for a DR service plan. 71% would accept savings of 30% or less.
- 57% cited the idea of losing control of appliances, devices, and lighting in their home as a reason for their lack of interest in DR. Similarly, 51% stated that they are wary of their electric utility gaining “Big Brother”-like control over electricity use within their home.

1.2.4 Smart Appliances

- 43% of respondents stated that they would be “extremely” or “very” interested in purchasing a smart appliance, assuming the price was right and the electric bill savings would be enough to make it worthwhile.
- Early adopters of technology showed much higher levels of interest (65%) in smart appliances when compared to the entire respondent base (44%).

- Electricity savings of 20% or less from a smart appliance was acceptable to 38% of respondents expressing interest in smart appliances. About two-thirds (67%) felt that savings of 30% or less would be a satisfactory level to make a smart appliance worth purchasing.
- While the majority of smart appliance intenders (68%) were comfortable paying at least 10% more than the price of a conventional appliance, about one-quarter of consumers (23%) indicated that a smart appliance would have to be the same price as other appliances in order to consider it for purchase.
- Among respondents who stated they would not be interested in smart appliances, the most frequently cited reason was that they would not be able to control their own appliances (49%). 39% expressed a concern about the “Big Brother” aspect of their utility monitoring their electricity use.

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SCOPE OF STUDY

Pike Research has prepared this report to provide participants involved in the smart grid market with a study of consumer demand for smart grid products and services, including smart meters, home energy management tools, demand response programs, and smart appliances. One of the major objectives of the report is to impartially assess levels of consumer interest in smart grid products and services as a means of enhancing product planning, positioning, pricing, and marketing strategies. Pike Research also examines consumer willingness to pay for these products and provides an evaluation of key attitudes and behaviors that are relevant to this market.

Great care was taken in constructing a survey questionnaire that would yield the most accurate and unbiased results possible. However, it should be noted that consumers often have difficulty providing survey responses that will accurately predict their purchase behavior for products that have not yet been introduced in the market, or those for which consumer familiarity is low.

SURVEY METHODOLOGY

Pike Research conducted a web-based survey of 1,042 U.S. consumers in the summer of 2010 using a structured online questionnaire. The survey invitation was sent to a nationally representative and demographically balanced sample of consumers who are members of a large online panel. Respondents were offered a chance to win prizes in exchange for their participation. The margin of error for these survey results is +/- 3% with a 95% confidence interval.

Published 4Q 2010

©2010 Pike Research LLC
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