SMART ENERGY DECISIONS RESEARCH

The 2019 State of Energy Management

A Smart Energy Decisions exclusive report with insights and trends from over 200 energy, sustainability, and facilities innovators.

Sponsored by:

urjanet buildingOS

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Smart Energy Decisions conducted the 2019 State of Energy Management survey, sponsored by Urjanet and BuildingOS, in order to understand:

- The key drivers for energy management programs
- The major barriers to successful energy management
- Tools, processes, and best practices utilized by the industry
- Opportunities to continue to modernize energy management

The survey was fielded in September and October. Responses from a total of 209 unique organizations were included in this report. These results demonstrated that while the most advanced energy management programs are taking advantage of automation and tools like Energy Management Information Systems to centralize, analyze, and report on program success, the majority of the industry is still stuck in the old ways of manual building data collection.

In this study, we uncovered that the biggest barrier to energy management success is the ability to make a business case for energy management tools and technologies. The issue is exacerbated by the fact that many energy managers lack the staff time or infrastructure to prove the ROI of their projects, which could assist in gaining buy-in for further investment from the corporate level. Still, a significant portion of more advanced energy managers can serve as an example of the strategies and tools that lead to success.

It is important to note that the results of this survey are a snapshot in time. While these trends may be true for now, data from the Department of Energy's Smart Energy Analytics Campaign proves that Energy Information Systems' median payback timeline is 1.5 years post-implementation. As more proof points and ROI stories are shared among peers, we project that by this time next year, the industry will move even further toward modernizing its tools and automating its processes.

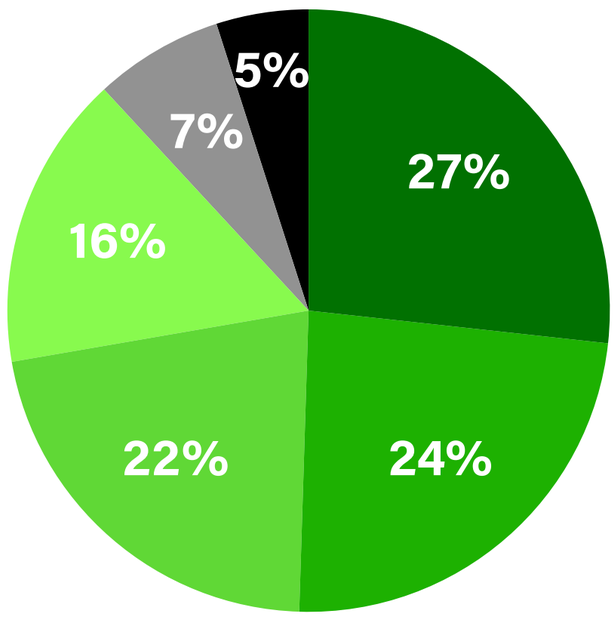
> "The biggest barrier to energy management success is the ability to make a business case for energy management tools and technologies."

Q1 About this report – who did we survey?

Results of this study include 209 energy, sustainability, and facilities professionals across multiple industries in varied stages in their energy management journey. In this report, we will break down the demographics of our survey by the following: industry, number of sites managed, and current stage in energy management journey.

Industries

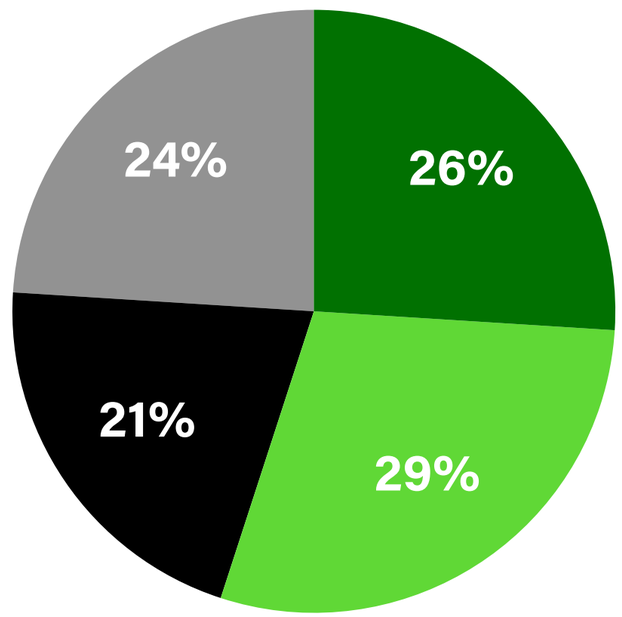
Which of the following best describes your organization?



- Higher Education - 27%
- Commercial - 24%
- Industrial & Manufacturing - 22%
- Government - 16%
- K-12 - 7%
- Healthcare - 5%

Number of Sites

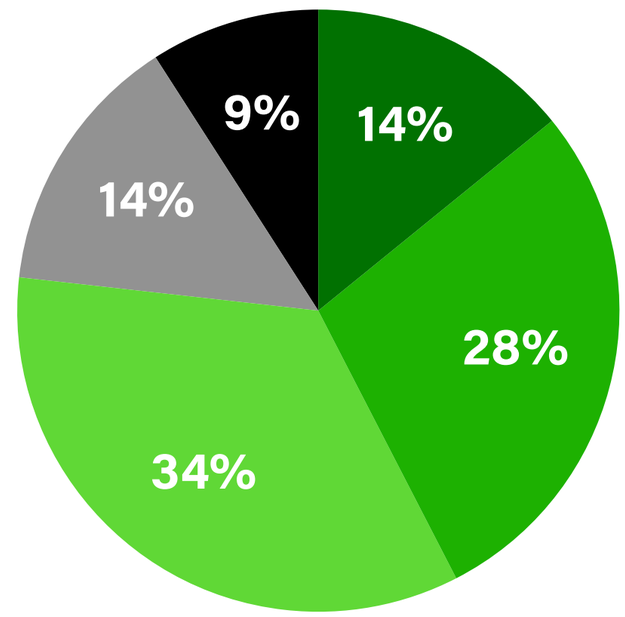
How many sites does your company operate?



- 1-9 - 26%
- 10-99 - 29%
- 100-499 - 21%
- 500 or more - 24%

Stage In Journey

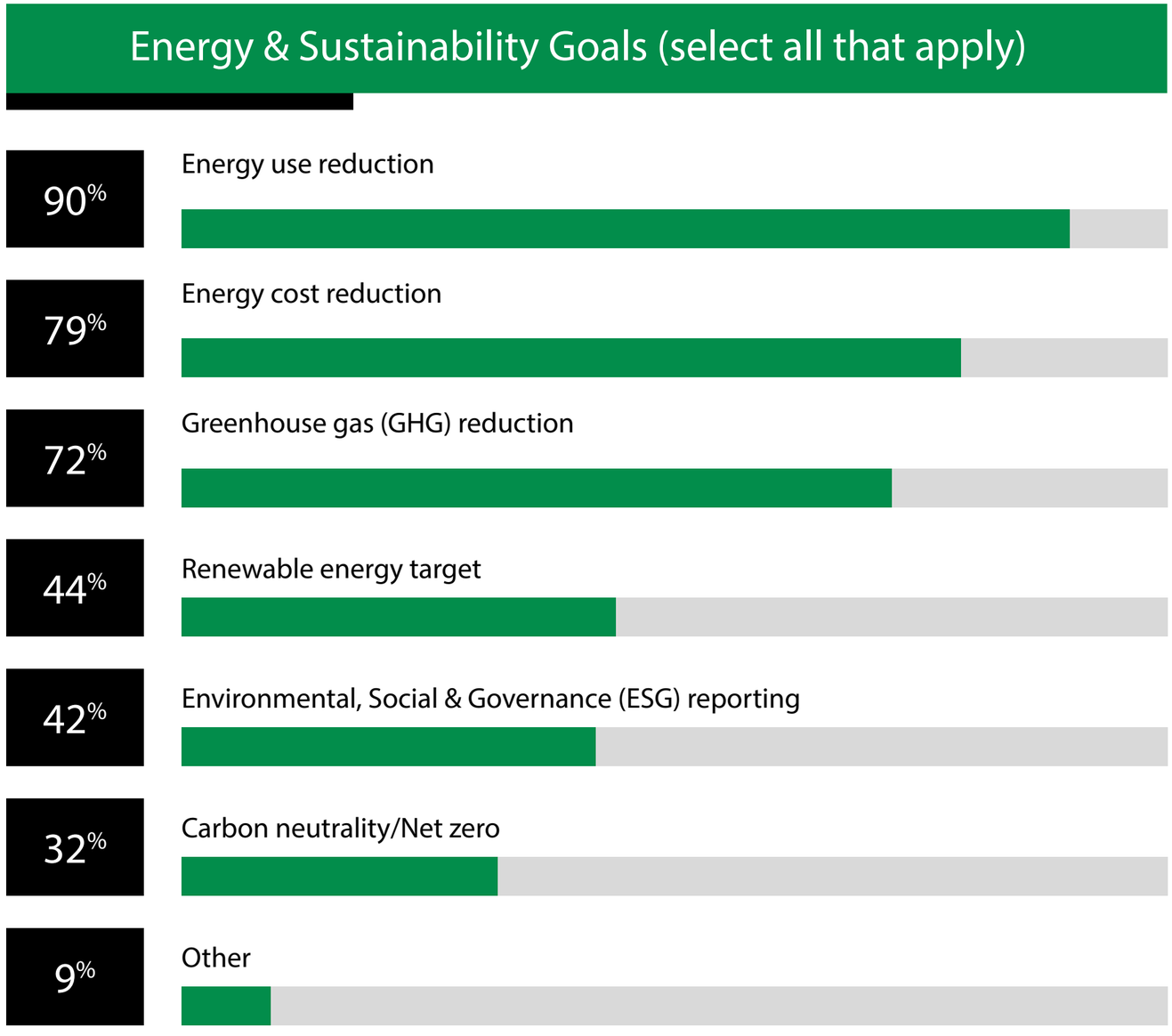
Which of the following best describes where you are on the journey in using energy data to manage your business?



- At the beginning - 14%
- First steps - 28%
- Picking up speed - 34%
- Well on our way - 14%
- Ahead of the crowd - 9%

Source: SED Research, 2019

Q2 Which of the following energy and sustainability goals is your organization committed to?



Out of all major goals contributing to energy management initiatives, the responses showed that:

- An overwhelming majority of respondents (90%) have committed to energy use reductions. More than three-quarters (79%) have energy cost reduction goals, while 72% have GHG reduction goals.
- At least one-third of all respondents have what the industry refers to as "sustainability goals," including renewable energy targets, ESG reporting, and carbon neutrality goals.
- Advanced respondents (those well on their way or ahead of the crowd) have the highest rate of goals across the board.
- Among "other" comments, 5% referred to water and waste reduction.

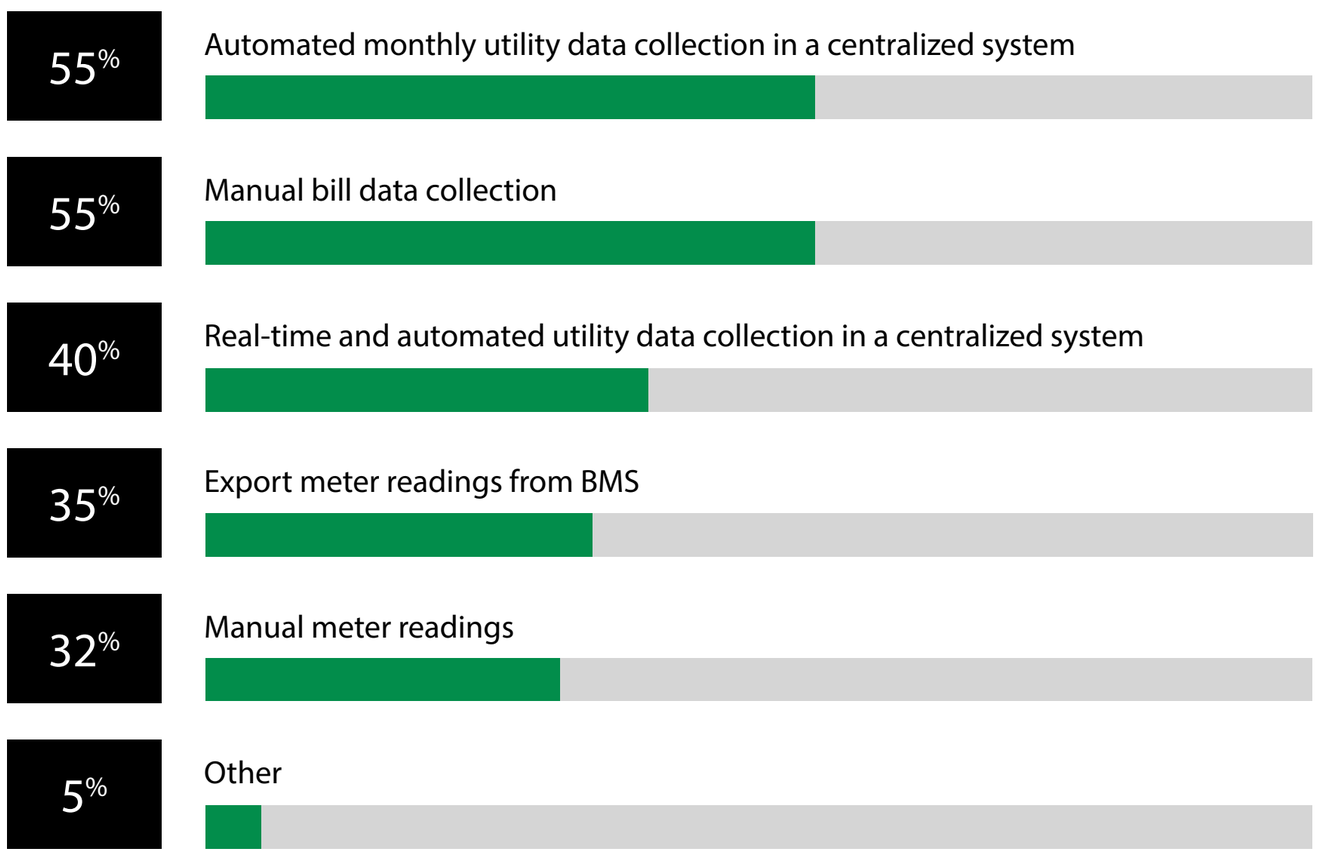
Interesting notes by Industry:

A larger percent of Industrial respondents (84%) have GHG targets compared to all other organization types. Interestingly enough, Industrials represented the lowest percentage of energy cost reduction goals. This seems to indicate either that because of the size and scale of industrial operations, it can be difficult to track cost savings, or that Industrial organizations' sustainability goals are driven more by public perception and regulation than by the bottom line. Government posts the highest percentage among all for energy cost reduction goals and renewable energy targets.

Source: SED Research, 2019

Q3 How does your organization currently collect building data?

Collection Methods (select all that apply)



To understand the current state of energy management, we started with the basics of how professionals across the industry are collecting building energy data.

55% of respondents use manual processes for collecting at least some of their bill data.

55% use automated methods for collecting at least some of their data.

59% use a combination of methods. For example, some use both manual and automated methods for collecting data.

71% of respondents who rated themselves Advanced in their energy management journey are using real-time automated data.

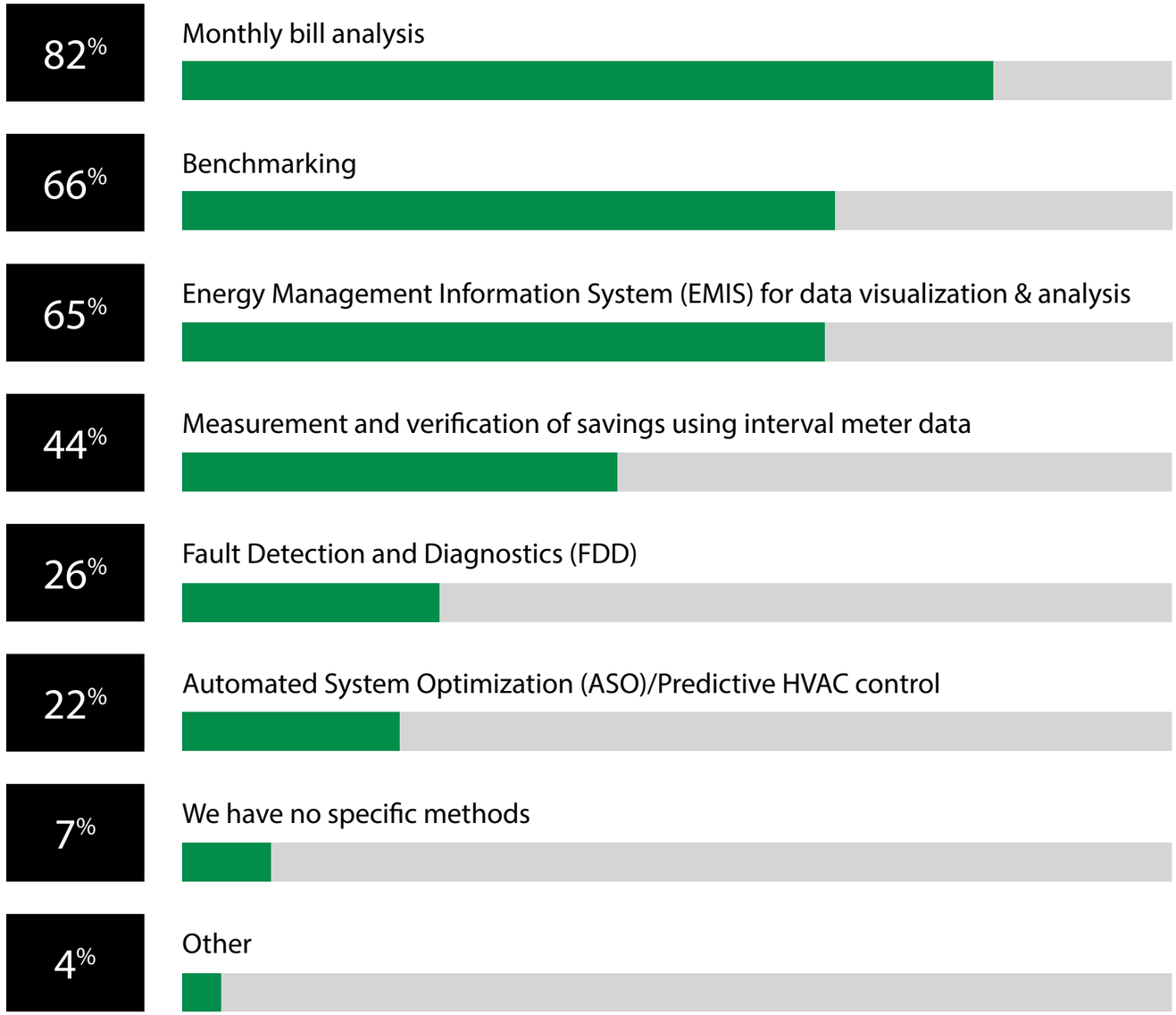
Methods vary by organization type:

- The top method used by Higher Education is manual bill data collection (59%)
- 76% of Commercial uses automated centralized systems - by far their top method
- Industrial also puts automated/centralized at the top (though by a lower percentage at 58%)

Source: SED Research, 2019

Q4 Which of the following methods does your organization currently use as part of your energy management and/or sustainability programs?

Measurement Methods (select all that apply)



Source: SED Research, 2019

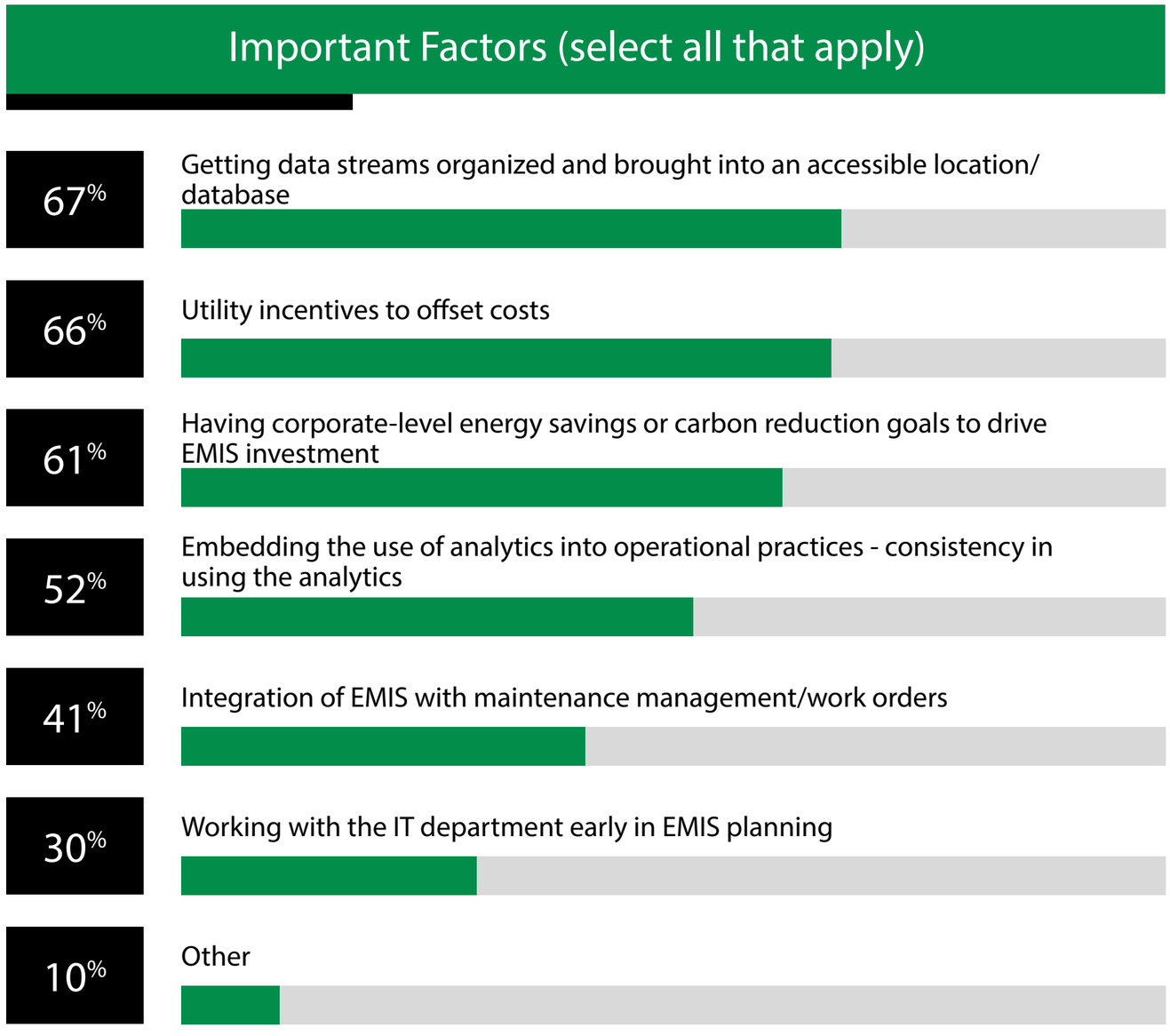
With the aim of understanding what tools, processes, and methods the industry uses to execute their energy management programs, our survey found that:

- A monthly bill analysis is conducted by a majority of respondents (82%). But 38% of these respondents marked monthly bill analysis as their ONLY method for energy management. This creates a massive opportunity for the industry to dive deeper into real-time energy data for better building optimizations.

Interesting notes by Industry:

- 94% of respondents who described themselves as Advanced in their energy management journey use an Energy Management Information System (EMIS). This proves that centralization and automated access to building data is key to modern energy management.
- While FDD is used by only about one-quarter of total respondents (26%), the number rises to 44% for those with 500 or more sites and 50% among advanced respondents.

Q5.1 What factors are important to the success of your energy management program?



This portion of the survey sought to understand all of the factors that are important to energy management success, as well as which individual factors were the most important to energy, sustainability, and facilities professionals.

Organizing and making data accessible is the #1 factor for energy management success success, cited by 67% of total respondents.

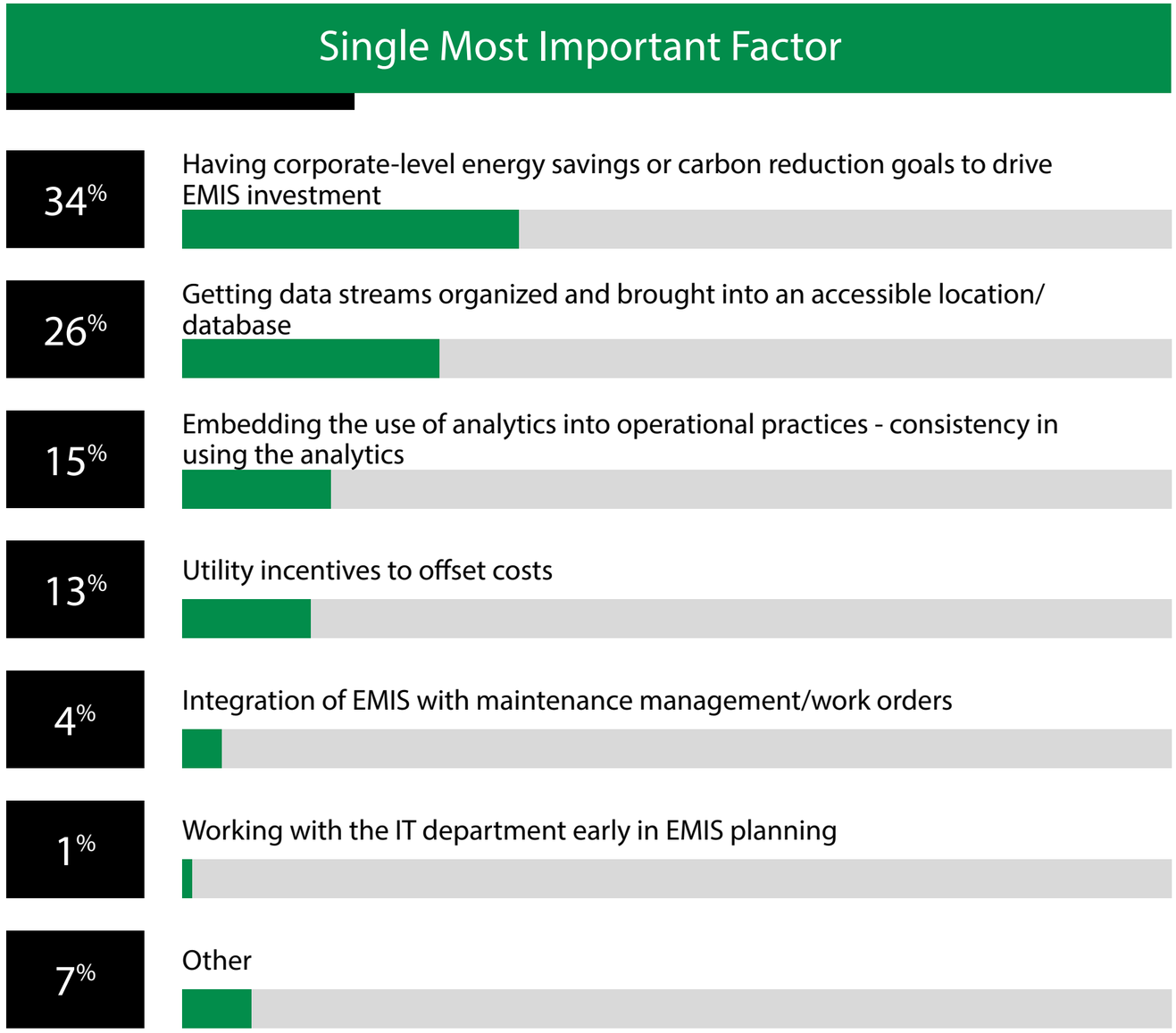
- Database organization and accessibility was chosen by 67% as an important factor.
- Half of all "other" responses focused on communicating and reporting issues.

Results vary by segment:

- Utility incentives is a close #2 factor among total respondents (67%) and is the #1 factor for Industrials (78%).
- Among Advanced energy managers, corporate goals and data analytics tie for #1.

Source: SED Research, 2019

Q5.2 What factors are important to the success of your energy management program?



Corporate goals rises to the top as the single most important factor.

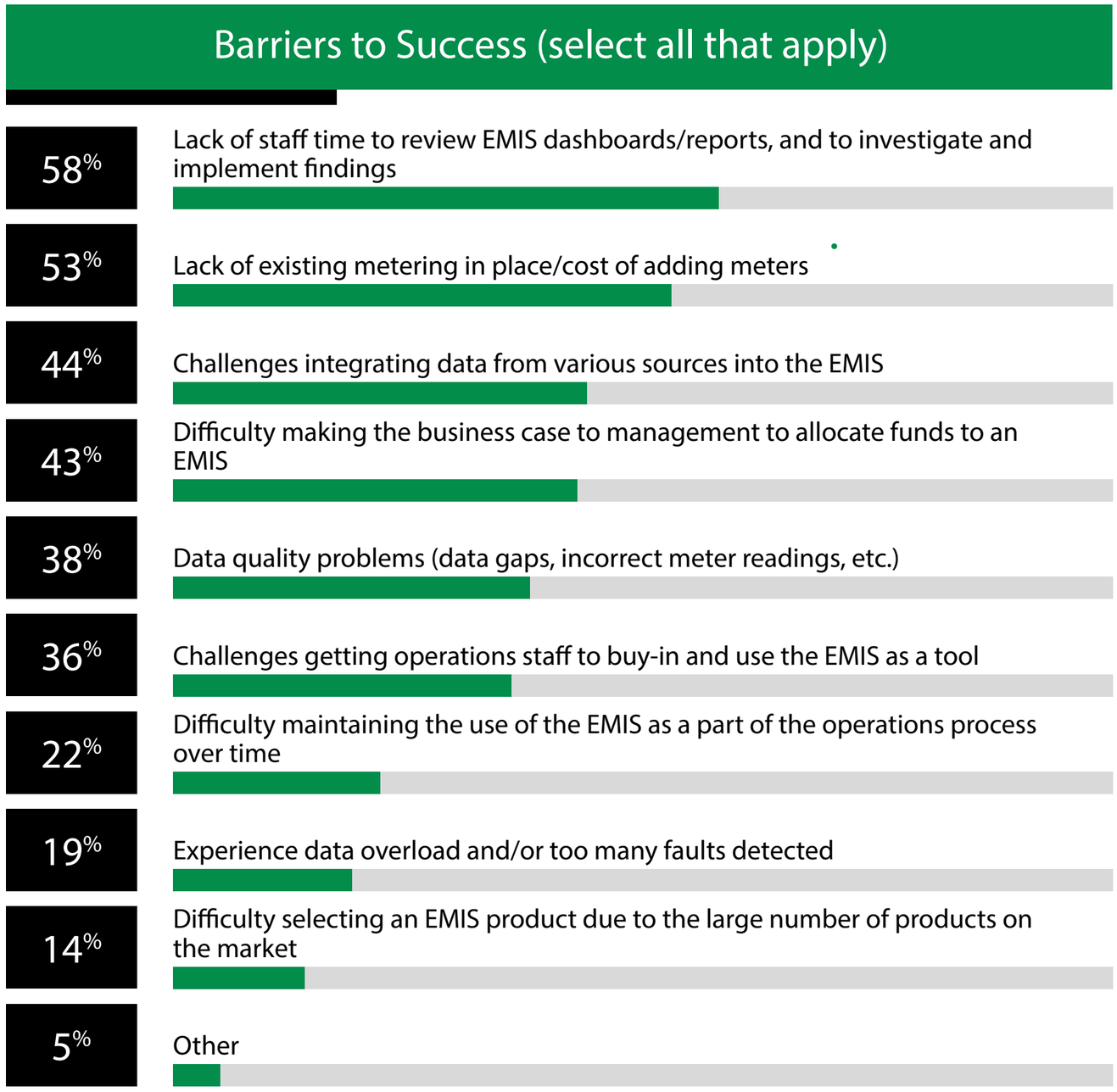
- Corporate goals ranked 3rd among multiple choices but rises to the top as the single most important driver of a successful energy management program, cited by about one-third of total respondents.
- Making data streams organized and accessible is the most important factor for about one-quarter of total respondents.

Different segments, different responses:

- Corporate goals were especially crucial to Industrials (53% vs. 34% among the total).
- Overall, corporate goals were the top priority for Commercial and Industrial segments, and those in Middle and Advanced groups.
- Oraganized and accessible data was the top priority among Higher Education and Government, as well as those who classified themselves as Beginners on their energy management journey.

Source: SED Research, 2019

Q6.1 What factors have been barriers to the successful implementation of your energy management information systems?



Source: SED Research, 2019

Though a centralized, automated system is key to the success of a Modern Energy Management program, a majority of respondents have not yet adopted an EMIS. When asked for the top barriers they face when implementing a new solution, professionals responded with the following:

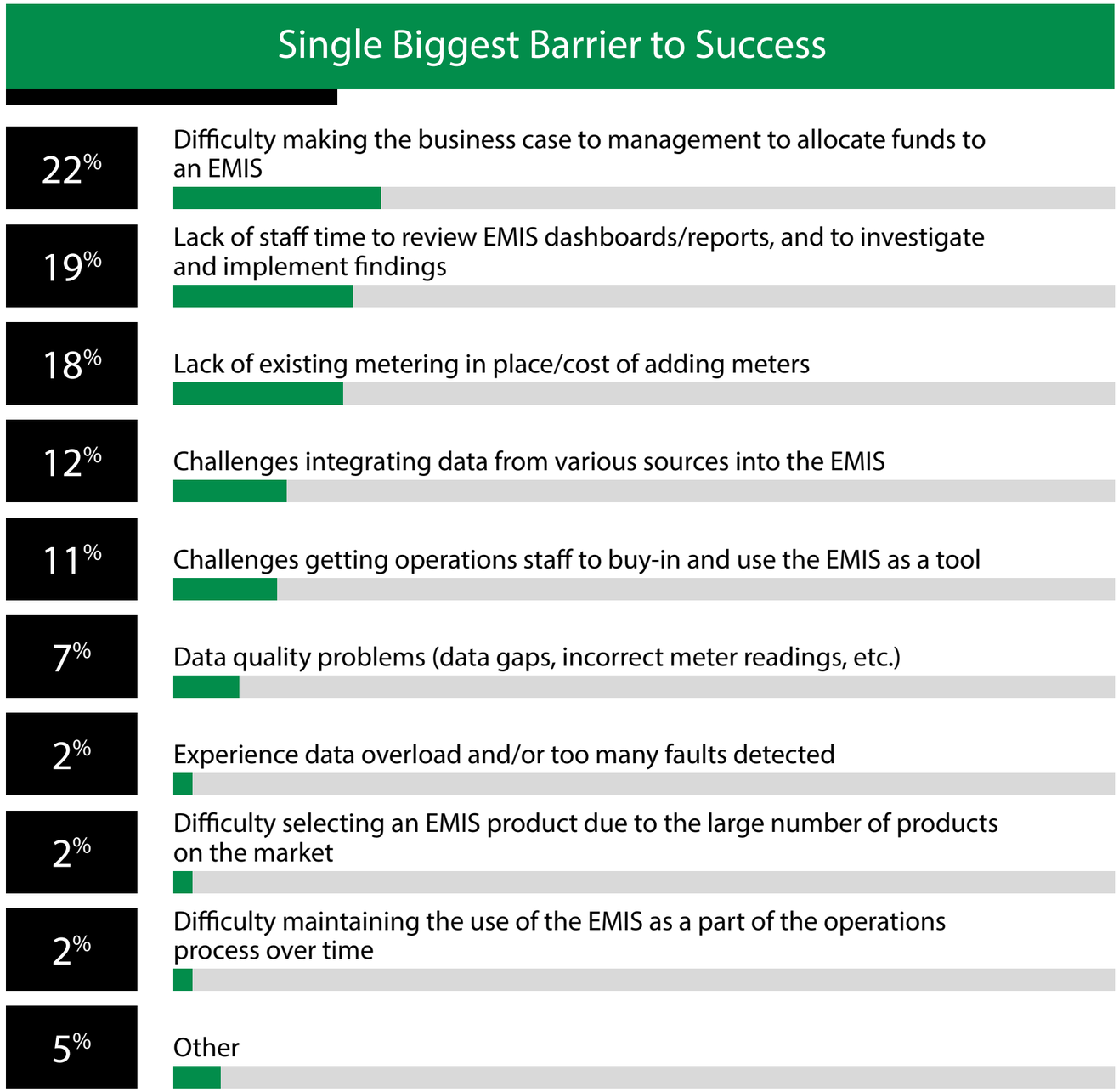
Lack of staff is the biggest barrier among total respondents

- While not at the top of the list among multiple choices, difficulty making the business case is consistently mentioned as an additional barrier. However…
- Allocating staff to review, analyze, and react to EMIS reports was cited by 58% of total respondents.
- Metering issues, including lack of existing equipment and cost of adding meters, was chosen by 53% of the total.

Barrier to success among segments:

- Lack of existing metering was selected as a barrier most often by respondents from Higher Education, Industrial, and those operating 1-9 sites; all other segments chose lack of staff most often.

Q6.2 What factors have been barriers to the successful implementation of your energy management information systems?



Difficulty making the business case for EMIS funds rises to the top as the single biggest barrier to implementation.

- Making the business case was cited by 22% of total respondents as the single biggest barrier.
- Lack of staff to focus on the programs (at 19%) and lack of existing metering/cost of adding meters (18%) were are close in the ranking of barriers.

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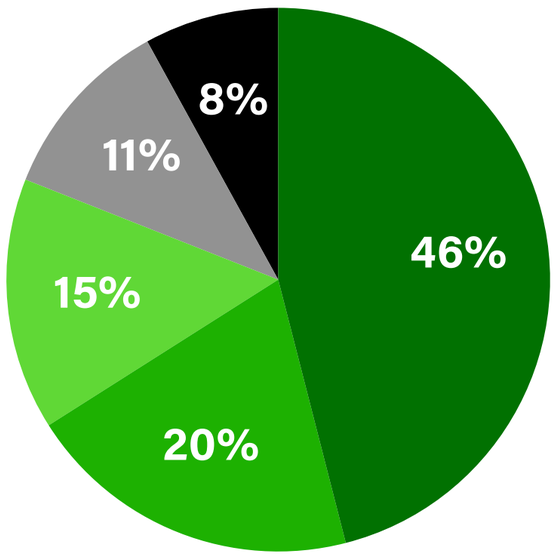
We see this as a huge opportunity to drive the industry forward by using ROI stories from successful implementation in a business case to prove the value of EMIS.

Source: SED Research, 2019

Q7+ State of Utility Bill Data Analysis

Number of Bills

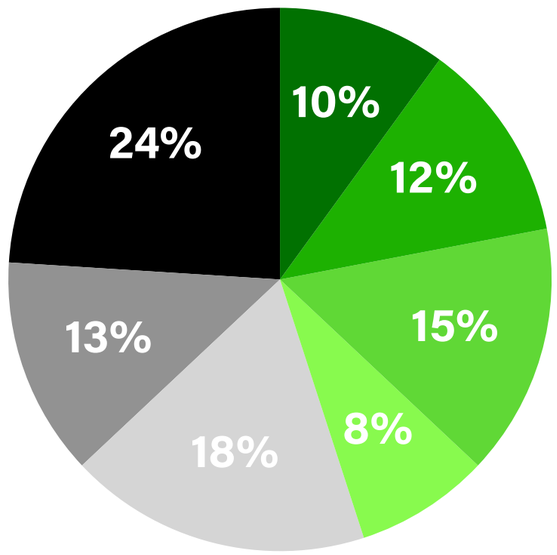
Approximately how many utility bills does your company process per month?



- Less than 500 - 46%
- 500-999 - 20%
- 1,000-4,999 - 15%
- 5,000 or more - 11%
- Not sure - %

Hours Spent

How many hours per month does your company spend processing utility bills?



- 0 hours - 10%
- 1-4 hours - 12%
- 15-9 hours - 15%
- 10-14 hours - 8%
- 15 hours - 18%
- 16-29 hours - 13%
- 30 hours - 24%

Analyzing utility bill data remains the foundational first step of most energy management programs. Our survey investigated the average volume of bills and time spent processing bills across the industry.

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respondents spend 30 hours a month processing bills, which was the maximum on our scale. This raises the possibility that some of this 25% spends more than 30 hours per month processing bills.

- The average respondent spends 15.1 hours per month processing utility bills.

Bill processing time varies by segment:

- Advanced respondents average at 16.5 hours. It's important to remember that 42% of the advanced group operates 500+ sites.
- By company type, Government is the highest at 19.5 hours per month, followed by 16.3 hours from Higher Education.

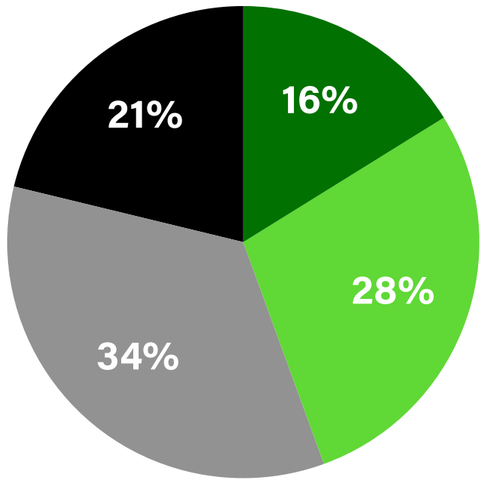
Source: SED Research, 2019

Q7.2 State of Utility Bill Data Analysis continued…

Next, the survey dove deeper into the current methodologies most commonly used to collect and process utility bill data.

Hand-keyed Bills

What percentage of your utility bills are hand-keyed?



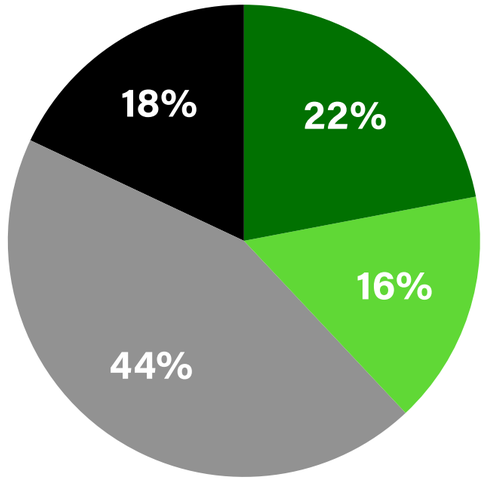
- 0% - 16%
- 1-50% - 28%
- More than 50% - 34%
- Not sure - 21%

34% of respondents are still hand keying more than 50% of their bills.

- 62% of respondents are still hand keying at least some of their utility bill data.
- This creates a huge opportunity for the industry to improve their processes by automating utility bill data collection. Doing this opens up time for energy teams to execute more important energy projects.

Processed by Technology

What percentage of your utility bills are processed using technology?



- 0% - 22%
- 1-50% - 16%
- More than 50% - 44%
- Not sure - 18%

44% of respondents are using technology to process more than half of their utility bills.

- 58% of Advanced energy leaders use technology to process their bills.
- Surprisingly, 32% of Higher Education respondents are not using any tech at all to process utility bills, but 79% listed "Monthly Bill Analysis," traditionally a time- and labor-intensive process if done manually, as their main method for energy management.

Source: SED Research, 2019

CONCLUSION

Energy Management in 2020 and Beyond

Across industries ranging from Higher Education and Government to Commercial and Industrial companies, energy managers share a surprising number of similarities. Almost all of our survey respondents stated the same goals: reducing energy usage and environmental impact, getting building data organized and accessible, and gaining buy-in from the corporate level to achieve those goals.

Many also face similar barriers to success in their energy management programs: insufficient staff or staff time to dedicate to program analysis, a lack of existing infrastructure (whether it be submeters or a data management system), and difficulty making a business case for investments in modern technology.

Meanwhile, there is a clear pattern to the energy managers who describe themselves as "advanced" in their energy management journey. The vast majority of advanced energy managers have automated their monthly bill collection, analyze real-time building data, and utilize an Energy Management Information System to drive their energy goals forward.

The question becomes, then: how do we close the gap between the beginners and the advanced? How can energy, sustainability, and facilities professionals overcome their barriers to success and follow in the footsteps of industry leaders?

The answer may be as simple as starting slow. By automating the basics of monthly bill collection, energy teams can ease the strain on staff time and dedicate more time to advanced projects. By finding cost-effective sources of interval meter data, energy teams can avoid the cost of submeter installation and start getting closer to real-time analysis.

Most importantly, by proving the ROI of their initial projects – even small wins – energy teams can start to build the business case to executives for future investments. With the numbers to back them up, energy managers can show the corporate team how much they have saved the company so far – and how much more they could save with the powerful insights of an automated, centralized EMIS.

Areas of Opportunity

- Reduce manual data collection processes and adopt automation
- Adopt performance-enhancing tools like Energy Management Information Systems
- Increase the use of real-time data analysis to maximize the efficiency

Visit the website of our sponsor, BuildingOS, to explore modern energy management tips and best practices from your peers: ModernEnergyManagement.co

SMART ENERGY DECISIONS

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Our mission is to help large electric power users improve their profitability and reduce their carbon emissions by adopting best practices in energy efficiency and renewable energy sourcing.

For more information, go to www.smartenergydecisions.com or contact John Failla, Founder & Editorial Director, john@smartenergydecisions.com

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