

Energy

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Survey:

# Insights from utility program leaders on disruption and opportunity





## Introduction

After an eventful year—a surge in both billion-dollar weather-related disasters and unprecedented end-user demand—how are utilities thinking about the challenges and opportunities to come?

Customer programs such as energy efficiency and demand response play a critical role in energy security and resilience. That’s why we surveyed 100 utility program leaders to explore their challenges with capacity, plans for electrification, approaches to energy affordability, and adoption of technology.

**This original research by ICF highlights insights from leaders driving customer programs in a rapidly evolving industry, navigating challenges and disruptions across four key areas:**

98%

nearly all utility program leaders say that evolving their energy efficiency programs has become essential to realizing a return on investment.

100%

recognize the importance of engaging with economically burdened communities, acknowledging that these often-overlooked groups can enhance participation in their customer programs.

100%

of respondents indicate they’re using AI for at least one aspect of their customer programs.

- 1

Clean energy
- 2

Reliability
- 3

Affordability
- 4

Technology

The survey reveals that utility program leaders recognize the need to better align their programs with their utility’s established goals of delivering clean, reliable, and affordable energy.

While customer programs represent only one part of the full utility picture, our research shows that these programs are facing a moment of great change and opportunity. They need to be both more flexible and predictable in the face of rapid demand growth, electrification, aging infrastructure, and new technology. This requires innovative thinking, planning, prioritizing, and operating.

Here we present key insights from the data—as well as actionable recommendations for utility leaders, pulled from our 50+ years of energy expertise.



Clean energy

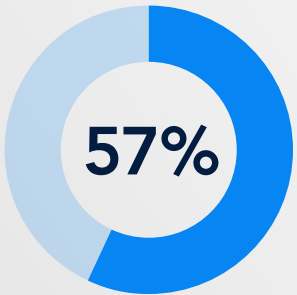
It’s unanimous: Clean energy won’t thrive without financing options for customers

For utilities pursuing clean energy, meeting customers’ energy needs while enhancing reliability and resilience remains essential. But are utility program leaders leveraging customer programs to help achieve their company’s goals?

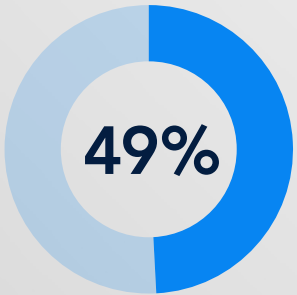
Our research shows that while **nearly half (45%)** of respondents point to decarbonization as a top goal of customer programs, **100%** agree that customer programs that don’t provide financing options will never reach their full potential in promoting the adoption of clean energy.

Figure 1: What are the top goals you aim to achieve through your customer programs?

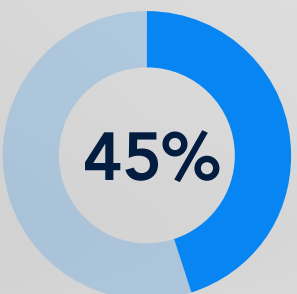
Grid modernization



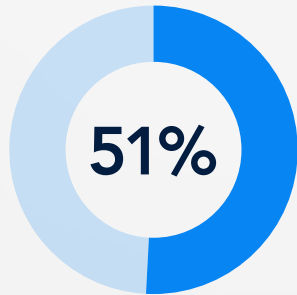
Enhanced reliability



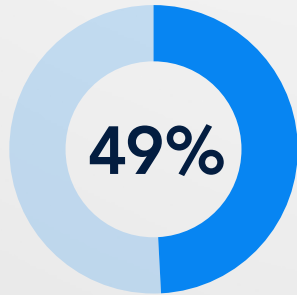
Decarbonization



Affordability



Customer satisfaction and engagement



Reduced energy use

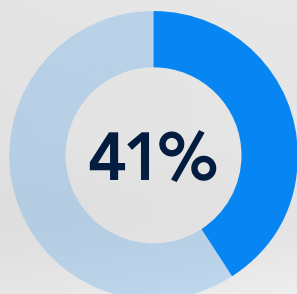
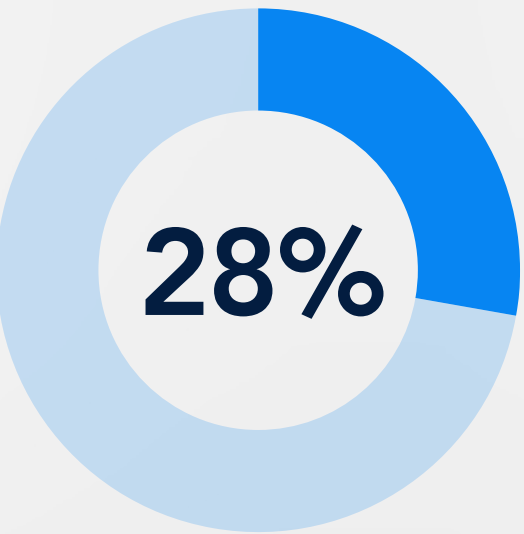
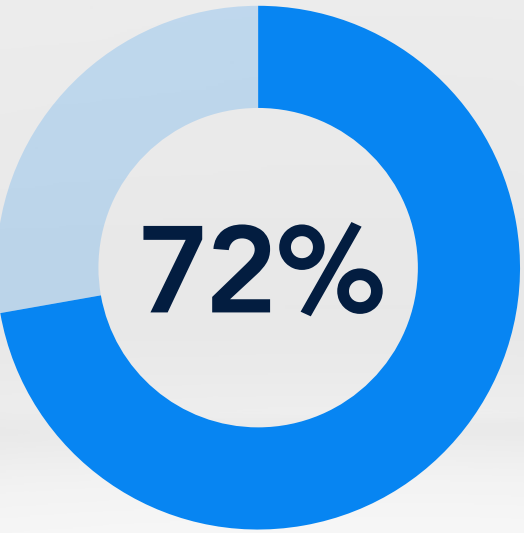


Figure 2: Agree or disagree: Customer programs that don’t provide financing options (e.g., innovative tariffs and incentives) to customers to adopt clean energy technologies will never reach their full potential.



Strongly agree



Somewhat agree

Key takeaway

The overwhelming recognition by utility program leaders of the need for financing options underscores a critical fact: Customer participation is essential to the success of clean energy initiatives. This insight challenges our clients to rethink how they design and measure the next generation of energy efficiency (EE) and demand response (DR) programs to meet this demand head-on.

Utilities need a comprehensive view of their entire system—including transmission and distribution (T&D) investments and supply-/demand-side resources—to maintain it in an affordable and reliable way. This holistic perspective shapes the development of new programs, goals, metrics, incentives, and, ultimately, financing options for customers.

Reliability

Count on it: Improved reliability relies on load management

AI. Data centers. Electric vehicles. Heat pumps. How are utilities increasing electrification, and what pain points are they facing as they work to meet the rise in projected load?

Over two-thirds (68%) of utility program leaders say increasing electrification is a moderate or significant challenge, while 63% report that DR strategies must be deployed all the time or often to keep up with capacity demands.

Figure 3: How much of a challenge is it for your utility to increase electrification while meeting your energy reduction goals?



Figure 4: How frequently does your utility need to employ demand response strategies to address capacity issues?





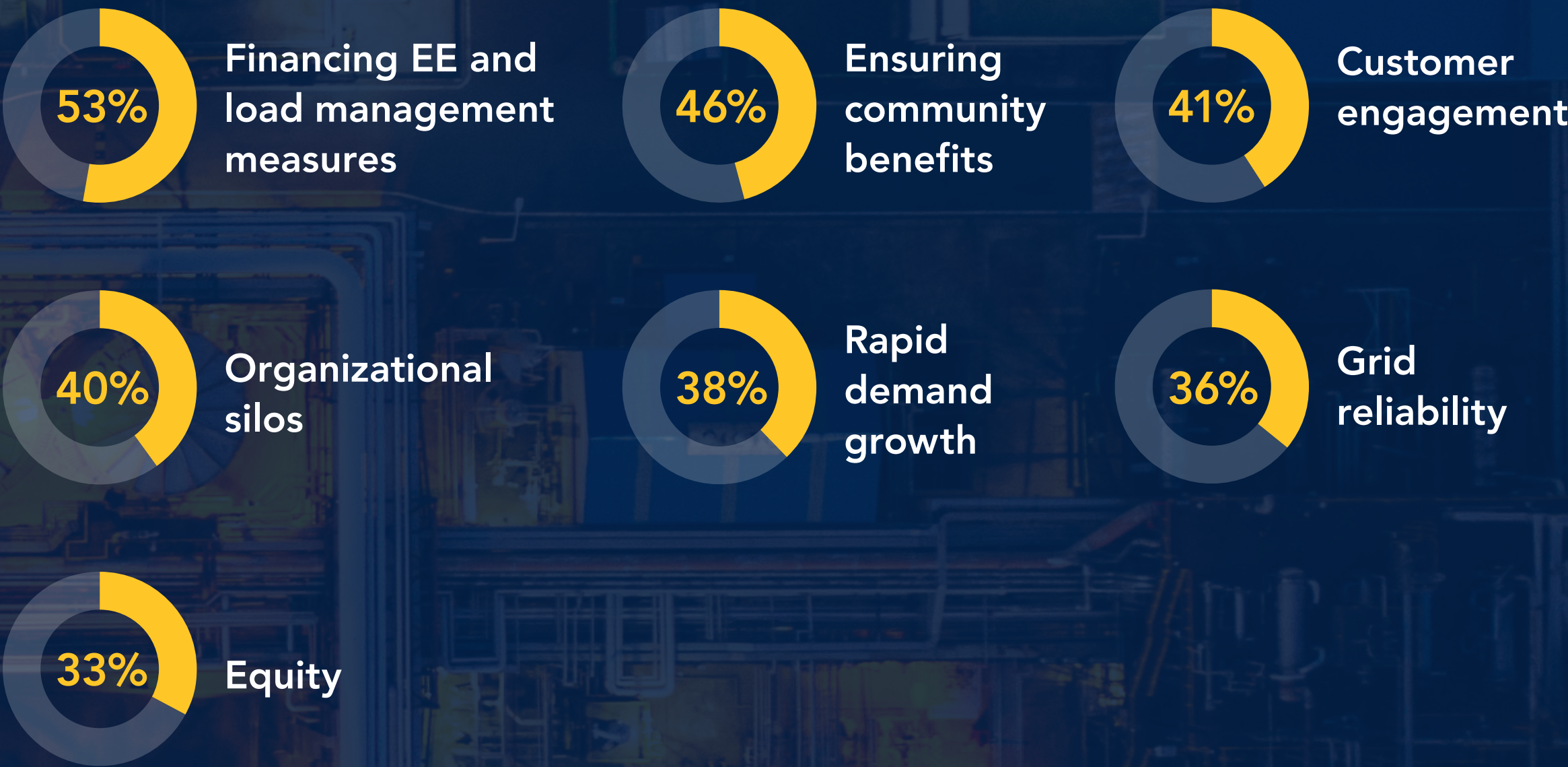
Energy efficiency programs have the potential to help utilities stay a step ahead of rising energy costs and improve the security of the grid. How do utility program leaders see EE programs adapting to keep pace with rising demand and evolving customer needs?

Nearly all (98%) say that evolving their energy efficiency programs has become essential to realizing a return on investment. And a **majority (53%)** say financing energy efficiency and load management measures are the biggest obstacles keeping them from hitting their programs’ goals.

Figure 5: Agree or disagree: We’ve had to rethink or evolve our energy efficiency programs to find ways to realize a return on investment.



Figure 6: What are the biggest challenges in your customer programs that hold you back from achieving your goals?



Key takeaway

While traditional EE programs continue to be foundational, utility program leaders are also evolving their approaches to sustain programs financially and adapt to shifting business and customer priorities. These findings highlight the critical role of integrated **demand-side management solutions**, which take a holistic view of EE, DR, and distributed energy resources (DERs) to maintain grid stability and meet customer needs.

Grid operators must have full confidence that EE resources will perform reliably, just like traditional wires. That’s why we developed **Sightline®**—ICF’s AI platform for utility program planning and implementation—to enhance the reliability and predictability of these assets by improving measurement at both the meter and premise levels. By incorporating traditional EE programs with complementary strategies like load management, **innovative marketing campaigns**, and more integrated planning, utilities can balance economic and environmental goals while evolving their program portfolios to better meet customer and operational needs.



Affordability

Top of mind: Energy affordability is a clear priority

Ensuring affordability for customers is a top priority for utility program leaders. **All respondents (100%)** recognize the importance of engaging with economically burdened communities, acknowledging that these often-overlooked groups can enhance participation in their customer programs. However, **93%** of program leaders admit that their current support for financially vulnerable communities falls short of what is necessary.

Figure 7: Agree or disagree: Engaging with disadvantaged communities who are often overlooked can provide an edge to increasing participation in our customer programs.

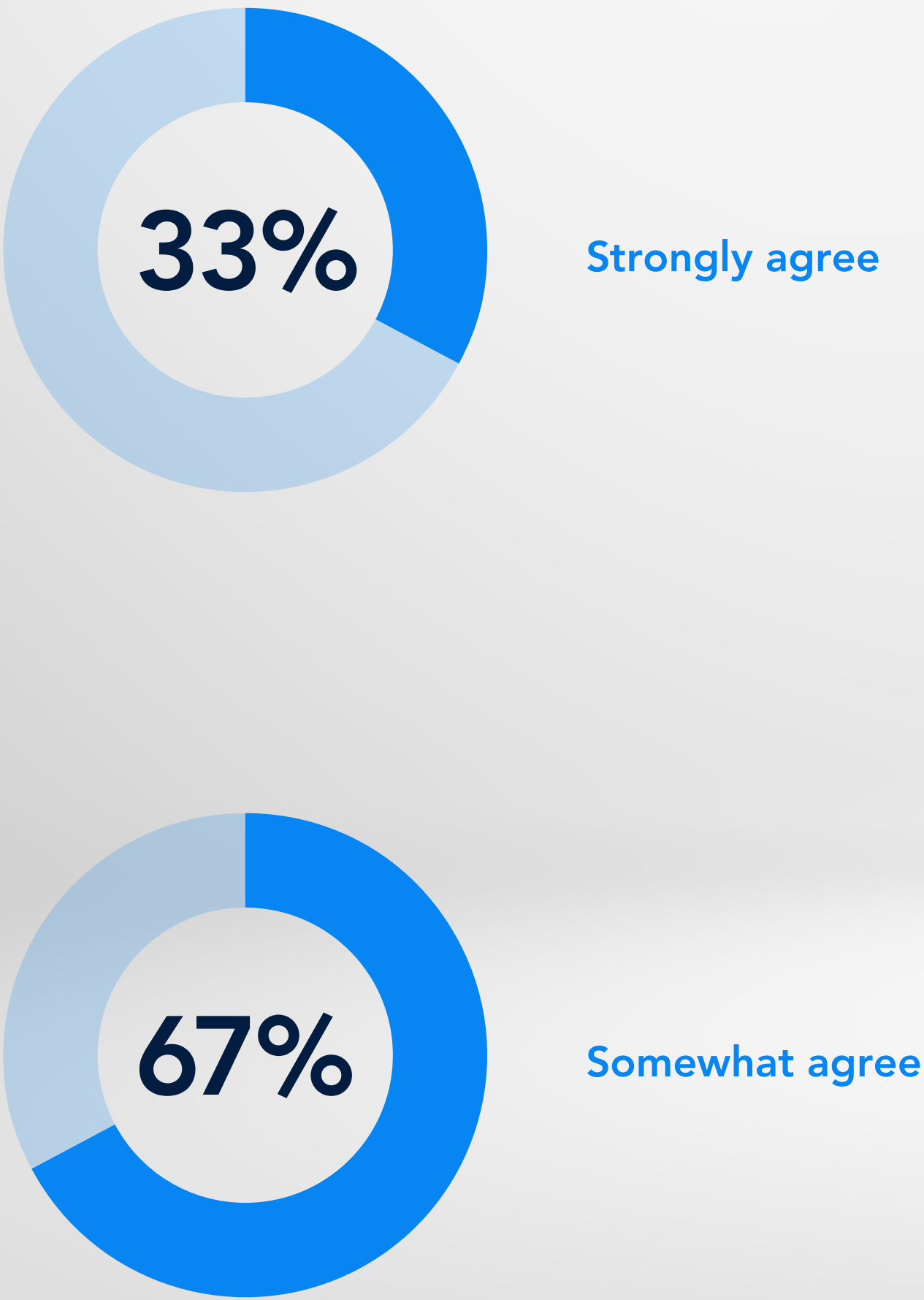


Figure 8: How much support does your utility offer to disadvantaged or financially in-need communities?

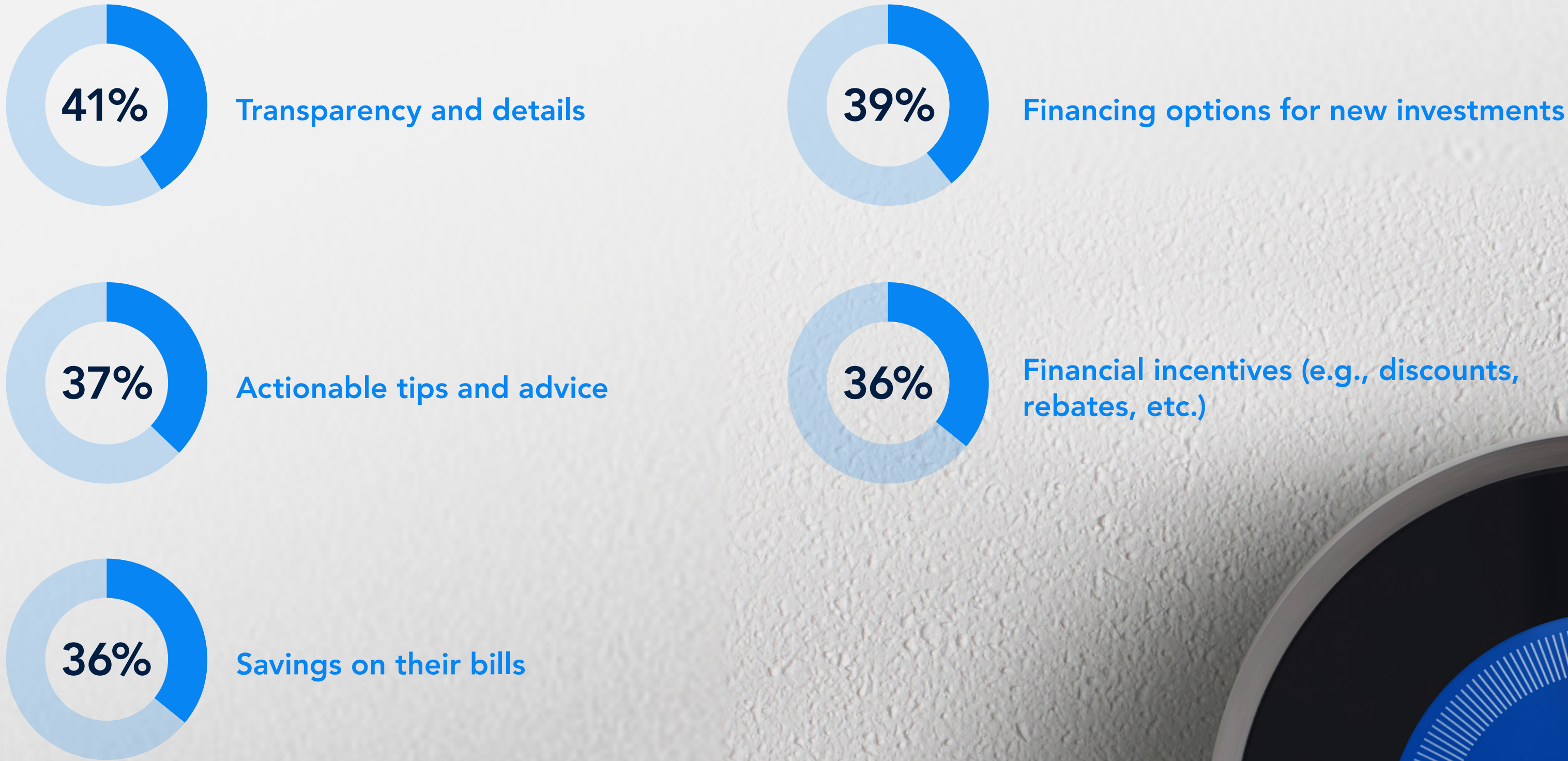




When it comes to successfully engaging customers about their programs, utility program leaders identified their top messaging and educational strategies. **41%** cite transparency in program details as the most effective approach for fostering trust and clarity, while **39%** say clearly communicating financing options for new investments is important.

Close behind, **37%** of respondents report that providing actionable tips and advice resonates well with customers, empowering them to make informed decisions. And both financial incentives (e.g., discounts, rebates, etc.) and bill savings are cited by **36%** of utility program leaders as effective strategies for enhancing customer engagement and participation.

Figure 9: What strategies have you found to be the most successful in engaging with customers about your customer programs?



Key takeaway

Utilities have work to do to prioritize affordability and make customer participation more accessible. But this moment also represents an opportunity for utilities to strengthen their outreach, ensuring that all communities can benefit from their programs and contribute to broader energy goals.

Based on ICF’s utility customer research and decades of industry partnership, we’ve developed a framework for enhanced communication between utilities and their customers. The framework relies on responsiveness and human connection to build trust. Keeping those qualities in mind while designing outreach around new programs and financing options can create real benefits for customers in economically burdened communities.



Technology

On the rise: Technology is growing in importance

Utility program leaders see technology as playing a key role in providing clean, reliable, and affordable energy—and are increasingly integrating technology and automation into their operations. **61%** of utility program leaders report they feel mostly prepared to integrate customer programs involving DERs for demand response. And **41%** say their load management, grid operations, and outage response are completely or mostly automated.

To keep pace with the rising adoption of DERs among customers, **64%** of utility program leaders are leveraging a distributed energy resource management system (DERMS) to manage these resources. While **46%** still rely on manual tracking through internal processes, an equal share (**46%**) now uses smart meters to track and manage consumption.

Figure 10: How prepared is your utility to integrate customer programs that use decentralized resources like DERs for demand response?

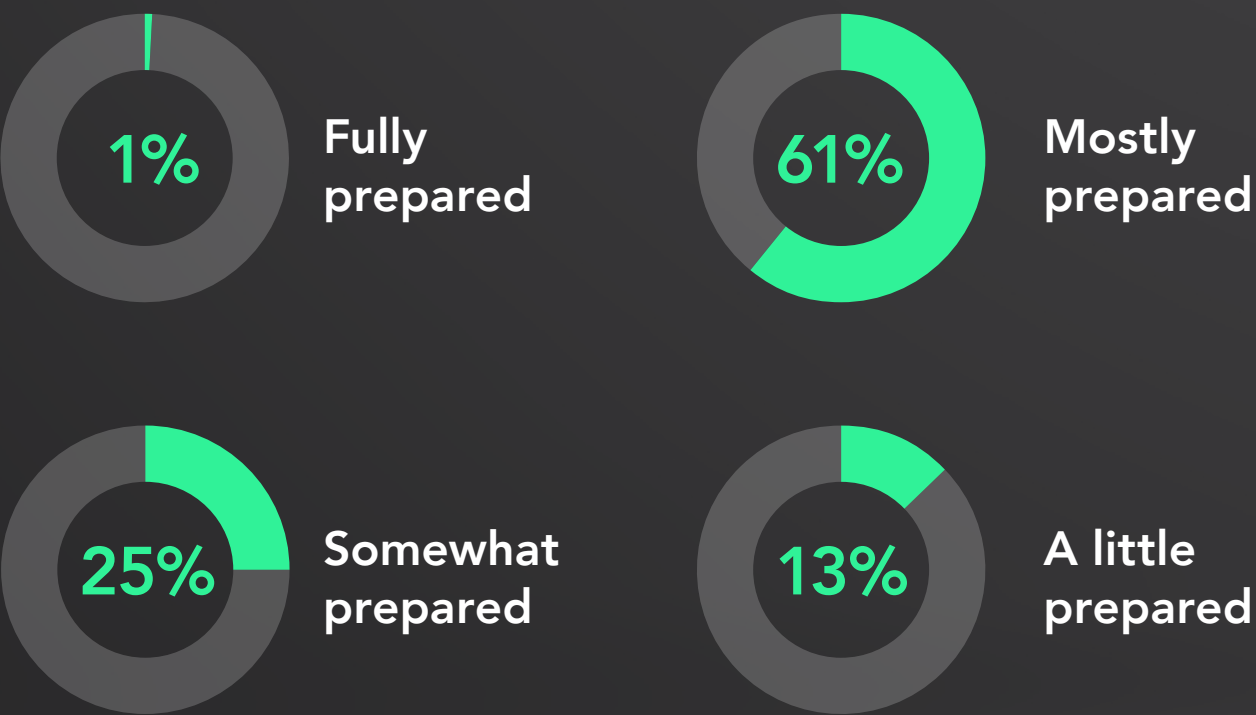


Figure 11: How much of your load management, grid operations, and outage response is manual or automated?

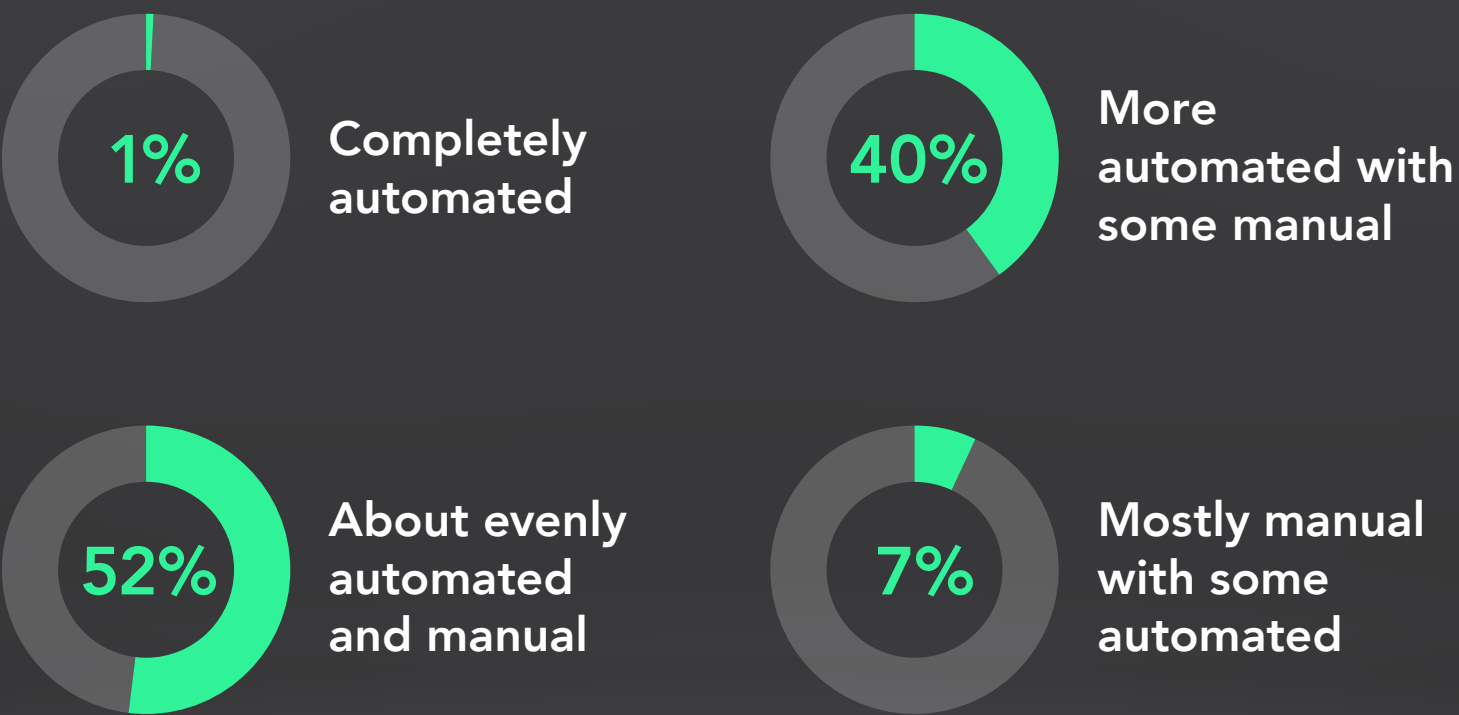
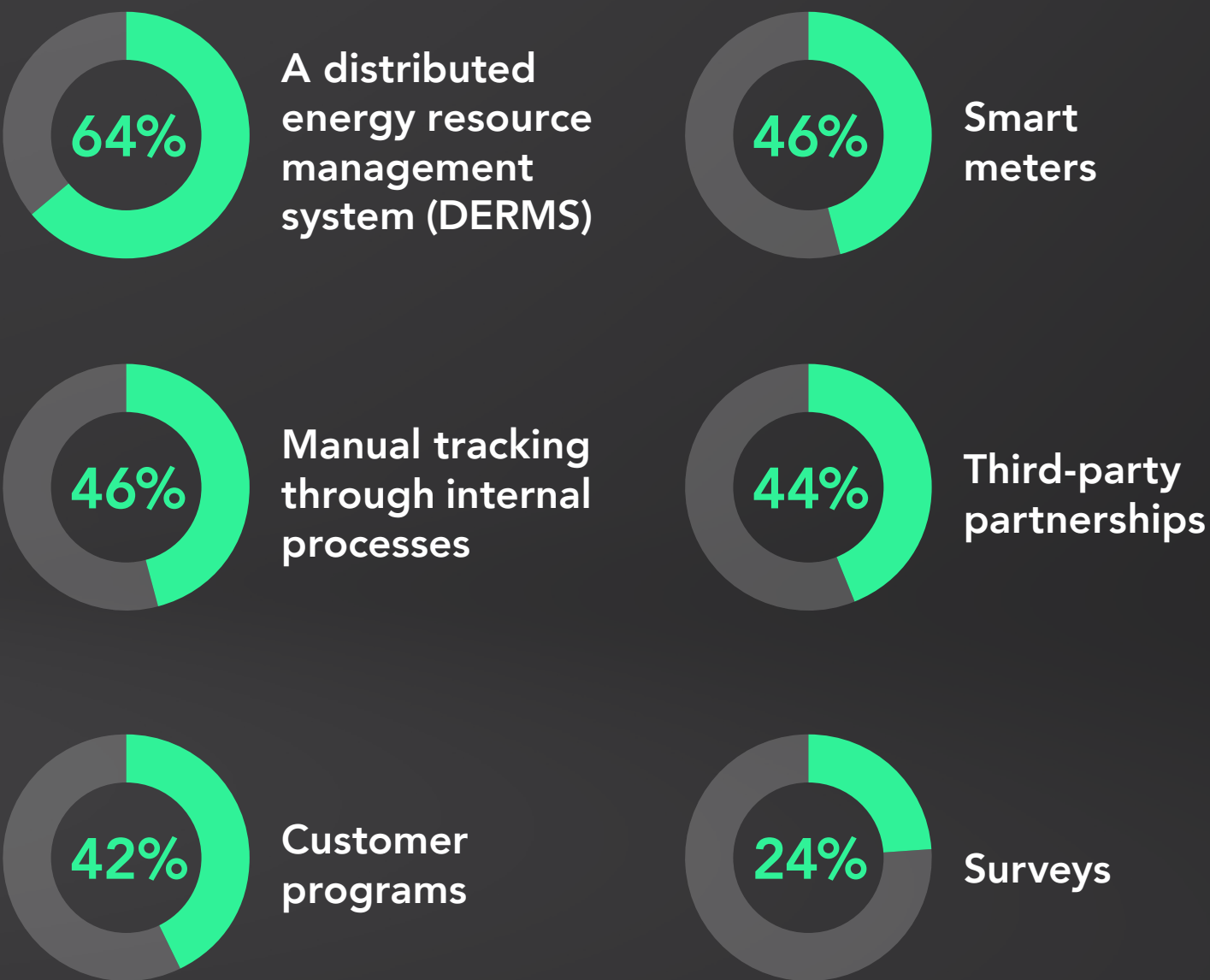



Figure 12: Which of the following, if any, is your utility using to track the rate of DER adoption among your customers?







Technology will be essential in equipping the energy workforce with the advanced skills needed to adapt to shifting operational and customer engagement demands. When asked about their top workforce challenges, **57%** of respondents rank the need to upskill or retrain existing workers as the most pressing issue.



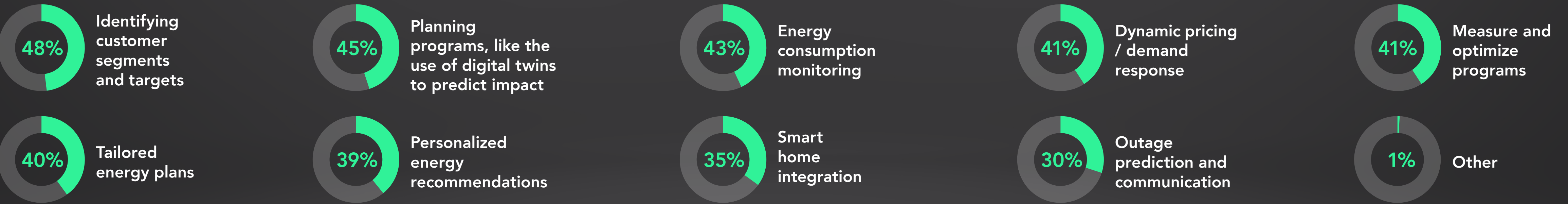
AI has grown significantly in the last three years, with a notable surge in investment and adoption across various industries—primarily driven by the rapid development of generative AI models. A strong **65%** of utility program leaders view leveraging AI as a game changer versus an overhyped solution.

Figure 13: Which comes closest to your opinion of how AI can help your utility?



Utility program leaders are leveraging AI in various ways, with **100%** of respondents indicating they’re using AI for at least one aspect of their customer programs. Top AI use cases include the identification of customer segments and targets (**48%**); planning programs, such as digital twins (**45%**); monitoring energy consumption (**43%**); and dynamic pricing/demand response (**41%**).

Figure 14: Thinking specifically about your customer programs, are you using AI for any of the following?



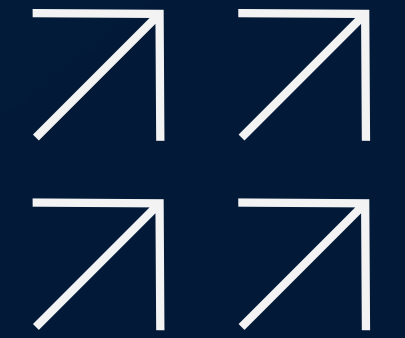
Key takeaway

It’s been 15 years since smart meters and other smart home technology changed the game for consumers and utilities. Now with the rise of AI, we’re seeing much more complex technologies like digital twins become close to table stakes. Our approach to holistic analysis looks across all technologies along with all utility assets to help clients maintain their systems and identify opportunities to save money.

Taking a system-wide view across the entire demand-side utility ecosystem (transmission, distribution, generation) allows us to help our clients design new programs, goals, metrics, incentives, and financial strategies—elements needed to ensure affordability and reliability for their customers.



# Conclusion



With growing external pressures like weather disasters and rising energy demand, along with internal challenges such as aging infrastructure, utilities must take a proactive approach to stay ahead in the evolving energy sector. The findings from our survey underscore that innovative and adaptable customer programs are critical to future success.

However, the survey also highlights key areas where utility programs must adapt. Leaders recognize the need to continuously innovate their program designs and metrics to drive customer participation and align with company-wide goals. Yet, they require the right tools, resources, and support to move forward successfully.

This calls for a holistic view of utility assets and a strategic approach to program design and implementation.

Fortunately, utilities don't have to leave their future to chance. Partnering with trusted advisers—those that bring extensive experience developing and implementing programs—offers a sure path forward.

ICF offers cutting-edge technology platforms and strategic advisory services based on deep data and insights, which can be applied to the priority areas utility program leaders say matter most:

- Enhancing customer participation in clean energy programs.
- Ensuring that all communities benefit from demand-side management programs.
- Leveraging AI and other advanced technologies to enhance program planning and performance.
- Maintaining grid stability and meeting the rising adoption of decentralized energy resources.

The insights from this survey provide a roadmap for utility leaders to navigate the challenges and opportunities ahead. By prioritizing financial accessibility, load management, energy affordability, and technological integration, utilities can create more resilient and customer-centric programs that drive the transition to a clean, reliable, and affordable energy future.



### Methodological notes

The ICF survey was conducted by Wakefield Research ([www.wakefieldresearch.com](http://www.wakefieldresearch.com)) among 100 utility program leaders, with a minimum seniority of director, between October 16th and October 28th, 2024, using an email invitation and an online survey.

Results of any sample are subject to sampling variation. The magnitude of the variation is measurable and is affected by the number of interviews and the level of the percentages expressing the results.

For the interviews conducted in this particular study, the chances are 95 in 100 that a survey result does not vary, plus or minus, by more than 9.8 percentage points from the result that would be obtained if interviews had been conducted with all persons in the universe represented by the sample.

All decimals are rounded to the nearest percentage point. This may result in certain numerical totals adding up to slightly more or slightly less than 100%.



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