Honeywell Presents:
2014 Rural Smart Grid Survey
November 2014
Analysis: Zpryme

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Executive Summary

Zpryme and the Rural Smart Grid Summit (RSGS) completed a smart grid survey of 77 U.S. rural electric cooperatives and found that cost poses the most significant challenge for smart grid initiatives. Despite challenges with cost, many rural electric cooperatives are embracing smart grid technologies, particularly smart meters and data analytics.

Key Takeaways

• Nearly all rural electric utilities have some sort of smart grid effort in place. Most are at the planning and investigation phase (38%), while others are deploying multiple applications (21%) or at least have a formal strategy in place (16%).

• Seven out 10 utilities are experiencing a positive impact from smart grid programs. Many utilities are making smart grid programs part of their core operations (42%).

• Despite challenges, there is smart grid spending at rural electric utilities. In 2014 many companies are spending up to $1M on smart grid technologies; the next 5 years will bring spending numbers closer to $5M or more.

• Although rural consumers typically lag behind their urban counterparts in technology awareness, interest in home energy management has increased significantly for rural consumers from 4% in October 2013 to 16% in October 2014.
Methodology

Zpryme and the Rural Smart Grid Summit (RSGS) conducted the survey in November 2014. The survey consisted of 53 questions about smart water initiatives in the United States. A total of 77 rural electric utilities responded to the survey.

• Data reported in this report are a percent of the total respondents.

• Respondents’ top three areas of expertise were technology and engineering (60%), grid technology (47%), and strategy and planning (46%).
Key Findings

- Nearly all rural electric utilities have some sort of smart grid effort in place. Most are at the planning and investigation phase (38%), while others are deploying multiple applications (21%) or at least have a formal strategy in place (16%).

- Seven out 10 utilities are experiencing a positive impact from smart grid programs. Many utilities are making smart grid programs part of their core operations (42%).

- In the longer term, smart grid remains a priority for nearly all rural utilities. For most (53%), it will be a moderate priority.

- The top benefits for smart grid remained foundational benefits, including restoration time reduction (57%) and increased visibility and control (39%). Another important benefit included analytics-based decisions (42%).

- About two-thirds of rural utilities are taking on AMR and AMI efforts.

- As rural utilities take on AMI, many of them have already reached the majority of their customers (57%).

- Current AMI network functions in use include the basics, such as interval reads (60%) and voltage reads (47%). Other functions are expected to grow in the coming years as utilities become more comfortable with meter data.
Key Findings

• Nearly half of rural utilities do not have a plan for renewables. Those who do have plans, are considering both centralized and decentralized generation. Electric vehicles have not significantly impacted rural electric utilities.

• Opportunities for cloud-based and SaaS solutions are growing. Although more than half of rural utilities have yet to use these solutions, many others are beginning to dabble in them for AMI and data analytics.

• Even with the opportunities of a smarter grid, there are still challenges. The most significant challenge is cost, followed by concerns around technology maturity.

• For technology, the biggest challenges facing rural electric utilities are handling distribution automation (36%) and systems integration (34%).

• Companies are facing difficulties finding individuals with the skills needed to effectively take on data analytics (42%) and systems integration (40%).

• Despite challenges, there is smart grid spending at rural electric utilities. In 2014 many companies are spending up to $1M on smart grid technologies; the next 5 years will bring spending numbers closer to $5M or more.
Although rural consumers typically lag behind their urban counterparts for technology awareness, interest in home energy management has increased significantly for rural consumers from 4% in October 2013 to 16% in October 2014.
How many electric customers do you have?

Most respondents had 10,001 to 25,000 electric customers and 25,001 to 50,000 electric customers.
Respondents’ top three areas of expertise were technology and engineering (60%), grid technology (47%), and strategy and planning (46%).
Nearly all rural electric utilities have some sort of smart grid effort in place. Most are at the planning and investigation phase (38%), while others are deploying multiple applications (21%) or at least have a formal strategy in place (16%).
For 7 out 10 utilities, they are experiencing a positive impact from smart grid programs. Many utilities are making their smart grid programs part of their core operations (42%).
In the longer term, smart grid remains a priority for nearly all rural utilities. For most (53%), it will be a moderate priority and for one-third of respondents it will be a high priority.
The top benefits for smart grid remained foundational benefits, including restoration time reduction (57%) and increased visibility and control (39%). Another important benefit included analytics-based decisions (42%).
When communicating to customers about the value of a smart grid, most utilities communicated cost savings (46%) and opportunities to reduce peak demand (42%). GHG emissions reductions did not enter the conversation often (4%).
Most rural utilities see AMI as a prerequisite for a smart grid (77%), and 13% of respondents remain unsure.
With the importance of AMI, rural utilities most frequently mentioned smart meters/AMI as a top smart grid technology (91%). Other important technologies included MDM/analytics (58%) and distribution automation (56%).
Do you have AMR/AMI in place?

About two-thirds of rural utilities are taking on AMR and AMI efforts.
When will smart meters reach a majority of customers?

As rural utilities take on AMI, many of them have already reached the majority of their customers (57%), and many more plan to reach the majority of their customers in the next three years (20%).
Current AMI network functions in use include the basics, such as interval reads (60%) and voltage reads (47%). Other functions are expected to grow in the coming years as utilities become more comfortable with meter data.
Dynamic pricing is not yet common in most rural utilities, but some currently offer it (21%), and others are planning to offer pricing options in the future (14%).
In the long term, demand response programs are led by:

- The utility: 47%
- Too early to tell: 33%
- A third party: 7%
- Combination of entities with utility managing: 14%

With demand response, most rural utilities believe it should be run the utility (47%) although many companies still feel it is too early to tell how responsibilities will play out (33%).
Nearly half of rural utilities do not have a plan for renewables. Those who do have plans, are considering both centralized and decentralized generation. Electric vehicles have not significantly impacted rural electric utilities.
The survey also explored many other application areas. OMS is used by most utilities (64%), and other distribution automation technologies are more in the planning stages.
Data and analytics is an important area for rural utilities, and there are concerns around security, privacy, network issues and the challenges of integrating disparate data sources.
Cloud-based and SaaS solutions

Opportunities for cloud-based and SaaS solutions are growing. Although more than half of rural utilities have yet to use these solutions, many others are beginning to dabble in them for AMI and data analytics.
Even with the opportunities of a smarter grid, there are still challenges. The most significant challenge is cost, followed by concerns around technology maturity.
Technologies with the largest technological barriers

For technology, the biggest challenges facing rural electric utilities are handling distribution automation (36%) and systems integration (34%).
Those technology challenges are also reflected in workforce gaps. Companies are facing difficulties finding individuals with the skills needed to effectively take on data analytics (42%) and systems integration (40%).
Regulation/legislation posing challenges in next 5 years

Looming regulatory and legislative actions are causing rural utilities headaches, including placing a price on carbon emissions (52%), renewable standards (34%) and energy efficiency incentives (30%).
Despite these challenges, there is smart grid spending at rural electric utilities. In 2014 many companies are spending up to $1M on smart grid technologies; the next 5 years will bring spending numbers closer to $5M or more.
About Honeywell Smart Grid Solutions

For more than 30 years, Honeywell Smart Grid Solutions (SGS) has provided utilities with industry-leading technologies and strategies from automated demand response and energy solutions to utility customer communications. Working with over 60 utility clients across North America, Asia, Europe and Australia, Honeywell SGS has delivered innovative programs and solutions to help utilities exceed their demand management goals. Energy and sustainability solutions are just the beginning. Honeywell SGS also helps utilities engage customers for program participation, create and implement energy management systems, measure and verify energy and demand savings and serve their commercial and residential customers reliably and efficiently. Simply put, for utilities around the world, the partner of choice is Honeywell Smart Grid Solutions. For more information, visit www.honeywellsmartgrid.com.