

Tantalus Presents:

2015 Municipal Smart Grid Report

September 2015 Analysis Zpryme



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Executive Summary

Zpryme and the Municipal Smart Grid Summit (MSGGS) completed a smart grid survey of 81 U.S. municipal utilities and found that cost poses the most significant challenge for smart grid initiatives. Despite challenges with cost, many municipal utilities are embracing smart grid technologies, particularly AMI meters and data analytics.

Key Takeaways

- Nearly all municipal utilities have some sort of smart grid effort. Many are at the planning and investigation phase (30%), while others are taking it to the next level. Up from 14% last year, 22% are taking on large-scale deployments.
- More than 50% of municipal utilities see a positive impact from smart grid programs. Those seeing no noticeable effect is largely due to programs just getting started, the negative effects are often due to consumer backlash.
- The most significant challenge for a smarter grid is budget limitations (42%), followed by concerns around technology maturity and availability (15%).
- Despite challenges, there is smart grid spending at municipal utilities. In the next 12 months many companies are spending up to \$1M on smart grid technologies; the next 36 months will bring some spending closer to \$5M or more.

Methodology

Zpryme and the Municipal Smart Grid Summit (MSGs) conducted the survey in May to June 2015. The survey consisted of 18 questions about smart grid initiatives at municipal utilities in the United States. A total of 81 municipal utilities responded to the survey.

- Data reported in this report are a percent of the total respondents.
- Respondents' top three areas of expertise were operations (64%), engineering (43%), and customer service (36%).

Key Findings

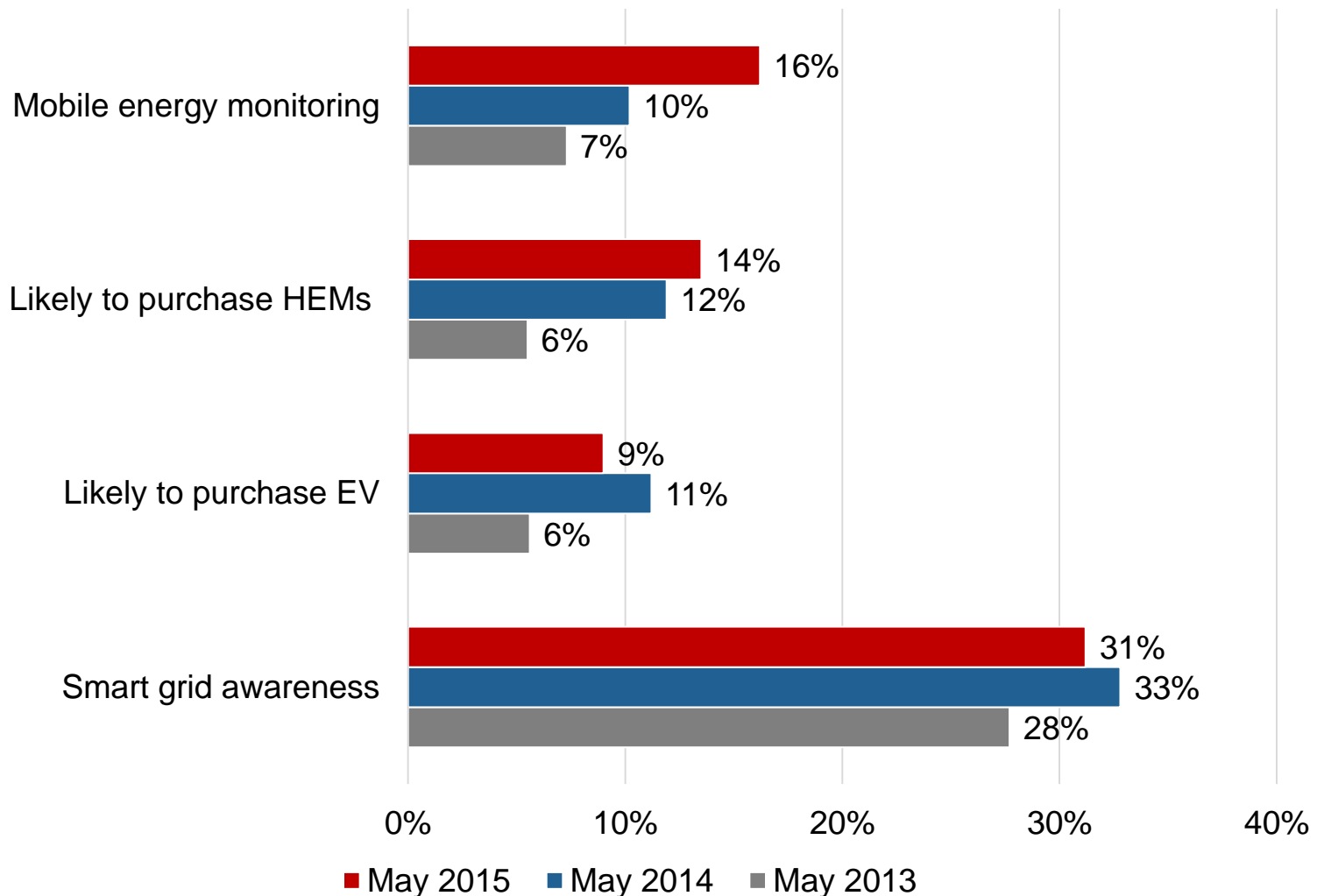
- Nearly all municipal utilities have some sort of smart grid effort. Many are at the planning and investigation phase (30%), while others are taking it to the next level. Up from 14% last year, 22% are taking on large-scale deployments.
- More than 50% of municipal utilities see a positive impact from smart grid programs. Those seeing no noticeable effect is largely due to programs just getting started, the negative effects are often due to consumer backlash.
- In the longer term, smart grid remains a priority for nearly all municipal utilities. For most (54%), it will be a moderate priority.
- The top benefits for smart grid remain foundational benefits, including restoration time reduction (62%) and improved power quality (40%). Another important benefit includes analytics-based decisions (42%).
- As municipal utilities take on AMI, many of them have already reached the majority of their customers (35%), and many more plan to reach the majority of their customers in the next three years (24%).
- Opportunities for cloud-based and SaaS solutions are growing. Many utilities are considering them, but others are not sure. Concerns include loss of control, liability, security and privacy of customer information.

Key Findings

- Even with the opportunities of a smarter grid, there are still challenges. The most significant challenge is budget limitations (42%), followed by concerns around technology maturity and availability (15%).
- Other concerns include cybersecurity and privacy—68% and 43% of respondents, respectively, are very concerned. Others still have concerns about managing the onslaught of data and effectively engaging customers.
- Technology challenges are also reflected in workforce gaps. Companies are facing difficulties finding individuals with the skills needed to effectively take on data analytics (48%) and systems integration (52%).
- Despite challenges, there is smart grid spending at municipal utilities. In the next 12 months many companies are spending up to \$1M on smart grid technologies; the next 36 months will bring some spending closer to \$5M or more.
- Municipal utilities are primarily spending on AMR/AMI (80%) and MDM (48%) efforts. And despite the hype around them, DER integration (6%) and microgrid integration (3%) comprise just a small percentage of smart grid spending.

Trends

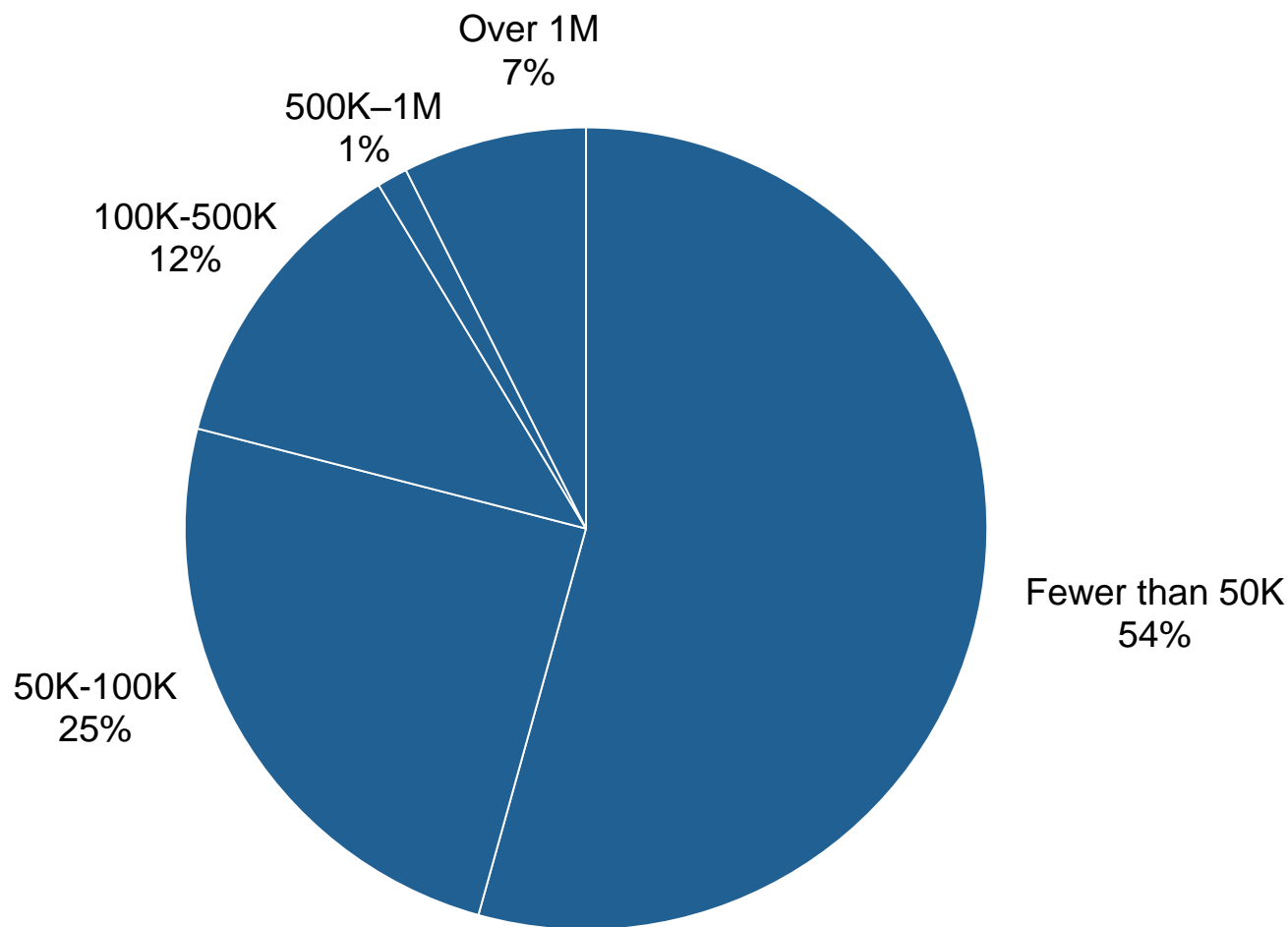
U.S. consumer trends by technology



Interest in mobile energy monitoring, home energy management and electric vehicles continues to grow slowly among consumers. Smart grid awareness has remained the same for most consumers over the past three years.

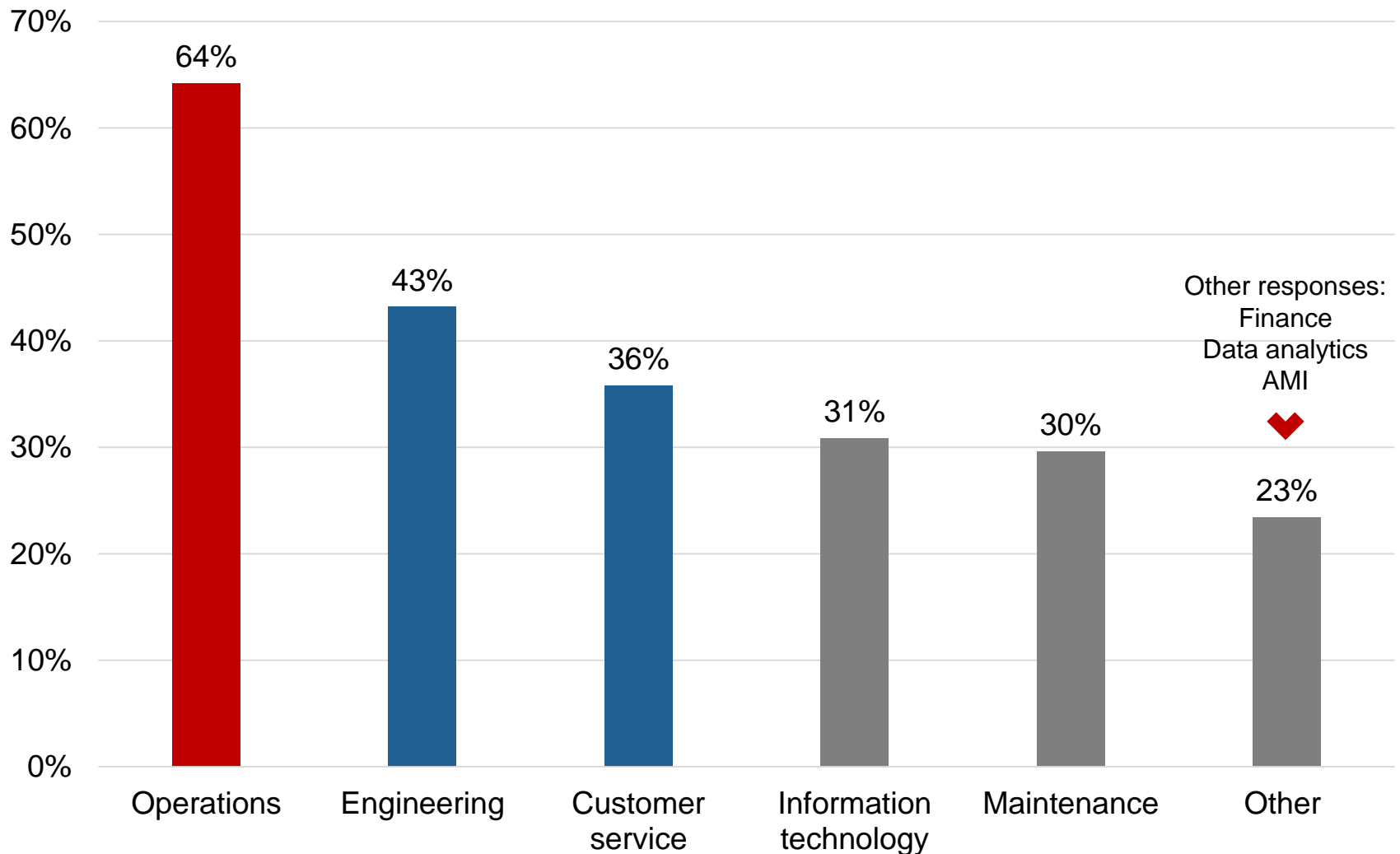
Survey Basics

How many electric customers do you have?



The survey included diverse respondents in terms of company size. Roughly half of respondents have fewer than 50,000 electric customers.

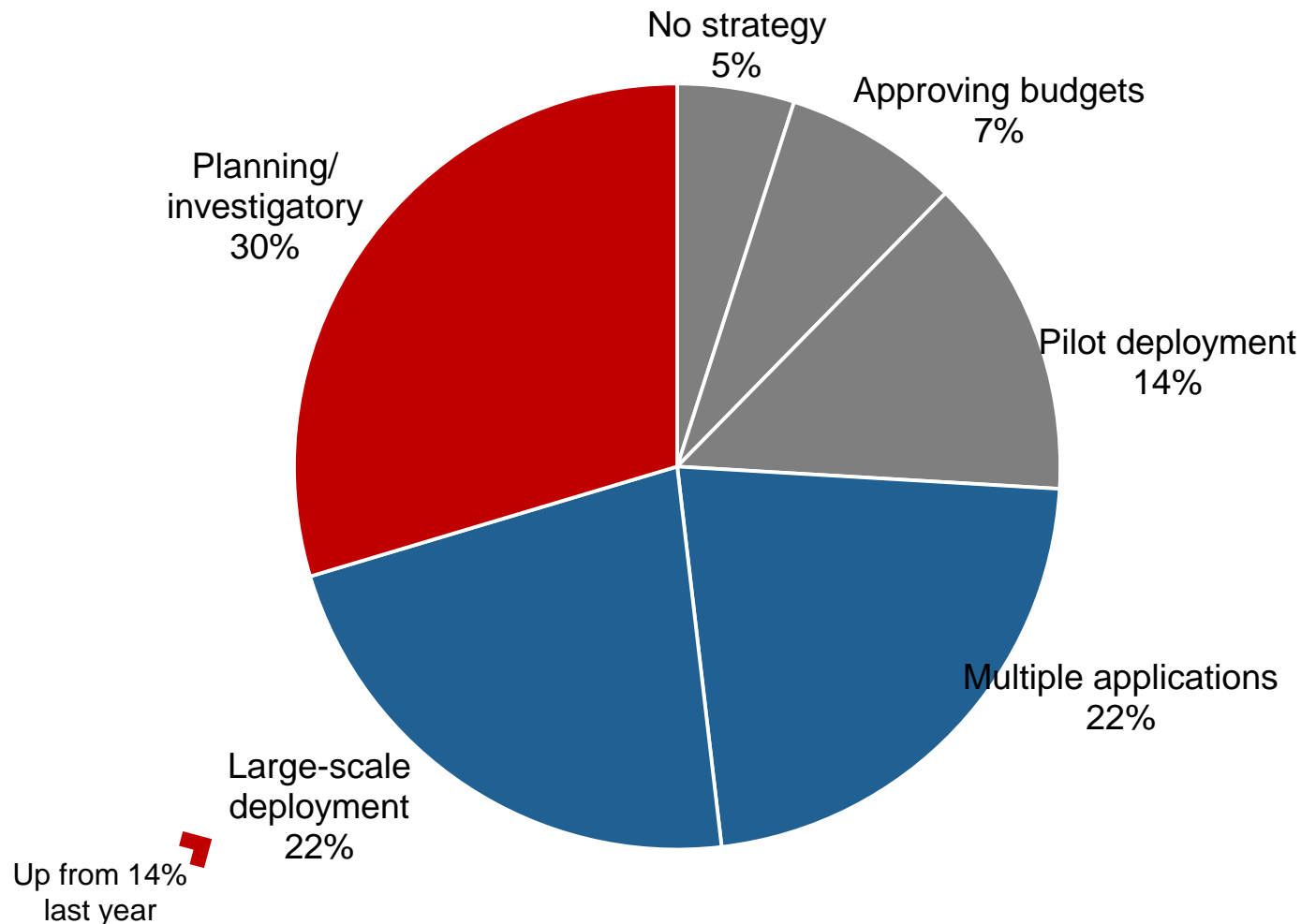
Respondent areas of expertise



Respondents' top three areas of expertise are operations (64%), engineering (43%), and customer service (36%). In the "other" category several respondents also note more specific expertise, such as AMI and data analytics.

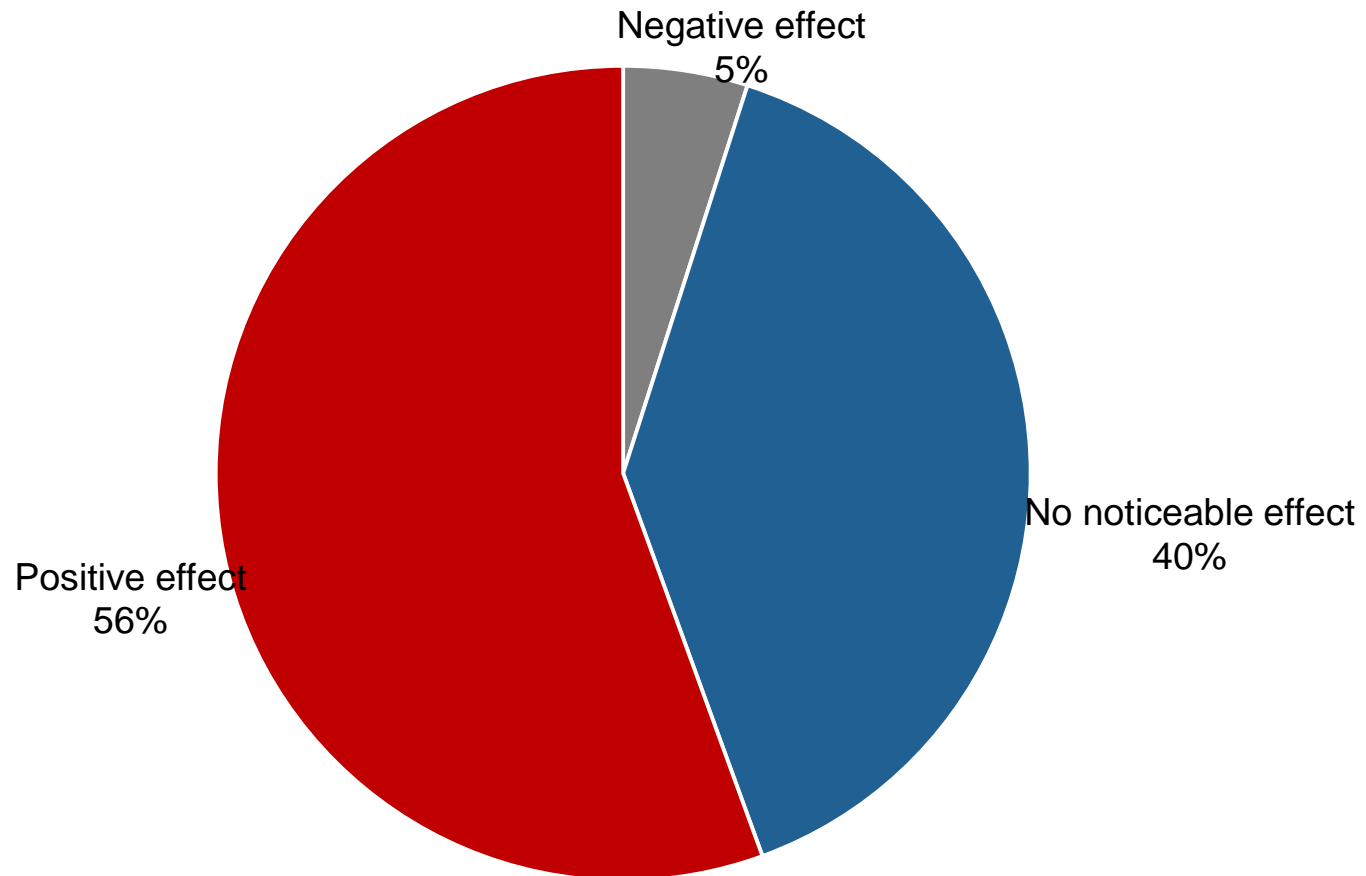
Smart Grid Overview

Current smart grid deployment status



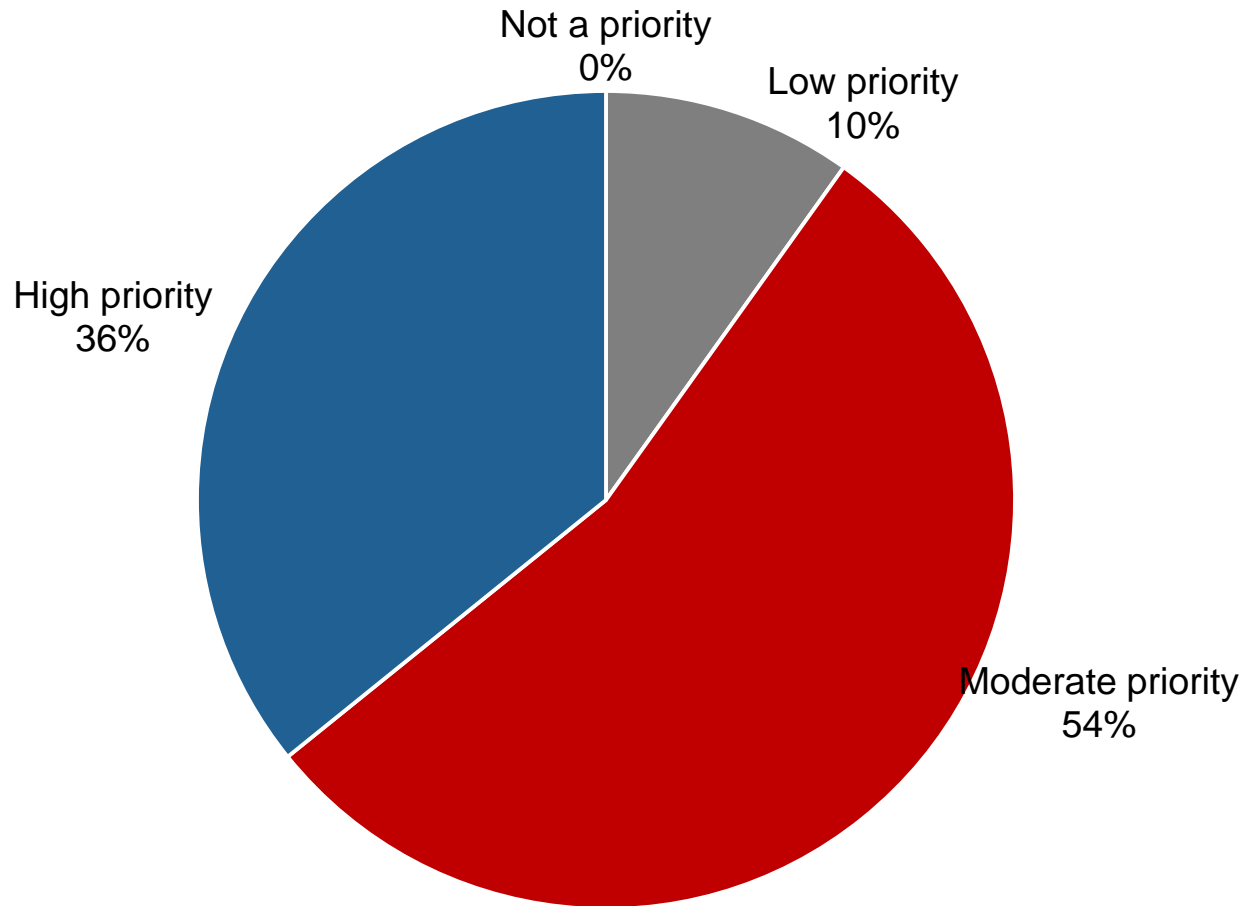
Nearly all municipal utilities have some sort of smart grid effort. Many are at the planning and investigation phase (30%), while others are taking it to the next level. Up from 14% last year, 22% are taking on large-scale deployments.

Impact of smart grid program on company



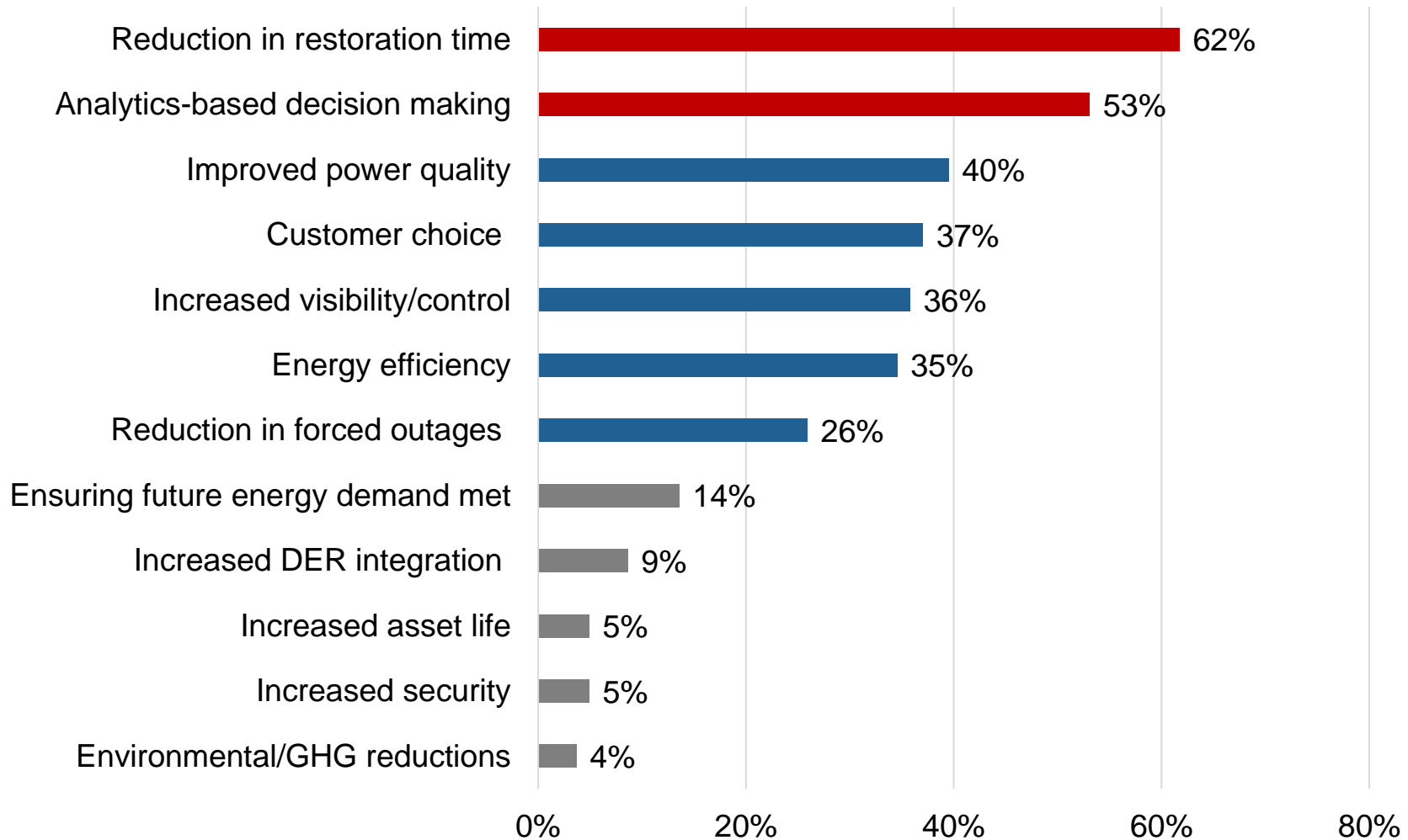
More than 50% of municipal utilities see a positive impact from smart grid programs. Those seeing no noticeable effect is largely due to programs just getting started, the negative effects are often due to consumer backlash.

Overall importance of smart grid in next 5 years



In the longer term, smart grid remains a priority for nearly all municipal utilities. For most (54%), it will be a moderate priority and for one-third of respondents it will be a high priority.

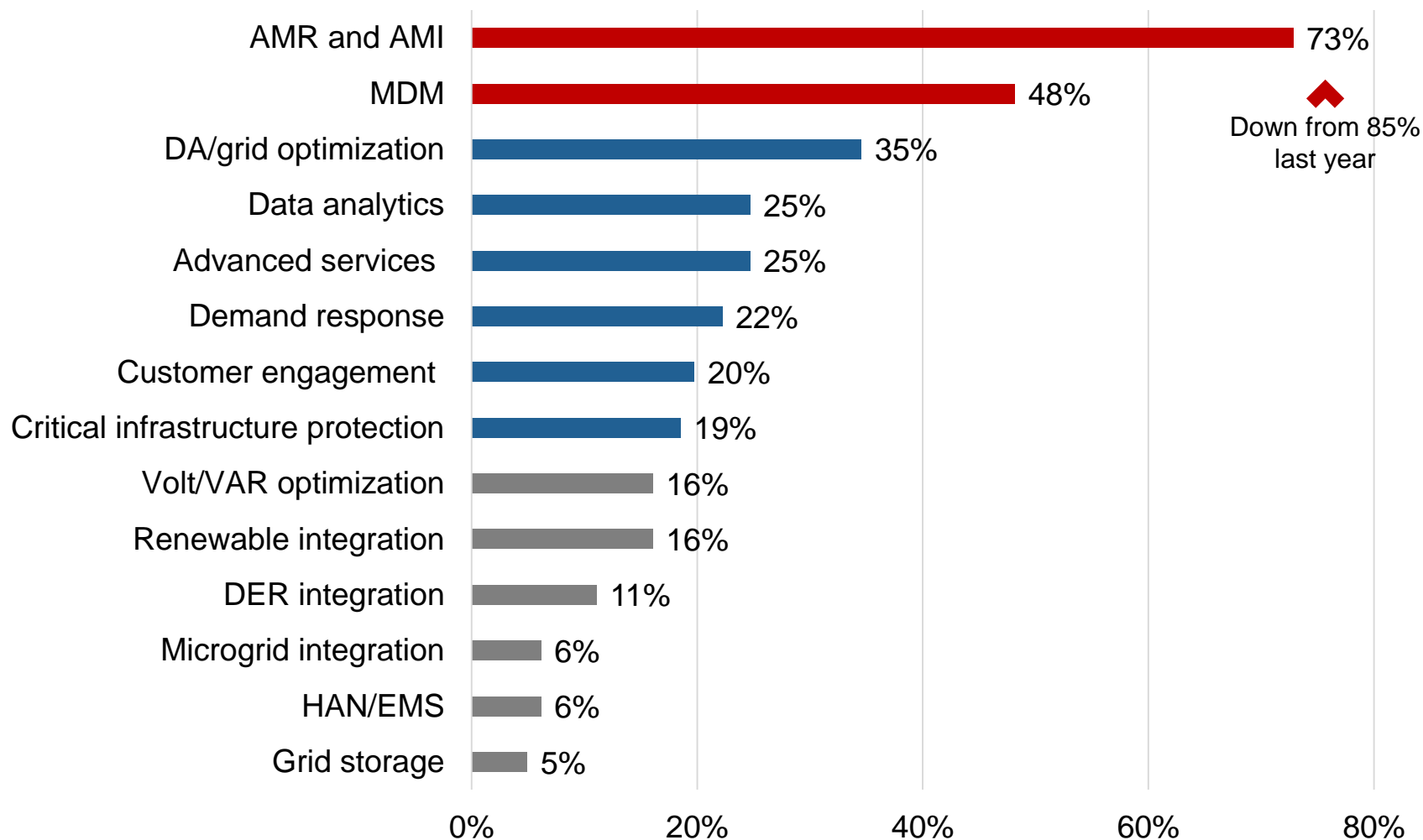
Top smart grid technology benefits



The top benefits for smart grid remain foundational benefits, including restoration time reduction (62%) and improved power quality (40%). Another important benefit includes analytics-based decisions (42%).

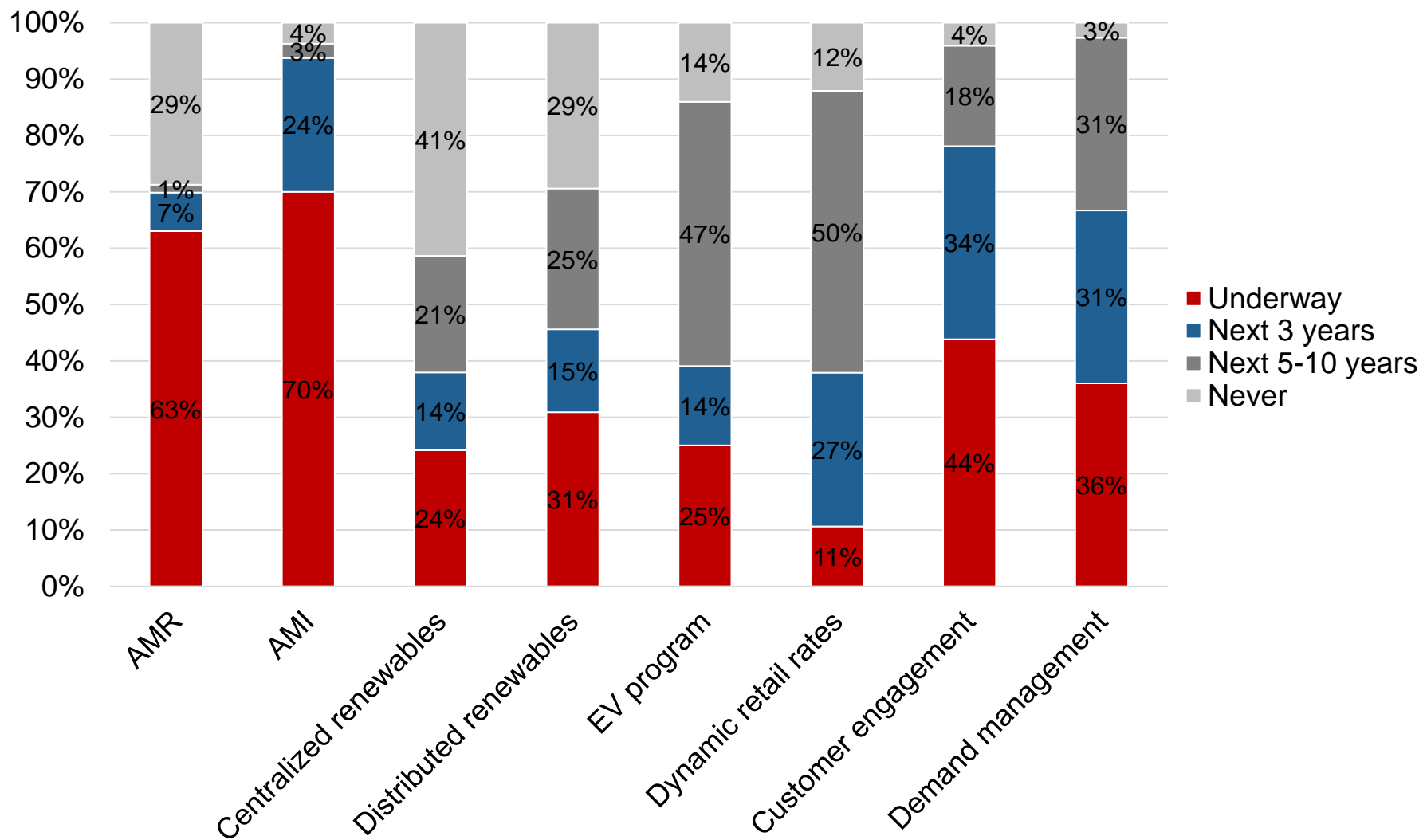
Smart Grid Technology

Most important smart grid applications



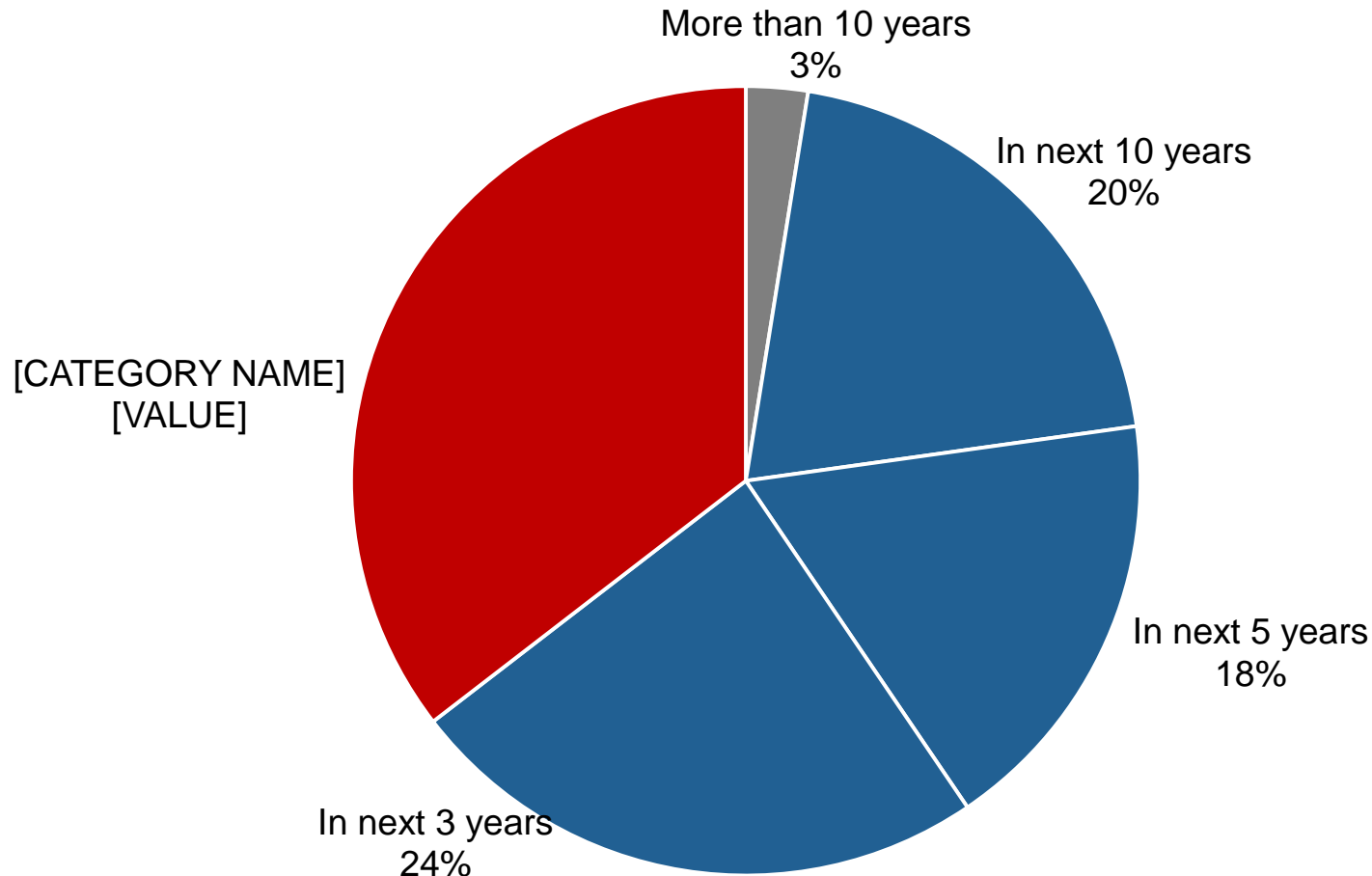
With the importance of AMI, municipal utilities most frequently mention AMI/AMR as a top smart grid technology (73%). However, as more AMI projects roll out, utilities are diversifying their efforts—AMI is down from 85% last year.

Status of smart grid programs at utilities



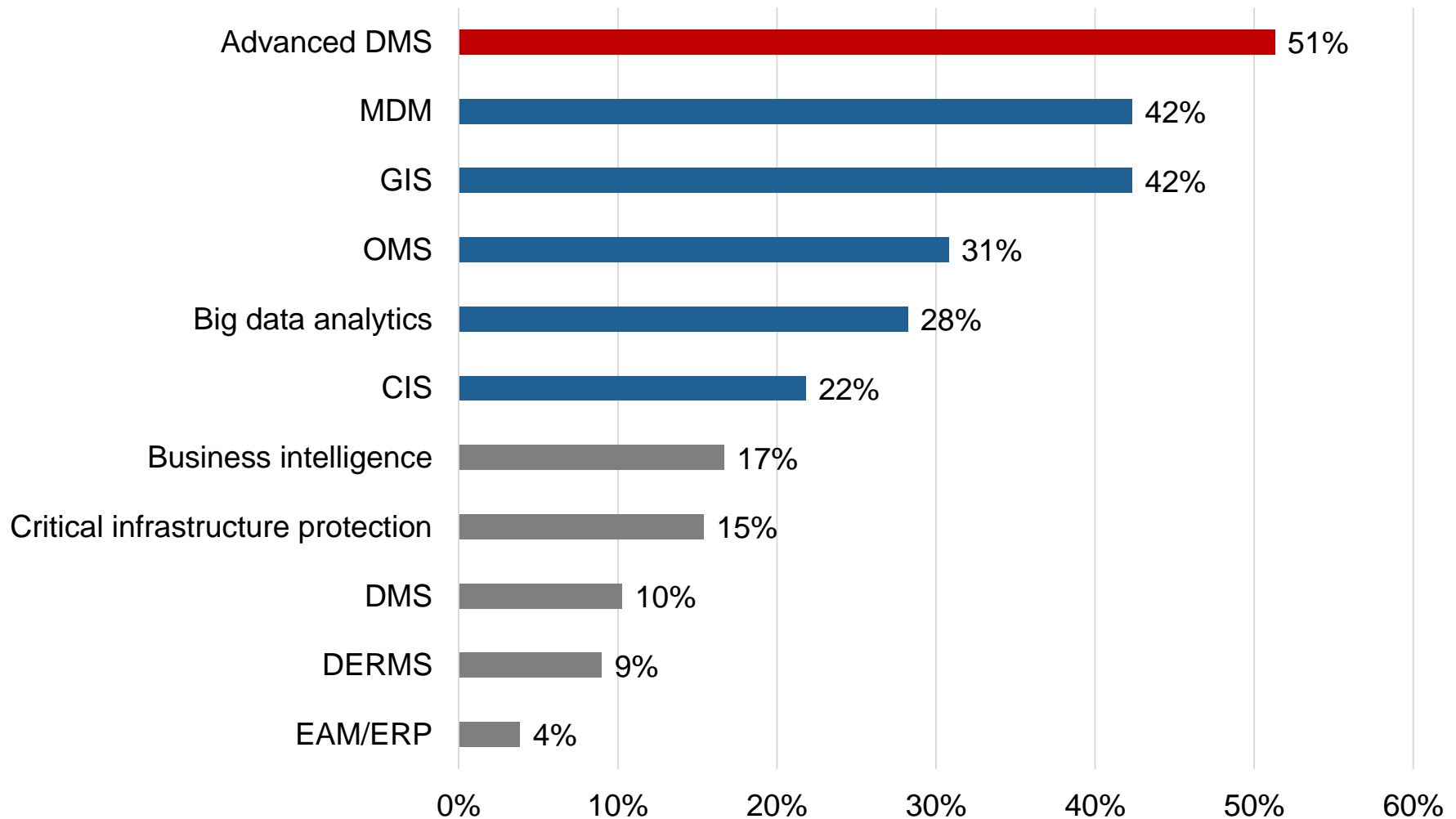
Most utilities are tackling AMI/AMR projects right now, but nearly every utility sees more advanced grid efforts—such as EV programs (86%) and dynamic retail rates (88%)—on the horizon.

When will AMI meters reach a majority of customers?



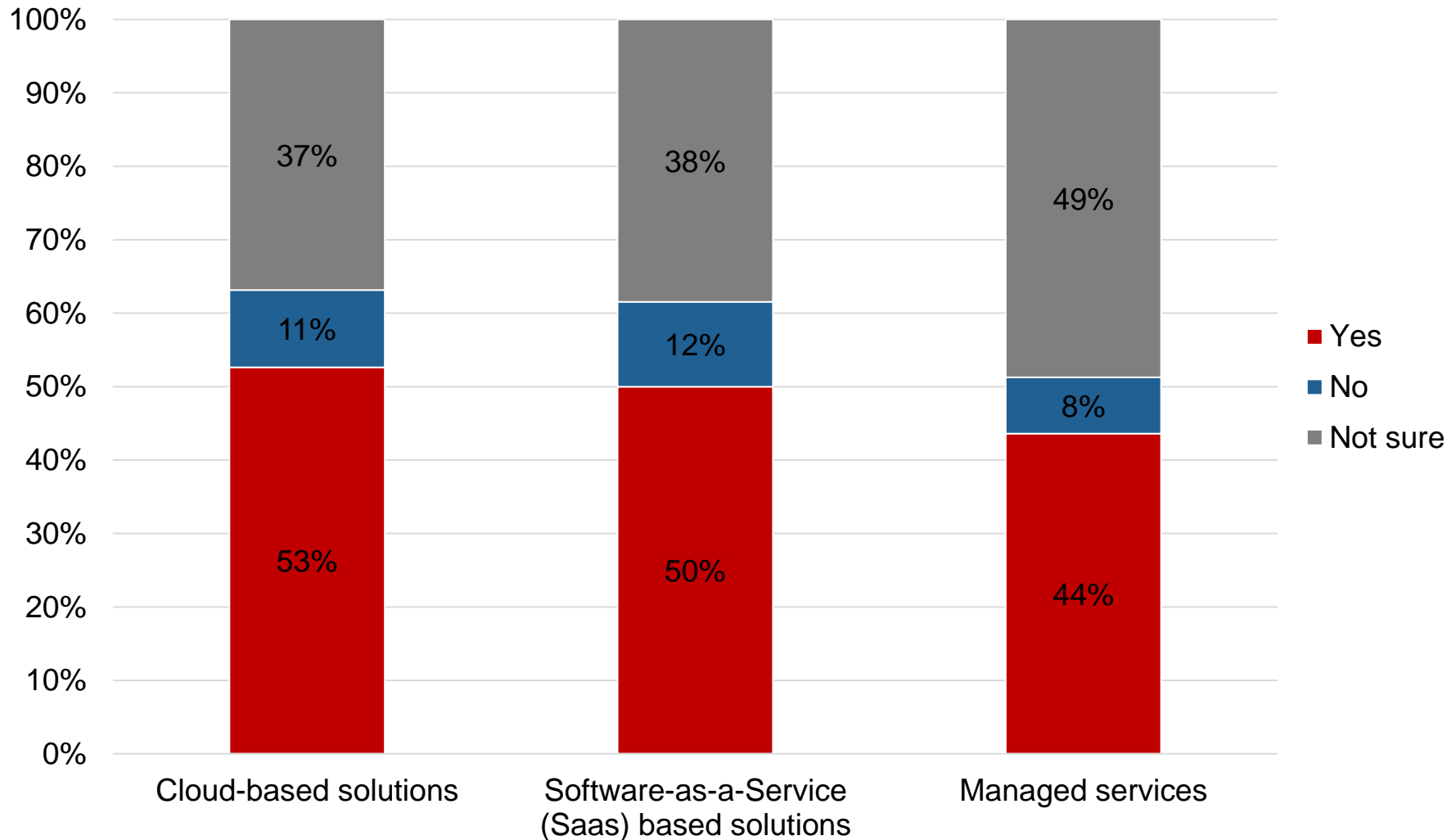
As municipal utilities take on AMI, many of them have already reached the majority of their customers (35%), and many more plan to reach the majority of their customers in the next three years (24%).

Systems plan to implement in next 3 years



The survey also explored many other application areas. Advanced distribution automation technologies are on the horizon in the next three years (51%) along with MDM (42%) and GIS (42%) applications.

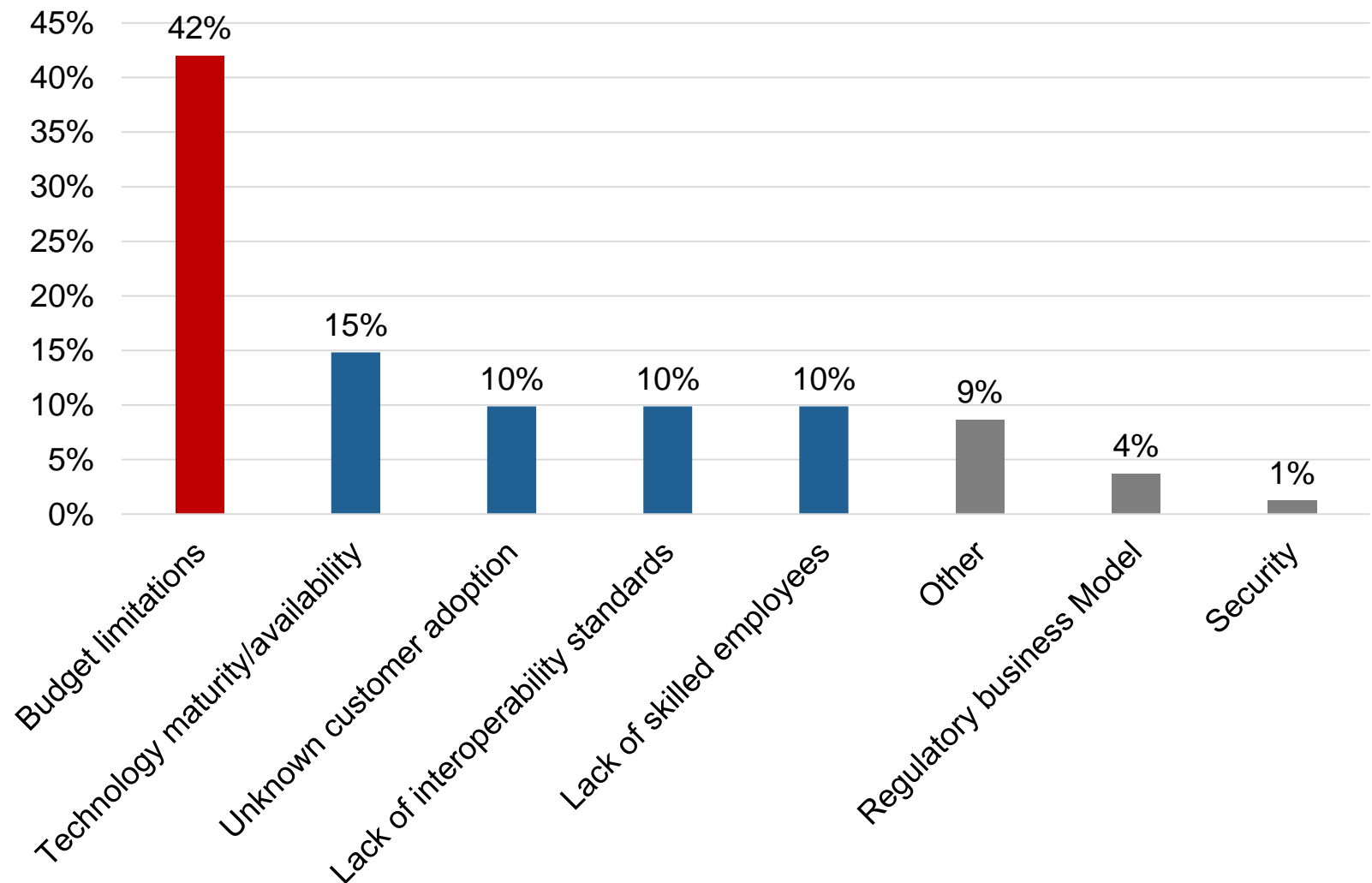
Considering cloud-based and SaaS solutions



Opportunities for cloud-based and SaaS solutions are growing. Many utilities are considering them, but others are not sure. Concerns include loss of control, liability, security and privacy of customer information.

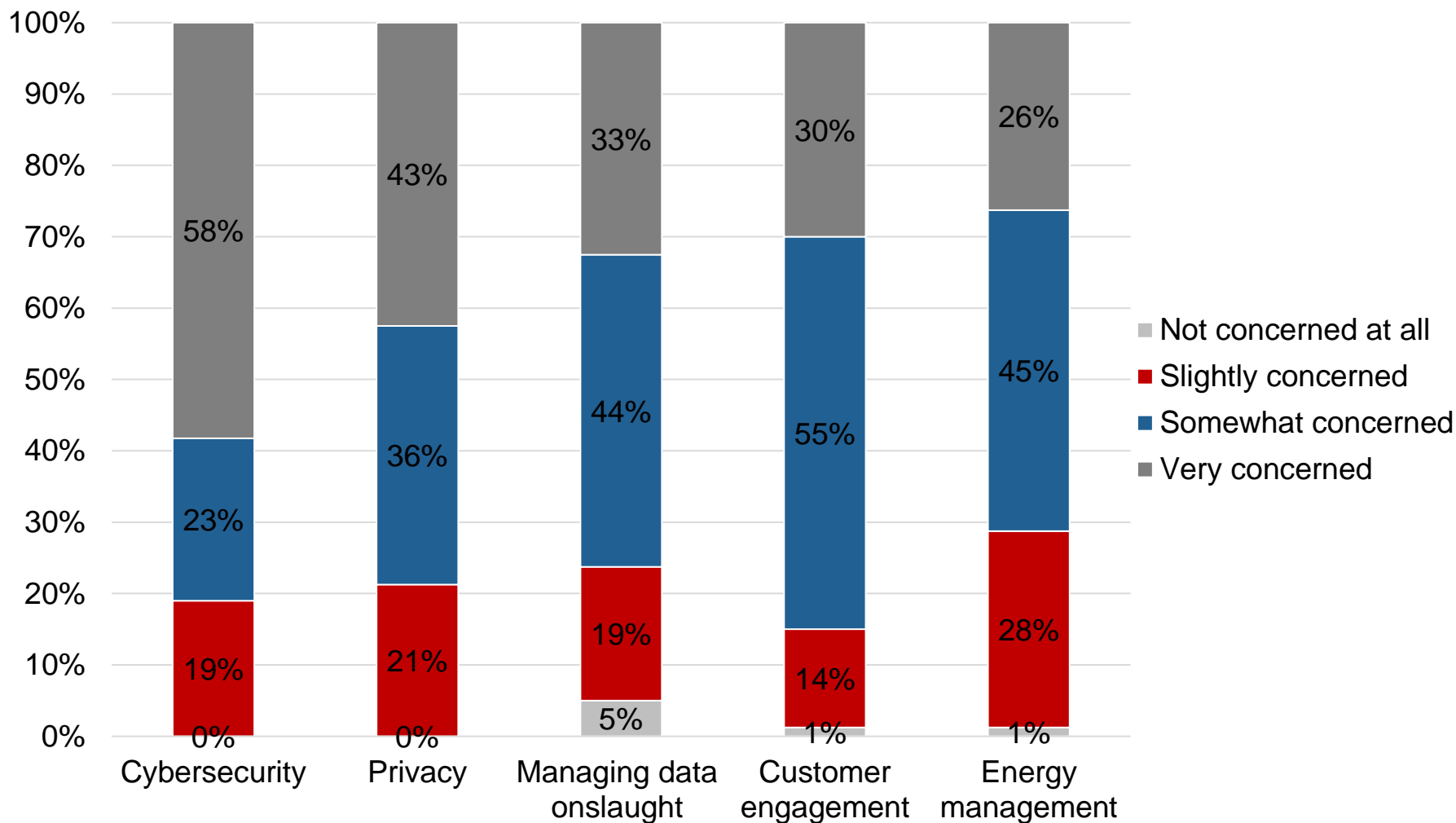
Smart Grid Challenges

Primary challenge to smart grid deployment success



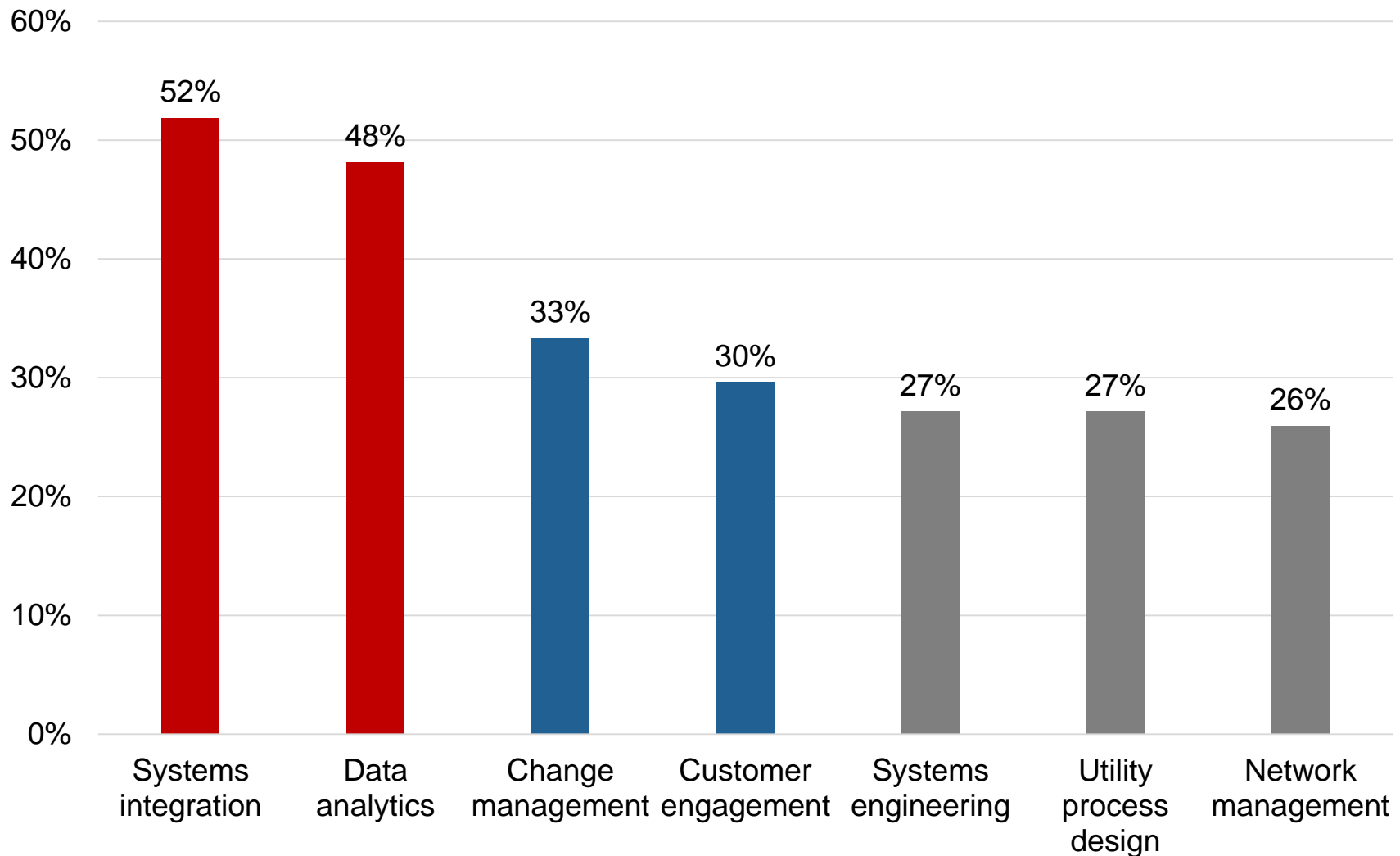
Even with the opportunities of a smarter grid, there are still challenges. The most significant challenge is budget limitations (42%), followed by concerns around technology maturity and availability (15%).

How concerned utilities are with:



Other concerns include cybersecurity and privacy—68% and 43% of respondents, respectively, are very concerned. Others still have concerns about managing the onslaught of data and effectively engaging customers.

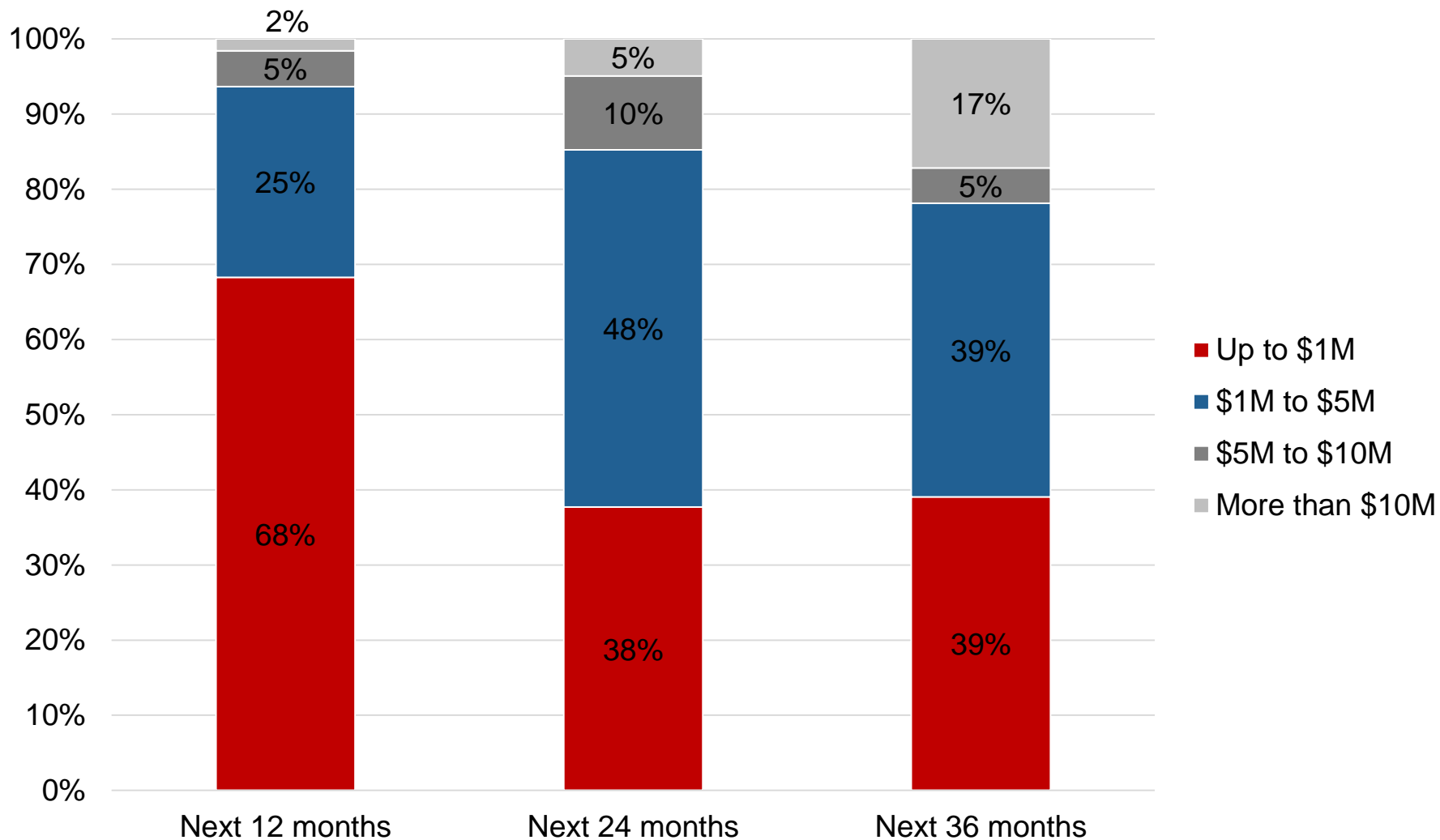
Smart grid skill gaps in existing workforce



Technology challenges are also reflected in workforce gaps. Companies are facing difficulties finding individuals with the skills needed to effectively take on data analytics (48%) and systems integration (52%).

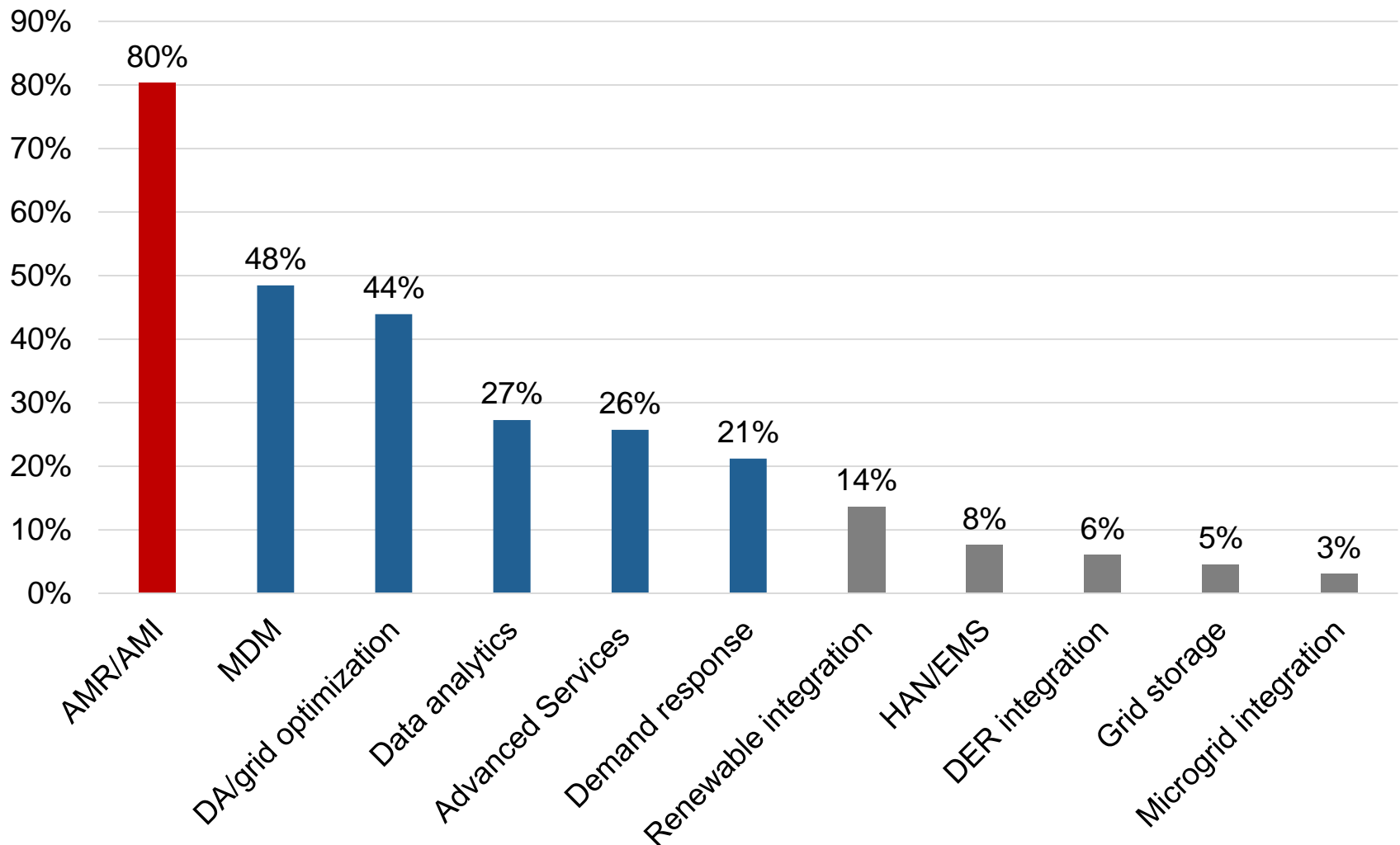
Smart Grid Spending

Smart grid spending patterns



Despite challenges, there is smart grid spending at municipal utilities. In the next 12 months many companies are spending up to \$1M on smart grid technologies; the next 36 months will bring some spending closer to \$5M or more.

Smart grid areas currently receiving funding



Municipal utilities are primarily spending on AMR/AMI (80%) and MDM (48%) efforts. And despite the hype around them, DER integration (6%) and microgrid integration (3%) comprise just a small percentage of smart grid spending.

About Tantalus

Tantalus provides a two-way, multi-purpose platform that enables access to data to power advanced Smart Grid applications for monitoring and control of electric, water and gas municipal and cooperative utilities. TUNet® – the Tantalus Utility Network – is an award winning end-to-end WAN/FAN/LAN/Grid Edge communications system that utilizes IP-based networks including Fiber, WiMAX and cellular as well as 220 & 900 MHz wireless RF.

TUNet is purpose built for the Smart Grid and unites utility applications through distributed computing capability embedded at every endpoint. The result is enhanced value across all utility departments through solutions such as automated metering, outage management, power quality monitoring, load management, and distribution automation that are both cost-effective and practical to deploy throughout urban and rural service areas. For more information, please visit www.tantalus.com.

Additional Resources:

Public power utilities are adopting technologies that will set the stage to drive data-intensive advanced applications – such as Demand Management (98%) and Dynamic Retail Rates (88%). The most challenging hurdle that these utilities face today is identifying a logical financial case to support a migration to Smart Grid. As a result, many utilities are now further analyzing and **quantifying the monetary value of Smart Grid investments across all utility departments** as a key element in a successful business case for Smart Grid.

White Paper | [Getting the Most Value From Your Metering Technology Investments: Economic Migration from AMR to Smart Grid](#)

