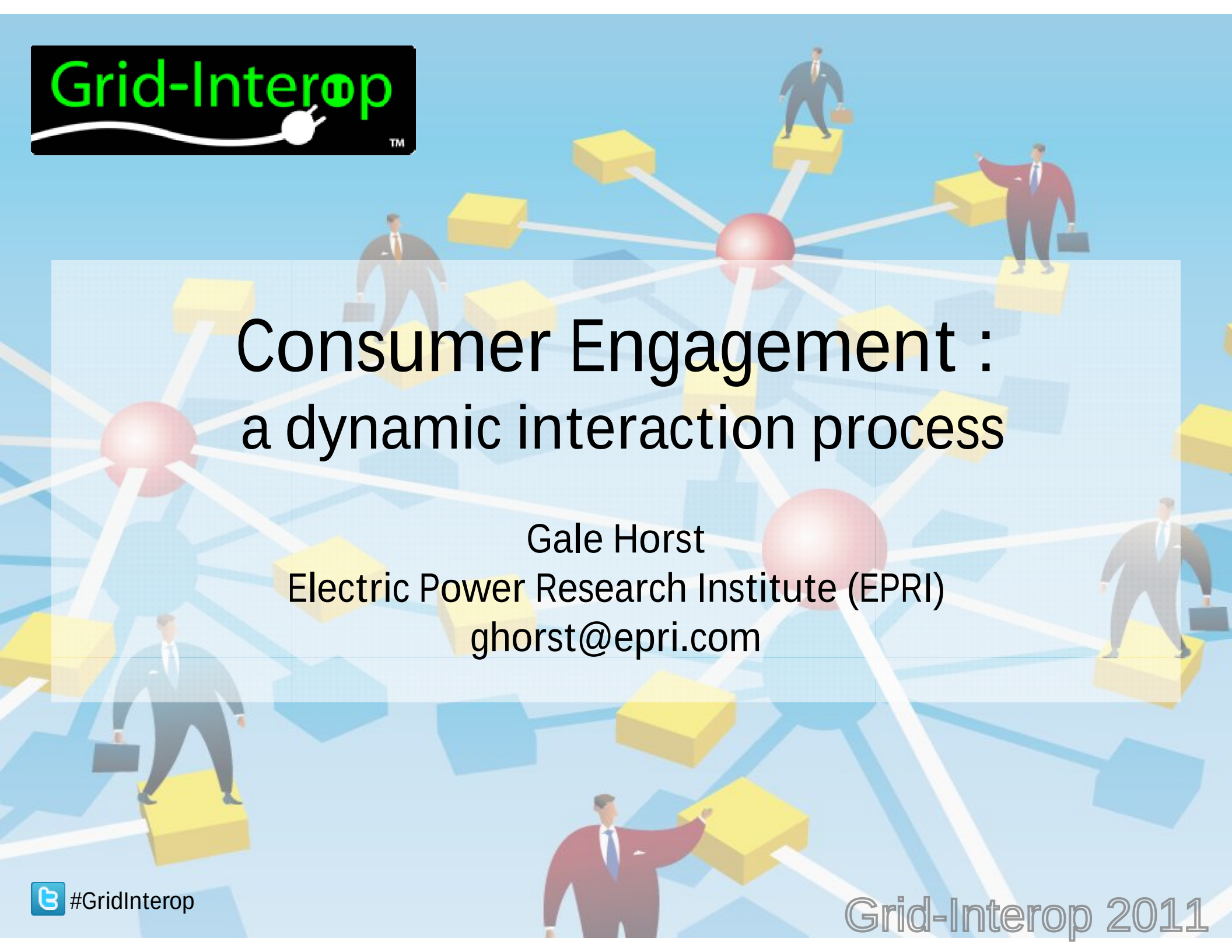

Consumer Engagement :
a dynamic interaction process

Gale Horst
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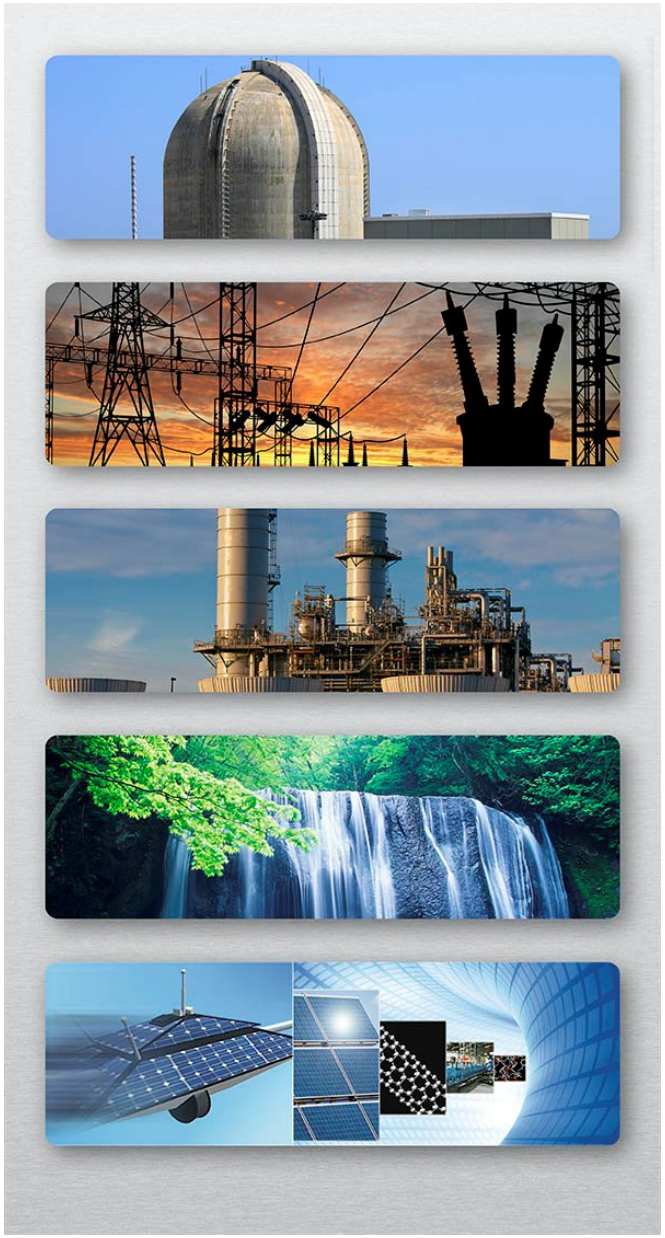


EPRI | ELECTRIC POWER RESEARCH INSTITUTE

Grid Strategy 2011:

Consumer Engagement: Facts, Myths & Motivations

EPRI Issue Analysis #: 1024566

Publicly available download at epri.com

Gale Horst - Project Manager

Christina Haddad – Research Assistant

Background: Key Issues

(as outlined by utility members of EPRI SG Demonstration Initiative)

MOTIVATION

Need to understand the key drivers for consumer adoption of the smart grid to be able to relay the value of the smart grid to the customer in their terms.

UNDERSTANDING THE PROBLEM

Need to further define the consumer issues to be addressed and approach those concerns such as customer perception or awareness of smart grid technology.

EDUCATION

Lack of consumer knowledge of key motivating factors. Accurate and consistent information is not flowing to the customer.

COMMON MESSAGE

There is a need for a common story beyond the utility industry that can be utilized by the utilities, suppliers, customer and manufacturers of consumer devices.

The Approach

- **Background Scan** (pre, during, & post interaction study):
- **Private Consumer Interaction Study:**

  Private on-line consumer interaction tool with two groups of participating consumers:

  – With previous knowledge of the SG (“AWARES”)

  – Without previous knowledge of the SG (“UNAWARES”)
- **Three-Step Analysis / Review**
- **Omnibus Study**

The Background Scan

What do we already know from other studies, programs & Pilots?

Influence & Perceptions

- **Who does the consumer turn to for energy information?**
  - **Edison Electric Institute:**

    55% look to electric utility for efficiency information
  - **Boston Consulting Group:** 78% interested in power company providing an in-home solution for monitoring data via a smart meter (70% GE, 67% Microsoft)
  - **Accenture:** 53%; electricity provider first choice for general electricity management information
    - When asked who they trust to inform them on **optimizing** electricity use: Environmental org – 53%, Academic – 51%, Consumer orgs – 49%

Engage diverse mix of stakeholders

Level of Awareness & Engagement

- **Energy conservation education**
  - **Accenture:** noteworthy contradiction between the consumer perception and accurate knowledge of most effective methods of energy conservation
  - Similar issue uncovered in the EPRI study
  - Many consumers not aware of the smart grid, but expressed an interest once awareness is raised

Unaware/Lack Understanding of Smart Grid or Smart Meters	
IBM	60%
Ecoalign	65%
GE	75%

Interactions with a group of consumers over five days

The team wanted first-hand consumer information.

Consumer Engagement Interactive Tool

Tool Used: Private Consumer Interaction Bulletin Board Tool for a select group of participating consumers

- Depth: Participants in this method have been known to respond with surprising depth and clarity.
- Convenience: Anonymity maintained as consumers respond from the comfort and convenience of their home or wherever they opt to log on.
- Efficiency: The electronic bulletin board approach allows us to talk to more people, from more regions in a shorter period of time than with focus groups or in-person interviews.

Main | My Page | Participants | Discussions

Consumer Interaction "iJot" Bulletin Board

Welcome to Utilities research, grh! Here are a few things you can do right now...

Customize Your Page | Add Profile Photo | Add Content

Welcome!

Welcome to our online discussion! My name is Angela and I will be facilitating our discussion.

Instructions

Over the next five days we will be asking you for your opinions on several topics. We ask that you visit the board at least twice a day and participate in the discussion and activities that have been set.

I'll be posting two topics to explore each day—one topic at 10:00 AM ET, (9:00 AM CT, 8:00 AM MT, 7:00 AM PT) and the second topic will be posted at 3:00 PM ET, (2:00 PM CT, 1:00 PM MT, 12:00 PM PT). I encourage you to log in frequently, even if you have already answered the most current question, as I'll be asking follow-up questions to each topic.

When using the discussion board you will be able to see the responses of others to each of the questions. We encourage you to comment on other participants questions or add your own questions.

Please respect that this information is confidential and cannot be shared outside of this discussion board.

Photos

Excerpts form consumer interactions

What are consumer saying
(or NOT saying)?

The “Awares” vs. the “Unawares”

The AWARES group

- Group appeared to be well read.
- Perhaps did more reading in general for the purpose of staying up with current information in general.
- Sources were more specific and in addition to news papers, news, CNN.com etc, included more specific sources such as Discovery, Science Channel, Money, WSJ, National Geographic, technology news feeds and blogs.

The UNAWARES group

- Sources quoted were very specific relative to their assignment to learn about the SG.
- When asked where they would expect to learn, sources tended to be of that type that would reach out to capture their attention. For example: media campaigns, TV, news bill inserts etc.

The INTERNET

- Whether reading online versions of printed matter or seeking specifics on websites, our study indicated that consumers tend to view the internet as a key source of information.

Reasonably accurate smart grid information is available to consumers who are either well read or seek out the information.

Selected Key Learning (1)

Consumers may not have adequate knowledge of their energy consumption to be able to select an effective response.

- This study, and other studies referenced, indicated that consumers may be making ineffective changes with the intent to reduce their energy bill. This could cause consumer frustration and impact program success.

Study participants indicated a desire to know how much electricity they use, when they use it, and how much it costs in time to appropriately impact their monthly bill.

- The consumers in the study assumed that energy consumption information would be provided, by the smart grid, broken down by circuit or by appliance.

Participants, after being educated about smart grid technology, developed an interest and desire to know more and potentially consider personal involvement.

- Consumer education, in addition to being clear, accurate, and concise, may benefit from being a separate effort precursor to any invitation to join a program.
- If awareness and accurate understanding is established first, this may drive motivation and actions as an independent precursor step in the path to create the consumer "pull".

Selected Key Learning (2)

Cost/bill savings and environmental motivators identified as the top two motivators.

- Note that environmental concerns was a distant second
- Toward the end of the week-long interaction study, the perceived value of reliability seemed to increase.

The consumer issue of data privacy surfaced on its own without the topic being brought up by the moderator.

- Several participants mentioned several other data privacy concerns such, as credit card usage, banking information, and purchasing habits, which seemed to soften the concerns about meter data privacy. (This was explored in the Omnibus study)

Participants motivated by environmental concerns, did not appear to have an understanding of the actual environmental benefits of the energy conservation.

- Participants ranked environmental concerns high, yet ranked reducing the need for power plants low in order of importance.
- This may be a disconnect that, if addressed in consumer education, might further engage consumers who value environmental concerns.

Consumer Rankings of SG Benefits

#1 Saving money on your electric bill

#2 Reliability of electricity service to your home

#3 Increased information to control your energy use

#4 Environmentally friendly energy options

#5 Knowing when my home systems are functioning properly.

#6 Home security – remote knowledge of what's going on in your home

#7 Reduce need to put up new power lines

#8 Reduce need to build new power plants

Consumer Rankings of SG Benefits

Example of a possible "Disconnect": Consumers didn't seem to see a relationship

#1 Saving money on your electric bill

#2 Reliability of electricity service to your home

#3 Increased information to control your energy use

#4 Environmentally friendly energy options

#5 Knowing when my home systems are functioning properly.

#6 Home security – remote knowledge of what's going on in your home

#7 Reduce need to put up new power lines

#8 Reduce need to build new power plants

A Consumer-Centric definition ?

The Study tested a consumer-focused definition of the smart grid

The "Smart Grid" is a vision for an updated electric utility equipped with modern communication and computer technology to create a more reliable and efficient electric grid. The smart grid will be more robust, secure, efficient, affordable, and environmentally friendly. Consumers will be able to know how much electricity they use, when they use it, and how much it costs before receiving their monthly bill. In addition to managing energy costs, consumers will have the option to own intelligent, energy-saving, or energy-producing devices that can share both energy and information with the utility grid.

Sample Responses:

"*A utility with modern equipment and technology: What does this mean? Don't they currently have modern* [illegible] *nd efficient?*"

"*How will consumers k* [illegible] *look at daily? Weekly? Monthly? How will they access the information?*"

"*Wow! Awesome! I can't wait to utilize the energy-saving and producing devices especially since they are going to* ***let me know how much electricity I use and when I use it.***"

Consumers seemed to latch onto this phrase and assumed it would be broken down by device (AC, Individual appliance etc)

Compelling Smart Grid Statements

How will the consumers, once the concepts are understood, describe the smart grid or smart grid technology.

- **Compelling Statement #1: <u>Taking the Guesswork out of Managing Energy</u>**

  Smart Grid Technology is a way for consumers to know how much electricity they use, when they use it and how much it costs before they get the bill.

  "I like that the Smart Grid allows me to focus my efforts on what truly makes a difference and have control over what is truly best for me."

- **Compelling Statement #2: <u>A helper for my best intentions</u>**

  Smart Grid Technology will provide opportunities to own intelligent, energy-saving or even energy producing devices that take some of the pressure off me and my family. I can spend time on truly effective methods and not worry about the things that don't make much difference.

  "*I would be extremely interested in this aspect. This 'helper' would assist in taking the pressure off of trying to control costs and issues. This I believe would be the best selling point for Smart Grid Technology.*"

Consumer "Notable Quotables"

- *'With more information and by working together we can all feel like we're accomplishing more for ourselves and for us all."*
- *"Working together doesn't really speak to me. I'm less interested in contributing to an intangible public good and more interested in how this would benefit me personally."*
- *"…Smart grid technology is a road map for managing the energy use in my home. It is a modern system of communication that allows me to have a monitor that provides current up-to-date information so I can know how much electricity I use, when I use it, and how much it costs before I use it. . . . It's like going to the grocery store with a list. Before I go, I know exactly what I need and I buy only what I need, nothing more.*
- *With Smart Grid Technology, I have better plan for managing electricity in my home. My bill and the service to my home are more predictable."*

A Favorite Consumer Quote

"Saving money on your monthly bill, Whenever I see this statement, I know I am going to need to make changes somehow. So my question is, 'Are these changes reasonable?' "

Verifying Learning with a larger group of consumers

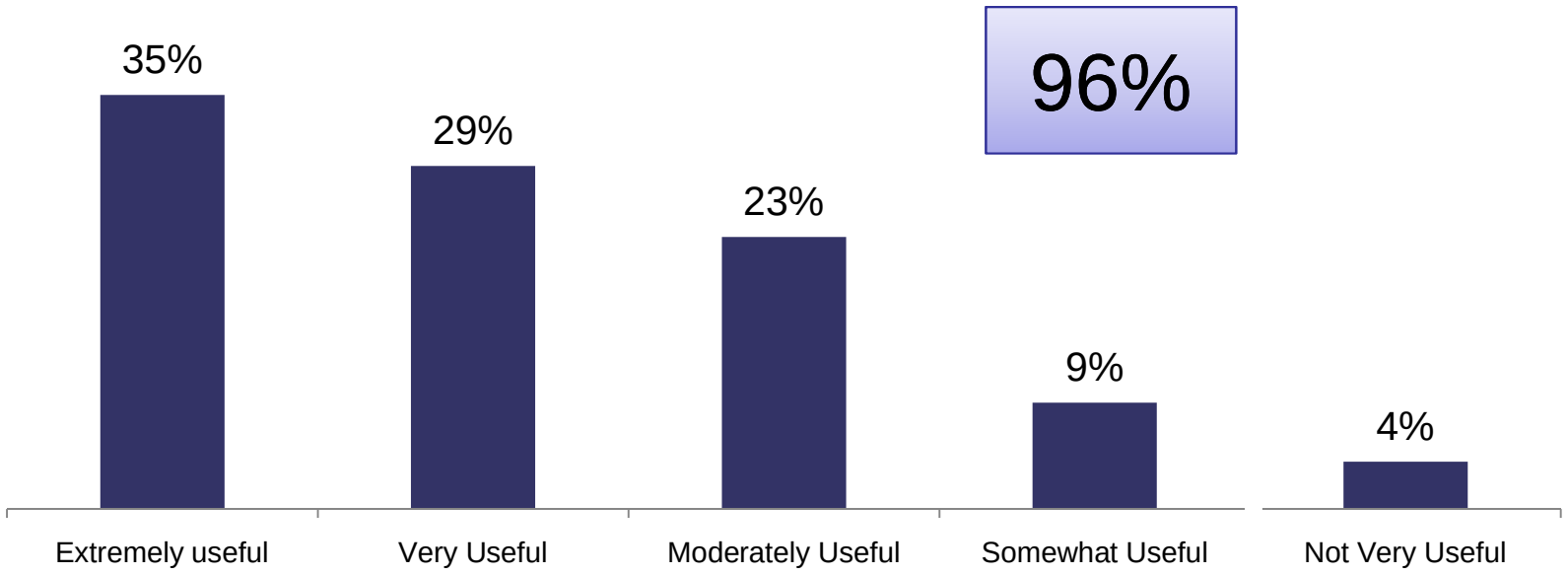
Did we hear what we thought we heard?

Omnibus study: Quantifying key results

- EPRI Team & Smith-Dahmer selected several key items of learning to quantify
- Several questions were created from the interactive consumer study for further study / validation
- A separate group of 1,000 survey respondents selected to represent a variety of demographics.
- Omnibus Study focused on:
  - Usefulness of select consumer smart grid technologies (utilization and/or ownership)
  - Usefulness of additional information
  - Relative ranking of meter data privacy

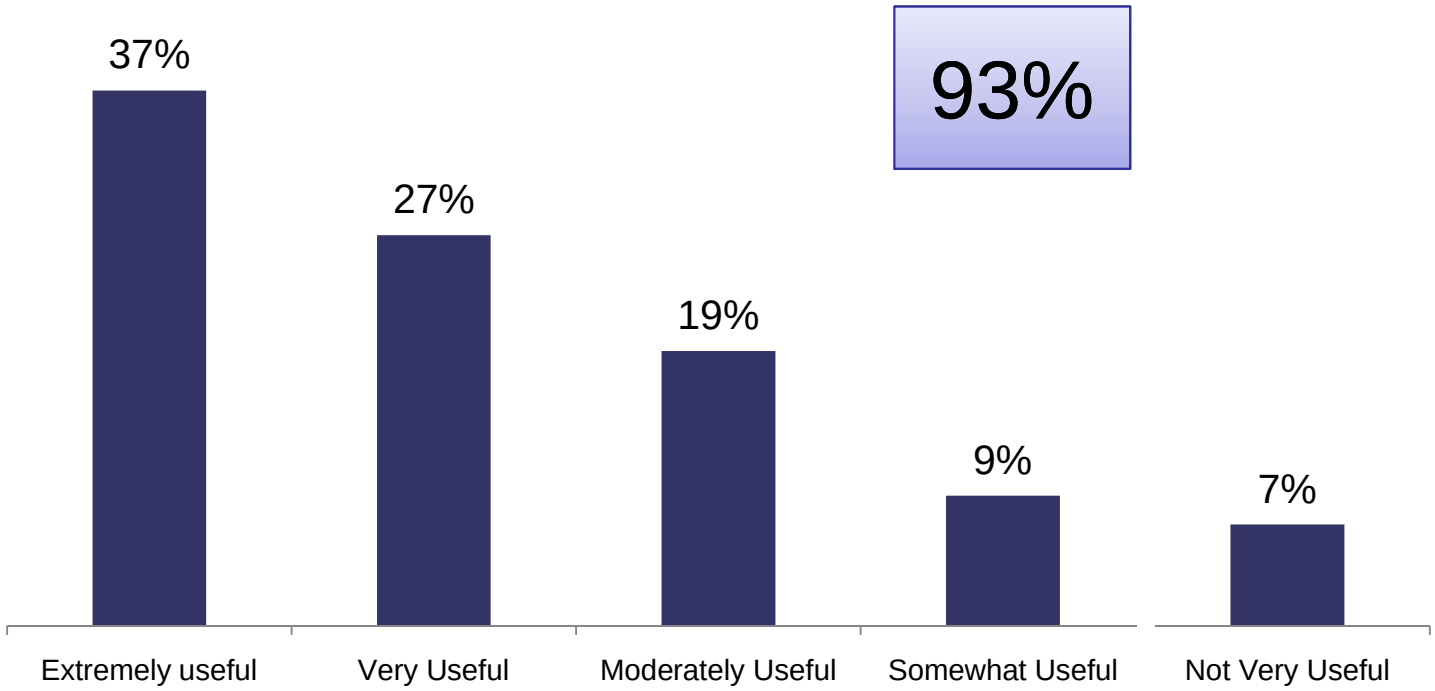
64% of respondents feel this very useful.

Relative to managing your monthly electric bill, how useful would it to be able to *automatically turn off lights and appliances not being used and give you the ability to schedule lights and appliances to run based on your energy conservation goals?*



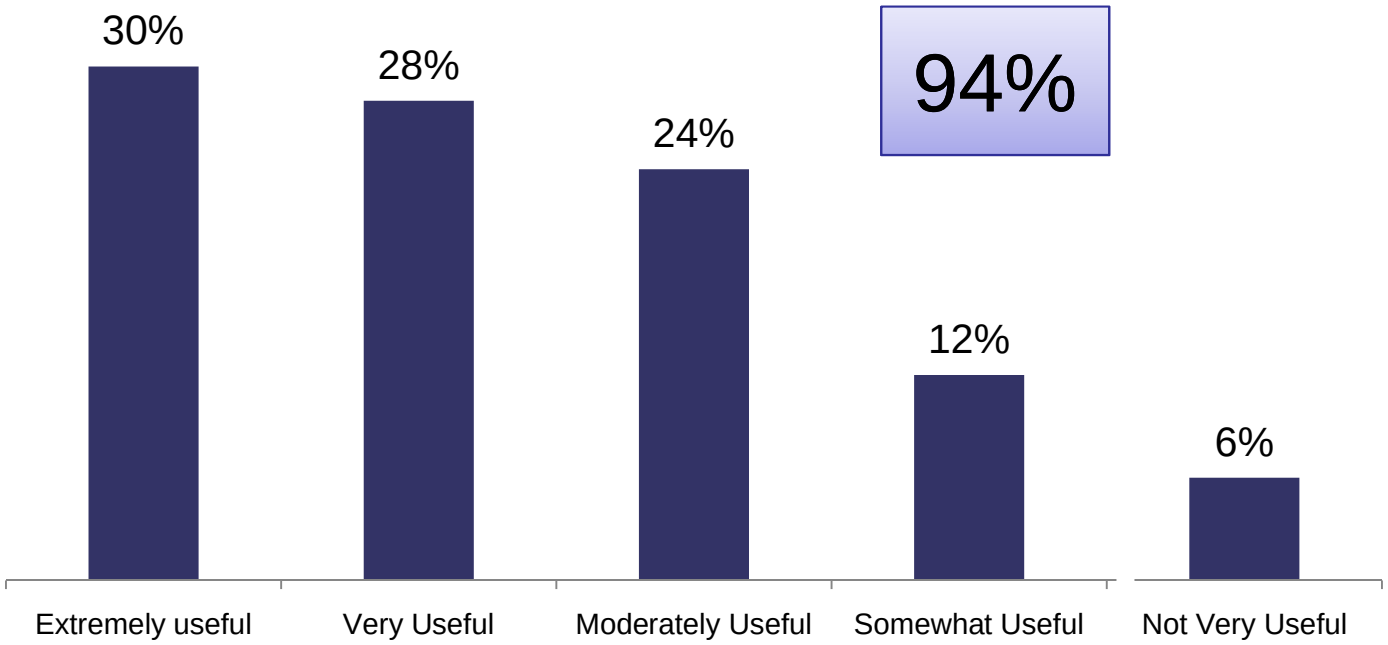
64% of respondents feel this very useful.

Relative to managing your monthly electric bill, how useful would it to be able to *know how much electricity you use when you use it, and how much it costs before receiving your monthly bill?*



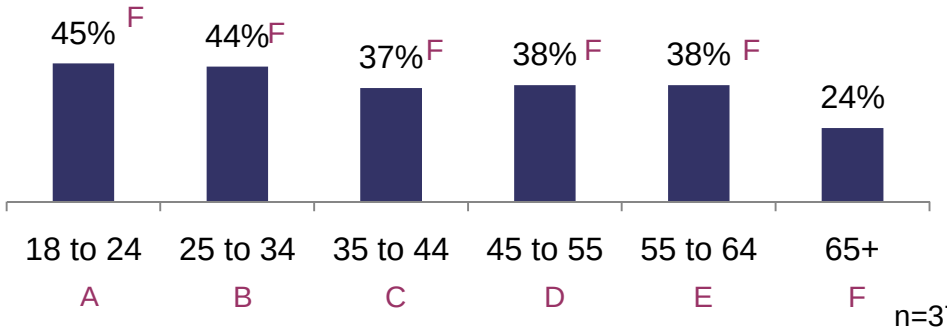
58% of respondents feel this very useful.

Relative to managing your monthly electric bill, how useful would it to be able to *have options for owning intelligent, energy-saving or energy-producing devices that share energy and information with the grid?*



Similar consumer response up until age 65

Automatically turn off lights and appliances not being used and give you the ability to schedule lights and appliances to run based on your energy conservation goals.



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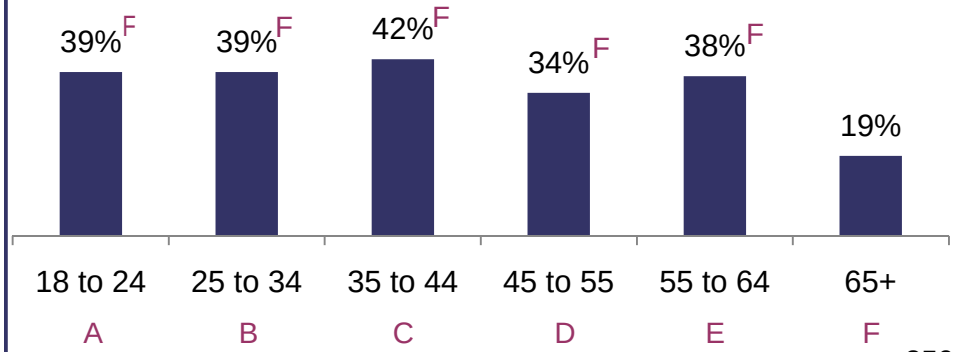
Know how much electricity you use when you use it, and how much it costs before receiving your monthly bill



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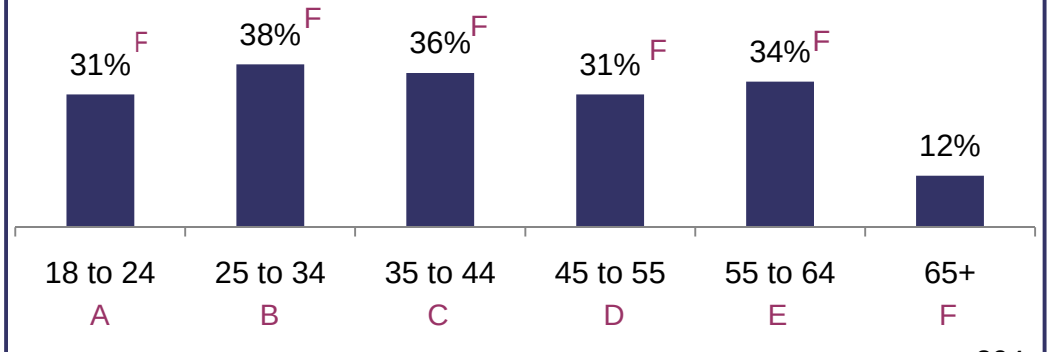
Have options for owning intelligent, energy-saving or energy-producing devices that share energy and information with the grid.



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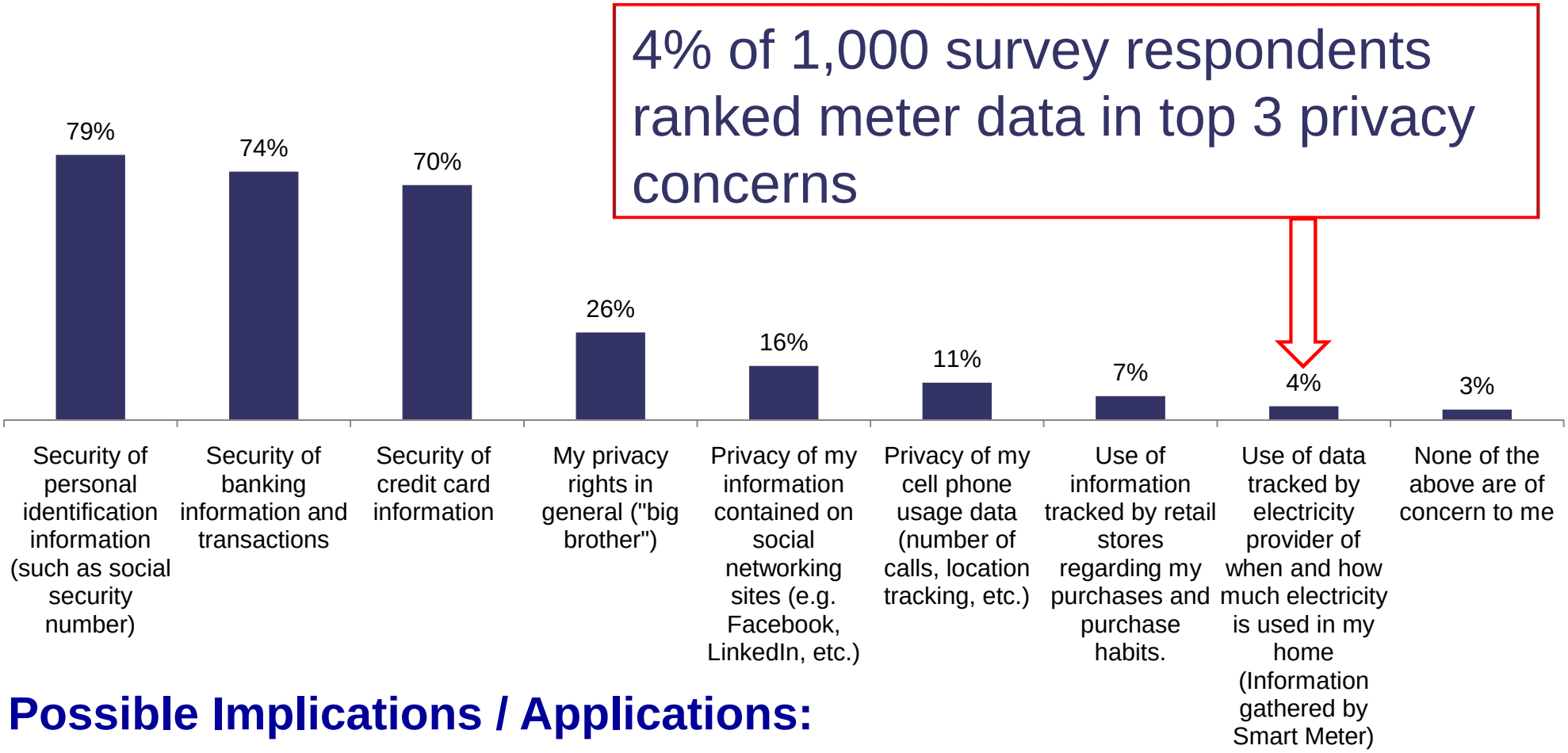
A/B/C/D/E/F Indicates percentage is significantly higher than noted percentage at a 95% confidence interval.

Top three privacy concerns.

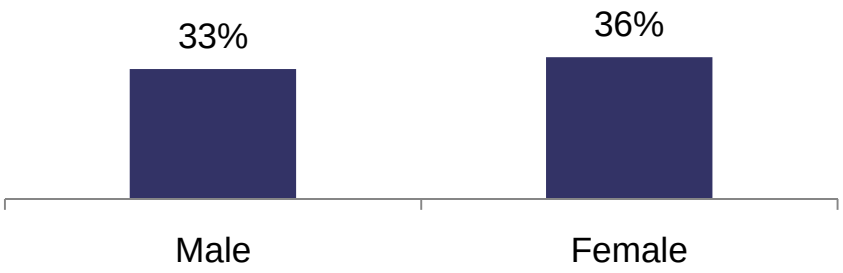


Possible Implications / Applications:

- Address privacy concerns before they emerge.
- Reassure consumers about what information will be gathered .
- Inform consumers about the purpose and use of information.
- Help consumers put the information into perspective

Gender differences appear minimal

Know how much electricity you use when you use it, and how much it costs before receiving your monthly bill



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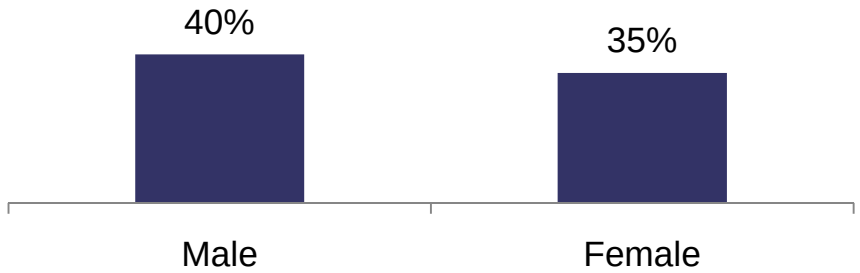
Automatically turn off lights and appliances not being used and give you the ability to schedule lights and appliances to run based on your energy conservation goals.



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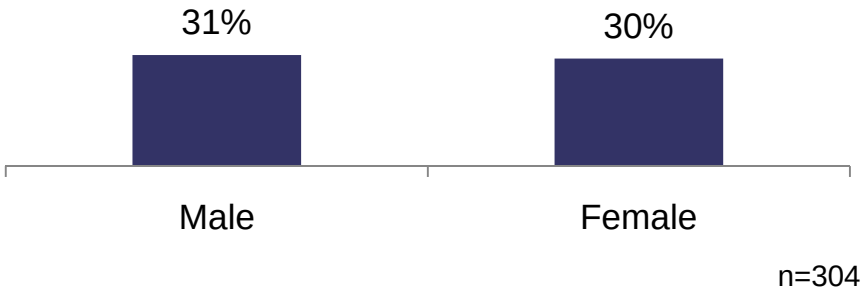

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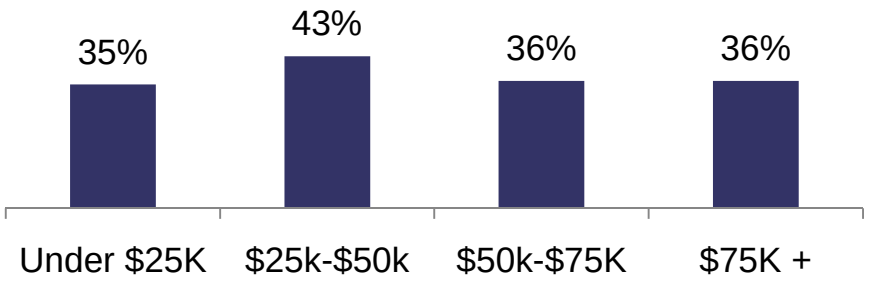
Minimal difference among income levels

Automatically turn off lights and appliances not being used and give you the ability to schedule lights and appliances to run based on your energy conservation goals.



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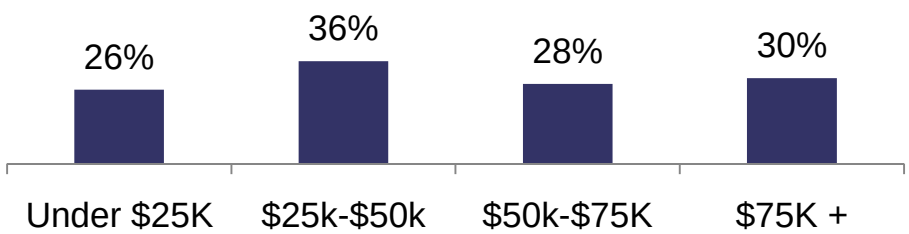

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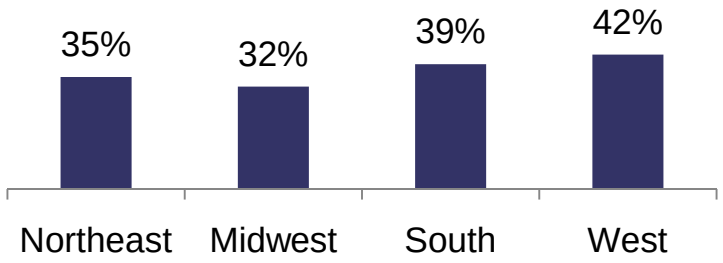
Minimal regional differences

Automatically turn off lights and appliances not being used and give you the ability to schedule lights and appliances to run based on your energy conservation goals.



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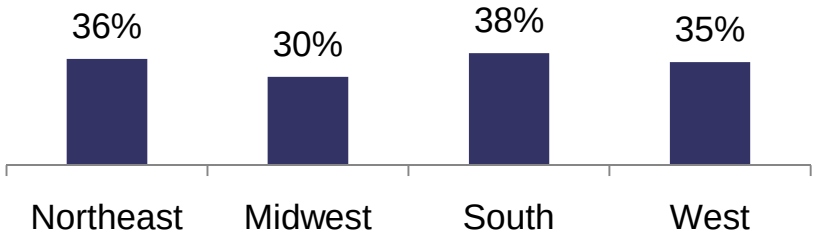
Know how much electricity you use when you use it, and how much it costs before receiving your monthly bill



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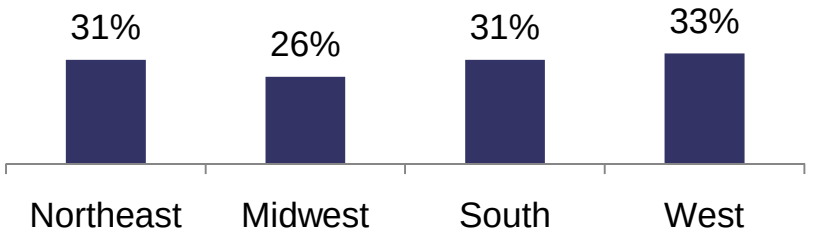

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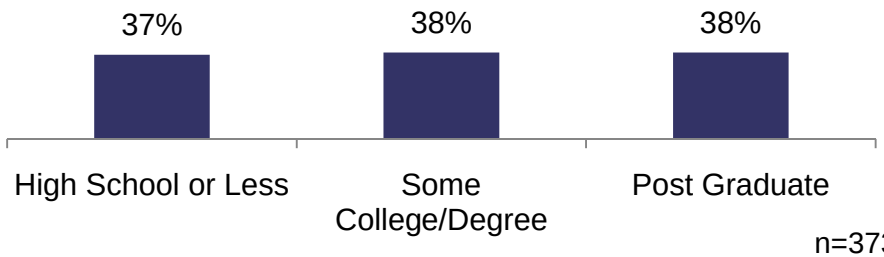
Minimal educational differences

Automatically turn off lights and appliances not being used and give you the ability to schedule lights and appliances to run based on your energy conservation goals.



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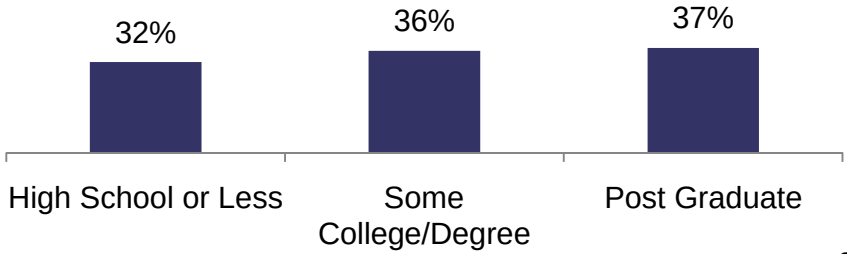

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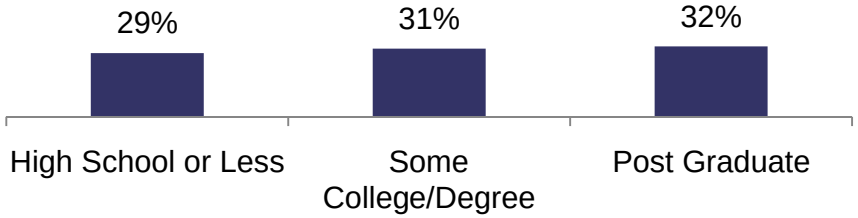

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Summary

Actionable Considerations

Considerations in the Approach:

- Address consumer "*pain points*" such as:
  - Knowledge about what is effective and what is not.
  - Knowing, upfront, what the electricity bill will be.
  - Ability to control cost and fluctuations in the monthly bill.
  - Address privacy concerns up front

- Suggested Smart Grid Education Sequence
  - Provide education on the smart grid in general.
  - Provide understanding of residential energy consumption .
  - Educate consumers regarding individual benefits.
  - Educate consumers on environmental & community benefits.
  - Proceed once consumers are ready.

General Considerations:

- Consumers want accurate, tangible, and specific examples.
- Consumers learn from a variety of channels (segmentation).
- Use simple and precise messaging that illustrates the value and resonates with the consumer .
- Alleviate consumer concerns about privacy with data policy and perspectives.
- Influence content in media and social media.

Together…Shaping the Future of Electricity