Crossing the sustainability chasm: strategies and tactics to achieve sustainability goals

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Executive summary

A recent study by Gartner, in collaboration with TRIRIGA, an IBM Company, surveyed 130 professionals responsible for the planning and implementation of sustainability initiatives across large corporations and public sector organizations. TRIRIGA completed a thorough analysis of these survey results and found that while most large organizations measure energy and environmental performance, barely a third have "crossed the sustainability chasm" and actually achieved their sustainability objectives.

What is the sustainability chasm?

The sustainability chasm refers to the gap we found between two distinct groups of organizations seeking to achieve their sustainability goals—the first, a group who were quick to understand the environmental and economic benefits of sustainability and achieved their goals through the implementation of energy and environmental programs, and the second a mainstream group that is attempting to move beyond the measurement of environmental performance and evaluation of opportunities to achieve their sustainability goals.

This white paper summarizes TRIRIGA's research findings based on the stage of maturity that organizations exhibit in the implementation of their energy and environmental program. Based on these criteria, respondents were categorized into one of three groups:

1. **Achievers:** These respondents have implemented energy and environmental management projects and successfully crossed the sustainability chasm to achieve targeted reduction goals. Achievers accounted for 34 percent of all survey respondents.
2. **Planners:** These respondents are measuring energy and environmental performance and evaluating opportunities to meet sustainability goals, but have yet to cross the sustainability chasm; they are well positioned to benefit from the lessons provided by Achievers. Planners were by far the largest maturity group, accounting for 58 percent of all respondents.
3. **Stragglers:** These respondents indicated that they have no energy or environmental strategy. Stragglers were a clear minority, accounting for only eight percent of all respondents.

Through its research, TRIRIGA uncovered several key characteristics that exist within those organizations that have successfully "crossed the sustainability chasm" and provide best practice examples for those that plan to achieve energy and environmental goals.

Key findings

In general, Achievers utilize the following strategies, tactics and technologies more than Planners and Stragglers to achieve their sustainability goals:

- Achievers involve executive management throughout each stage of the sustainability program, and especially during the initial development of the sustainability strategy and for approval.
- Achievers use organization-wide internal teams to evaluate and implement sustainability projects.
- Achievers rank sustainability as a top five priority within real estate and facilities.
- Achievers establish dedicated budgets for energy or sustainability investments and most Achievers expect these budgets to increase over the next three to five years.
- Across all respondent groups, energy efficiency was the highest priority by a large majority. Almost all Achievers invest in improved energy efficiency within their facilities.
- Achievers collect energy information from buildings across the entire portfolio or a subset of the portfolio and target worst-performing buildings for investment.
- Achievers invest in three clear high-level tactics to achieve sustainability goals:
  1. Increased facility energy efficiency
  2. Improved equipment servicing and maintenance
  3. Increased space utilization (i.e. space optimization)
- Achievers utilize enterprise-class technology to support sustainability initiatives.

Introduction

This white paper covers the primary findings from the Sustainable Asset Management Survey conducted by leading independent analyst firm Gartner in collaboration with TRIRIGA. The survey questions covered all aspects of energy and environmental programs, with an emphasis on how facilities and technology contribute to meeting sustainability goals. There were two primary objectives for the survey:

1. Gain insight into the strategies and tactics that large organizations use to reduce energy use and improve environmental performance within facilities and other assets
2. Understand the role technology plays in management of their sustainability efforts

Scope of the survey

This joint study surveyed a total of 130 executives and professionals responsible for the planning and implementation of sustainability initiatives in large corporations and government agencies (see Figure 1).

- Private sector respondents were evenly divided between large retail, manufacturing and business service companies; each with at least $1 billion in annual revenue. Almost 50 percent of private respondents were from companies with at least $10 billion in annual revenue.
- Public sector respondents were from large federal, state and local government agencies with an annual operating budget of at least $1 billon. Half of public sector respondents were from organizations with annual operating budgets of at least $10 billion.
- More than 60 percent of respondents were from organizations that controlled more than 100 facilities.
- All were in some way involved with the evaluation and selection of technology to support environmental, real estate, and/or sustainable asset management initiatives.

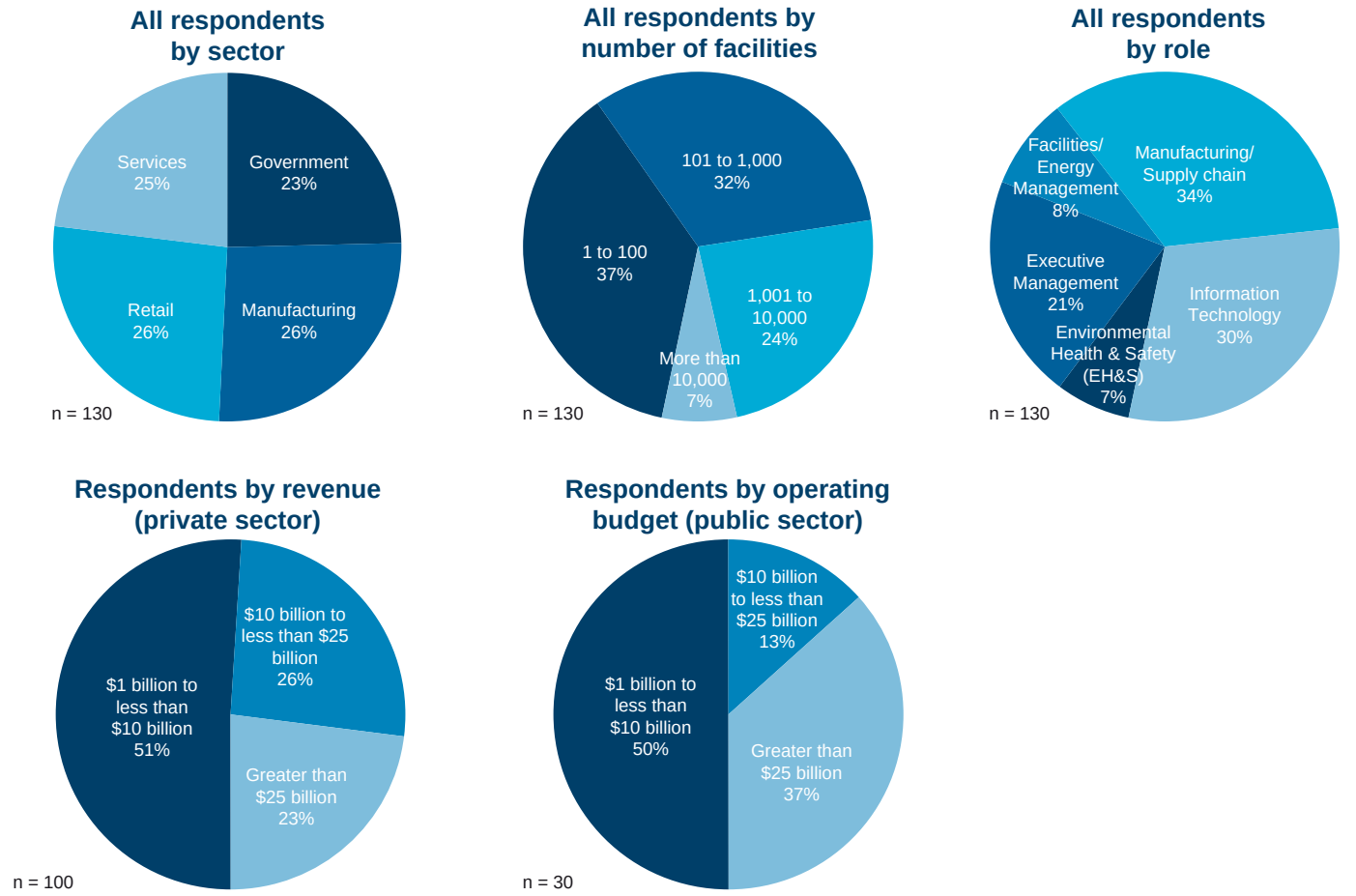


Figure 1: Respondent demographics

A focus on achievement

TRIRIGA conducted a thorough analysis of the survey data and uncovered several key characteristics that exist within those organizations that have successfully achieved their energy and environmental goals. Many organizations have implemented a sustainability strategy, but relatively few have actually achieved goals. To identify those who have "crossed the sustainability chasm," respondents were asked to indicate what stage of maturity their organization was at in implementing their energy and environmental program (see Figure 2). Based on the response to this question, they were categorized into one of three groups:

1. **Achievers:** Achievers have crossed the sustainability chasm and, as such, they provide a basis for uncovering best practices. These respondents have implemented energy and environmental management projects and achieved reduction goals. Achievers accounted for 34 percent of all survey respondents (see Figure 2).

Which of the following best describes the stage your organization is at in implementing its energy and environmental management strategy?

n = 130

Figure 2: Breakdown of respondents by maturity group and stage

2. **Planners:** These respondents are measuring energy and environmental performance and evaluating opportunities to meet sustainability goals. Planners have yet to cross the sustainability chasm and they are well-positioned to benefit from the lessons provided by Achievers. Planners were by far the largest group, accounting for 58 percent of all respondents (see Figure 2).
3. **Stragglers:** These respondents indicated that they have no energy or environmental strategy. In general, Stragglers lack the necessary executive focus, strategy and investment required to effectively manage energy and environmental performance. Stragglers were a clear minority, accounting for only eight percent of all respondents (see Figure 2).

The majority (66 percent) of large organizations have yet to implement projects and achieve sustainability goals (see Figure 3).

Respondents by maturity

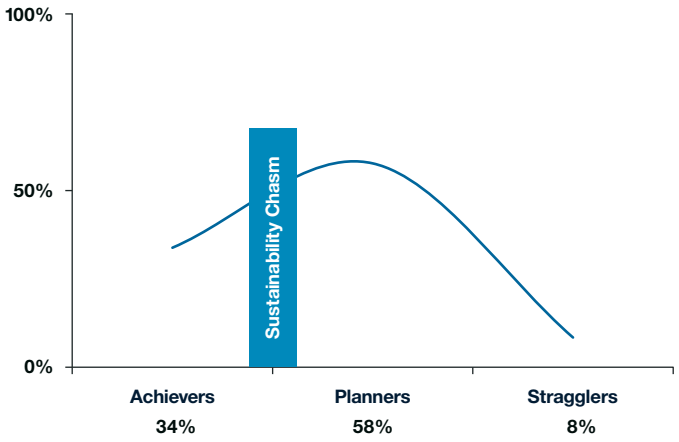


Figure 3: Distribution of respondents by maturity stage

Taking a lead—management involvement in sustainability programs

A sustainability program, like most strategic initiatives, is much more likely to succeed with strong executive management support from its first stages and with specific resources dedicated to its implementation.

Executive involvement

The survey showed that organizations where senior executives were involved in the creation and management of sustainability programs were significantly more likely to achieve their objectives, particularly if the executives were partially rewarded on the achievement of these goals.

- More than 40 percent of Achievers, compared with less than 30 percent of Planners or Stragglers, reported that executive management was involved in the *development* of their security strategy.
- More than 40 percent of Achievers and Planners, compared with 18 percent of Stragglers, reported that executive management was involved in *evaluating* sustainability projects.
- A majority of both Achievers and Planners (55 and 56 percent, respectively) reported that their executives were *partially rewarded* for meeting either general sustainability goals or specific energy efficiency goals.

One overwhelming message of the survey was that the establishment of a single organization-wide internal team to plan and execute energy and environmental projects was an important determinant of success. Such a team can prioritize sustainability goals, communicate them more effectively across the organization, and provide greater consistency in the allocation of capital to specific projects.

- The primary management structure for energy and environmental management projects was a central internal team for almost 60 percent of Achievers. The comparable figure for Stragglers was nine percent.
- Among Stragglers, 73 percent of respondents reported using decentralized internal teams, compared with 18 percent of Achievers.
- A small percentage of all respondents reported using third-party service providers for the primary management of energy and environmental programs.

What is the primary project management structure used for planning and executing energy efficiency and environmental management projects and programs at your company?

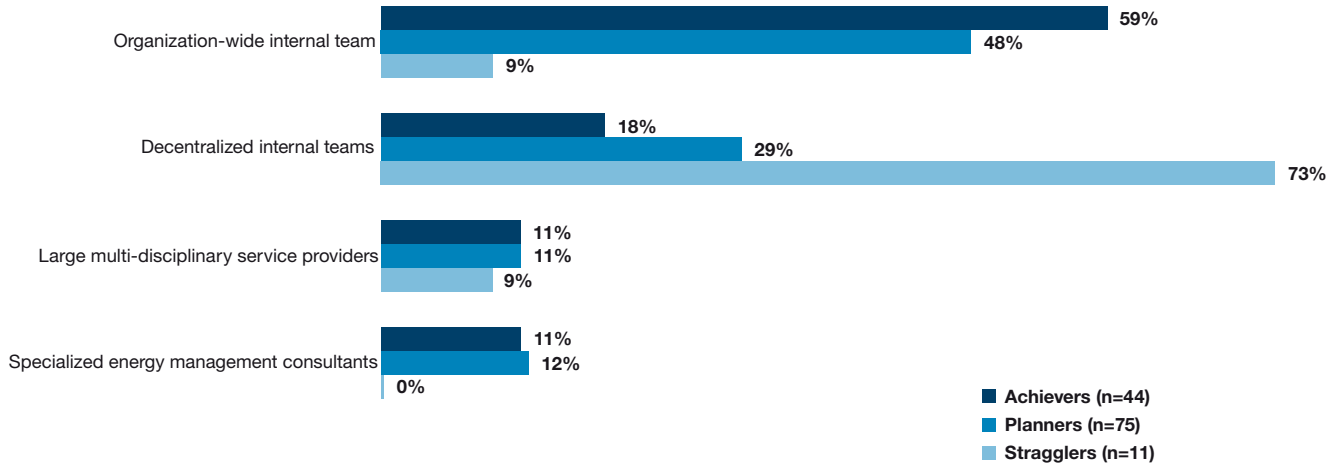


Figure 4: Primary project management structure

Dedicated resources

The survey suggested that commitment of specific financial resources could be a significant factor in the implementation of a successful sustainability program.

- 36 percent of Achievers and 37 percent of Planners reported that the *primary source of funding* for energy management projects was dedicated budgets specifically allocated for sustainability investments. The figure for Stragglers was nine percent.
- A large majority of Achievers (see Figure 5) expect capital budgets for energy management projects to increase over the next three to five years. A smaller proportion of Planners and only 36 percent of Stragglers are similarly optimistic.
- Current investment levels of Achievers and Planners compared to Stragglers (see Figure 12) suggest that dedicated budgets facilitate *increased access to capital.*

But what are the priorities for action?

Real estate and facility assets consume more than 70 percent of electricity[1] and more than 13 percent of potable water.[2] They are responsible for approximately 47 percent of carbon emissions[3] in the United States. Based on these statistics, there was little surprise that Achievers and Planners placed a high priority on sustainability within real estate and facilities.

When asked to rank the priority of energy and environmental performance, a large majority (85 percent) of all respondents reported that sustainability was a top-ten priority.

Within the Achievers, a majority (55 percent) reported that energy and environmental performance was a top-five priority. In contrast, 41 percent of Planners and only 18 percent of Stragglers reported the same (see Figure 6).

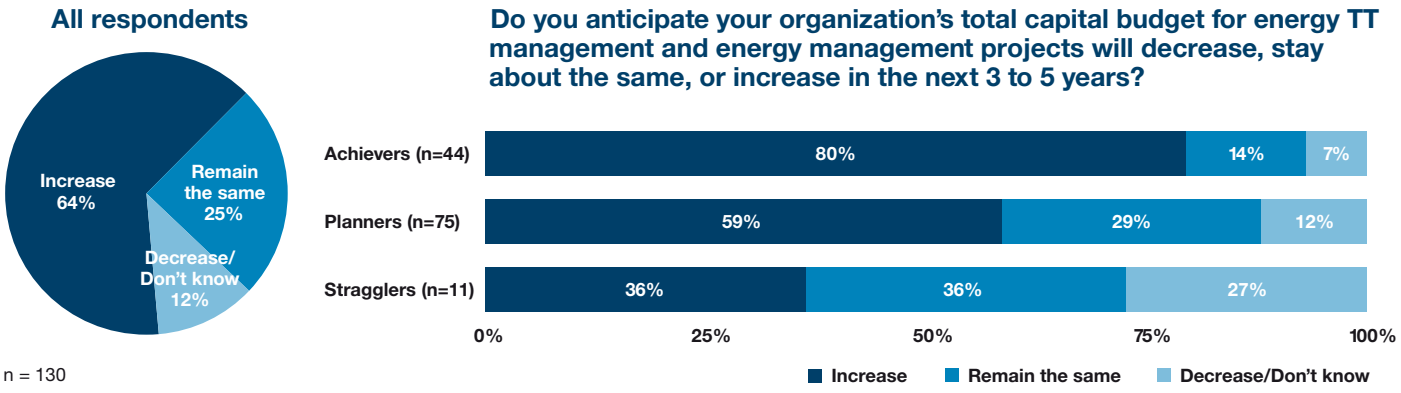


Figure 5: Capital budget forecasts over next 3 - 5 years

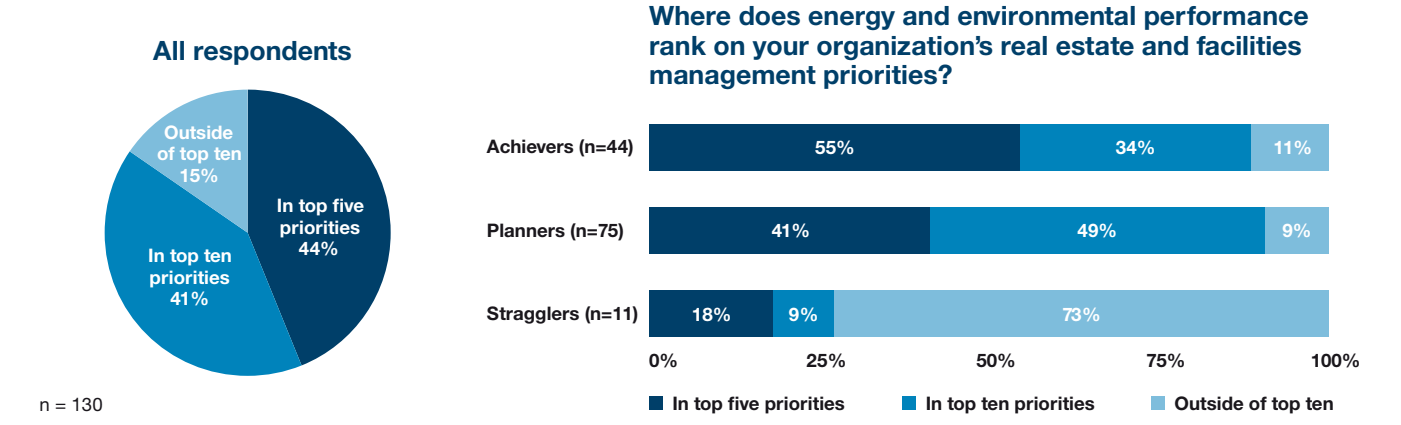


Figure 6: Sustainability rank as a real estate and facilities priority

Forget greenhouse gases—Achievers target energy efficiency

Energy efficiency, not supply chains or greenhouse gas emissions, is the top priority for organizations that achieve their sustainability goals.

Decisions about where to invest time and money for the highest return are at the heart of any sustainability program. Sustainability-focused professionals need to prioritize targets and produce detailed evidence of real and attainable dividends in terms of reduced energy and environmental impact and financial return.

Energy efficiency—the top priority

Achievers were especially focused on energy efficiency, and almost 70 percent of all respondents made it one of their top three priorities (see Figure 7). Despite constant attention from press, broadcasting media and campaigners, all groups of respondents gave a low priority to reduction of greenhouse gas emissions, while Achievers remained focused on improved sustainability within internal operations ahead of their supply chains.

- Among Achievers, energy efficiency was among the top three priorities of 75 percent of respondents—by far the most popular choice. For both Planners and Stragglers, the figure was 64 percent.
- Reducing operational waste, generally through material reduction, reuse or recycling, was the only other initiative selected as a top three priority by a majority of all respondents. This often demands little capital investment and can offer an excellent return on investment (ROI).
- Slightly more than one-third of Achievers indicated that improved resource management in procurement or supply chain was a top three priority.
- Other initiatives, including reducing greenhouse gas emissions, attracted little support.

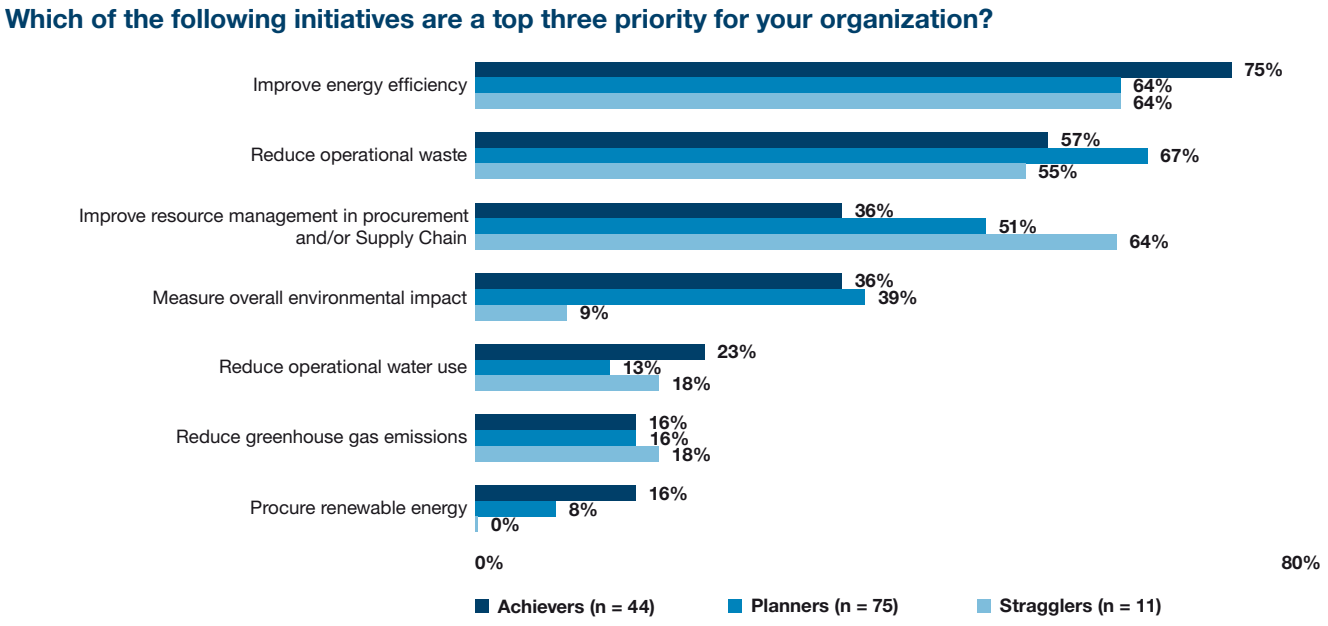


Figure 7: Top three sustainability initiatives

Energy efficiency within facilities—cost-effective improvements

Many organizations find that energy efficiency and waste reduction are the two initiatives that provide the best return on investment, particularly when natural resources are relatively cheap and the cost of carbon is virtually zero, as is the case today.

Investment in other projects such as reduced water use or carbon emissions may become more feasible if governments enact regulations to reduce carbon emissions and natural resource consumption increases prices significantly, or if research and development increases the ROI from renewable energy.

But energy efficiency projects, particularly those *within the organization's buildings and other facilities*, offer a cost-effective way to achieve significant, quick and measurable improvements.

The survey identified widespread agreement about the priority of facility energy efficiency: a large majority (78 percent) of all respondents indicated that their organization was currently investing in improved facility energy efficiency (see Figure 8), although there was a marked difference between Achievers (91 percent) and Stragglers (45 percent). There was even more agreement that this initiative offers an important way forward: almost all the respondents reported that their organization planned to make investments in facility energy efficiency by the end of this decade.

In addition, two other priorities commonly placed in the top three, improved equipment servicing and improved space utilization, directly relate to facility energy efficiency.

Which of the following energy and environmental management activities is your company currently investing in to support green initiatives?

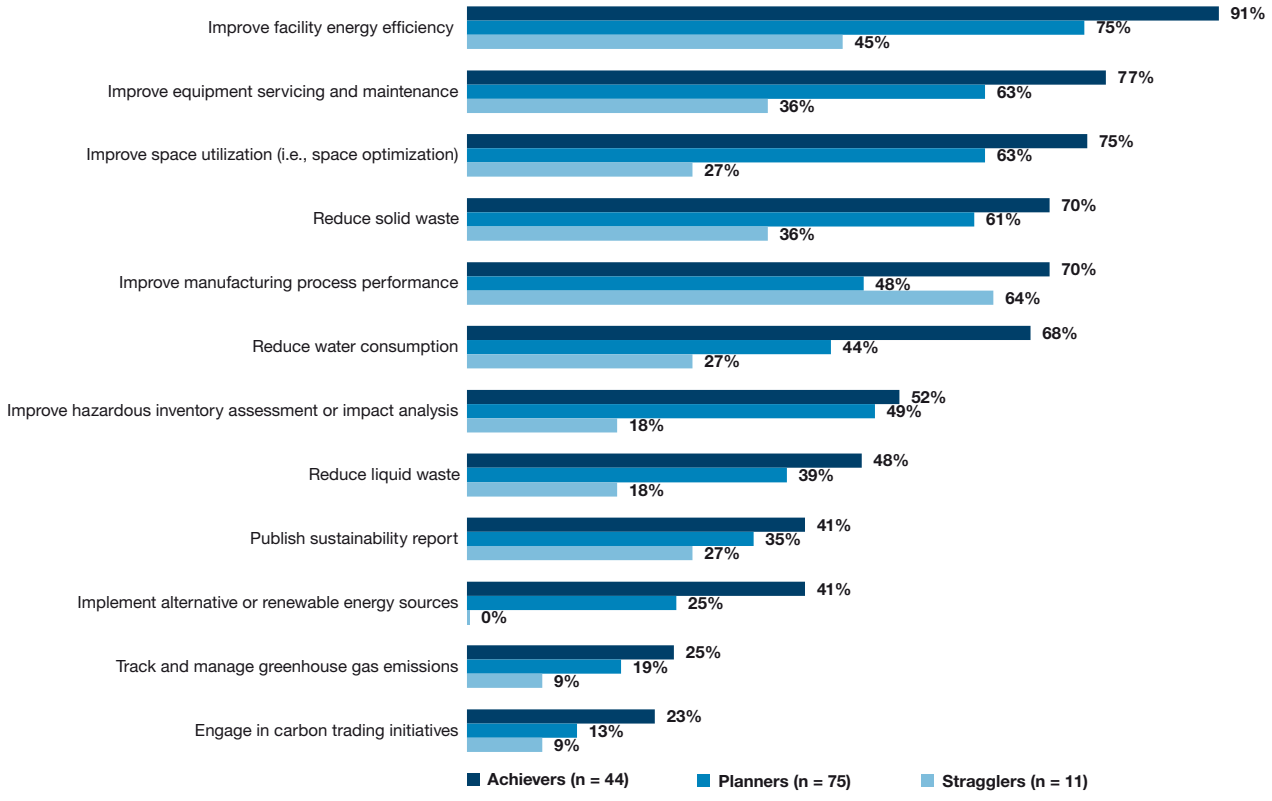


Figure 8: Current sustainability investments

Facility energy improvements—three key tactics

Achievers identified three key tactics from the many available to reduce energy use and improve environmental performance in facilities (see Figure 9):

1. Introduction of operational improvements
2. Investment in building retrofit projects
3. Implementation of space management programs.

Operational improvements

The U.S. Federal Energy Management Program lists several facility maintenance and operations tactics that can cut energy costs by 10 to 20 percent with minimal capital investment.[4] These may include proactive maintenance programs, retro-commissioning, and equipment metering to better track energy and resource use.

Most Achievers (73 percent) selected operational improvements to reduce maintenance downtime and cost as their key tactic.

Building retrofit projects

Building retrofit projects, unlike operational improvements, usually require capital investment. However, energy efficiency retrofits may reduce energy use by 20 to 60 percent.[5] These range from "low hanging fruit" projects such as insulation of facilities to full building retrofits that require large amounts of capital and extensive design work. Building retrofit investments to improve efficiency of existing assets were selected by a majority of Achievers (61 percent).

Improved space utilization

Space management programs usually require significant design and implementation coordination across multiple departments. They cut energy consumption and reduce real estate costs, and may also improve organizational productivity. Space management to improve space utilization was selected as a high-level tactic by a majority of Achievers (55 percent).

What high-level tactics are your organization pursuing to reduce energy use in facilities?

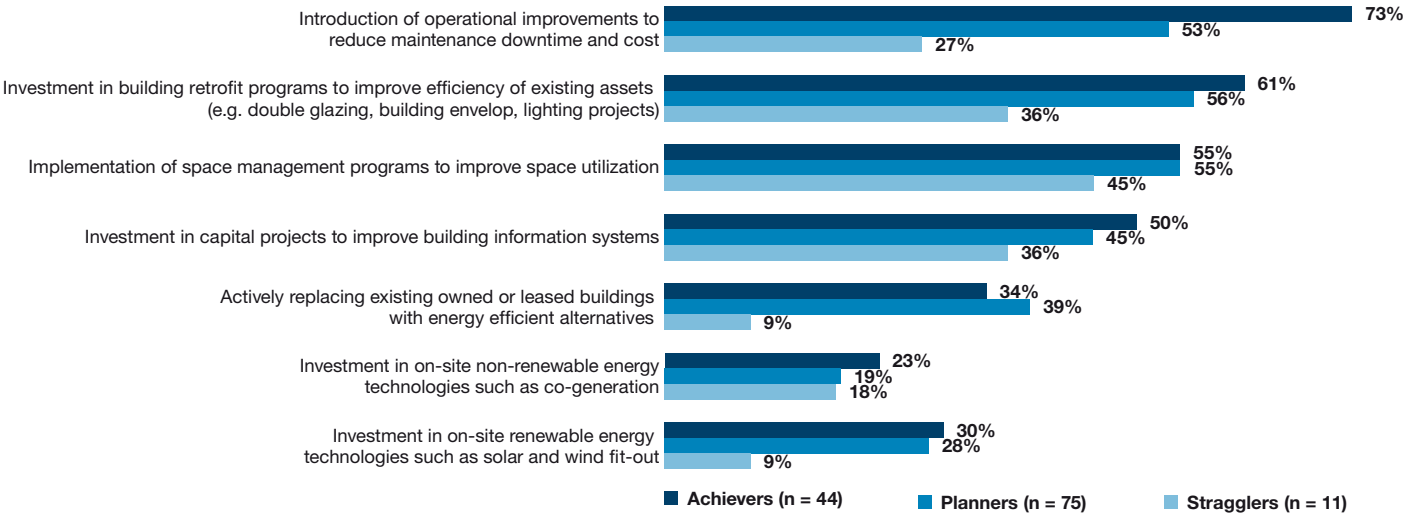


Figure 9: High-level tactics to reduce energy use in facilities

The importance of data gathering

Anyone setting out on a journey needs a map—not just to plan a route before departure, but also to ensure the right direction is maintained throughout. In the same way, organizations need evidence to plan a sustainability strategy, and evidence to make sure that it's working—and that there isn't a better way.

Collect energy and environmental data from facilities

Organizational success requires the availability of crucial information so that energy and environmental performance can be fully understood and resources prioritized. The collection and analysis of energy and environmental data to identify high-return investments provide a critical component of any sustainability program.

A significant majority of Achievers (81 percent) report that their organizations actively collect energy and environmental data from facilities (see Figure 10), with 36 percent collecting data across all buildings in the facilities portfolio.

Significantly, a large majority (64 percent) of Stragglers reported that their organization does not collect any energy and environmental data.

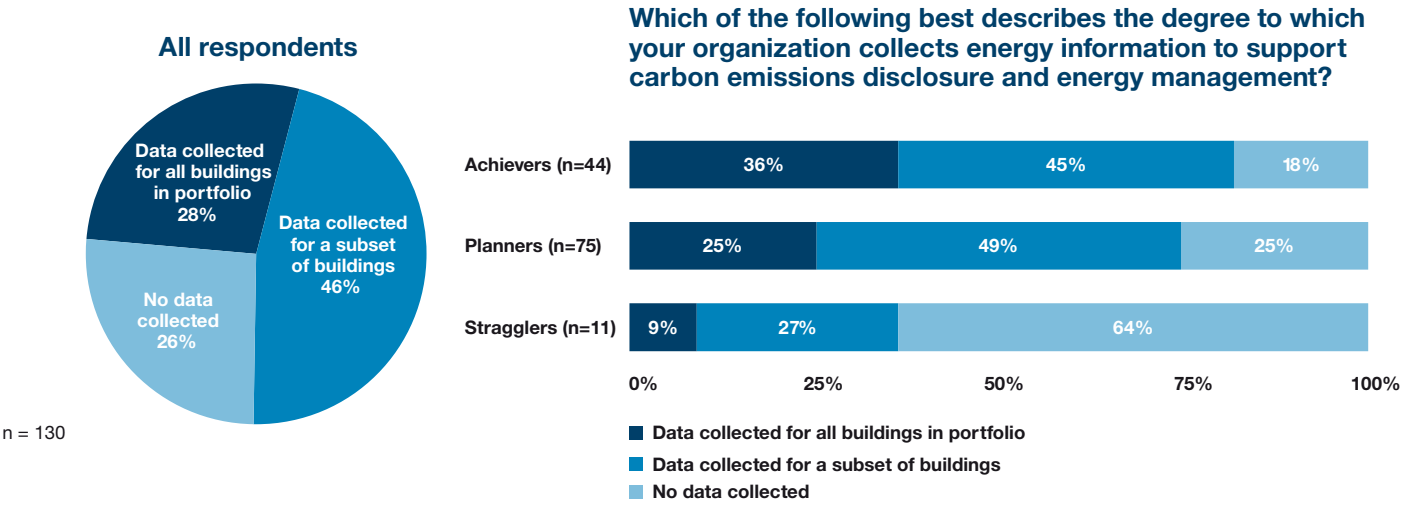


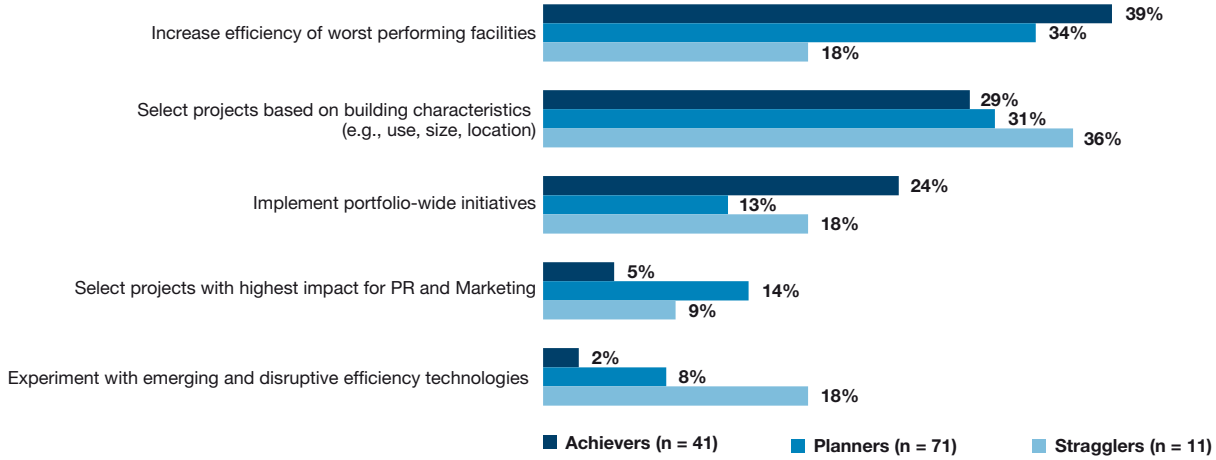
Figure 10: Scope of energy data collection

Setting priorities—spotlighting the worst performers

Organizations aiming to reduce energy use and environmental impacts need to prioritize their efforts through improved facility energy efficiency—which means they must decide which individual facilities are important to target for increased efficiency.

Achievers consider increased efficiency within worst-performing facilities the most important factor (39 percent) and avoid experimental technologies and Public Relations (PR) impact, whereas Stragglers are more likely (36 percent) to select projects based on building characteristics such as use, size or location (see Figure 11).

Which of the following does your organization consider most important when prioritizing energy and environmental efficiency projects within owned facilities?



Note

Note: This chart relates to buildings owned by the organization. Key differences in responses relating to leased buildings include a reduction in the numbers of Achievers (32 percent) and Planners (25 percent) investing in increasing efficiency in their worst performing facilities, and a large increase in the proportion of Stragglers (44 percent) allocating investment according to its PR or marketing impact.

Figure 11: Inputs for prioritizing sustainability projects

Quantitative analysis—the way to evaluate capital investment decisions

Once an organization selects facilities on which to focus capital and resources, they must decide which projects provide the best ROI—which projects offer the greatest financial and environmental return on invested capital.

The survey showed that more Achievers (59 percent) wanted to quantify the costs and benefits of particular sustainability projects than either Planners (41 percent) or Stragglers (18 percent) (see Figure 12).

When asked to select the two biggest challenges faced in the deployment of capital to reduce energy use and improve environmental performance, almost half (48 percent) of all respondents chose competition from other capital projects. This was followed closely by difficulties in the quantification of cost-benefit from sustainability investments (45 percent).

Only a small percentage of Achievers indicated that either a lack of widespread internal support (14 percent) or a lack of a specific individual or group promoting sustainable investment (11 percent) was a primary challenge in the allocation of capital. Stragglers were over twice as likely to select these two challenges.

Which of the following present the two largest challenges for your organization when deciding if and where to deploy capital to reduce energy use and improve environmental performance?

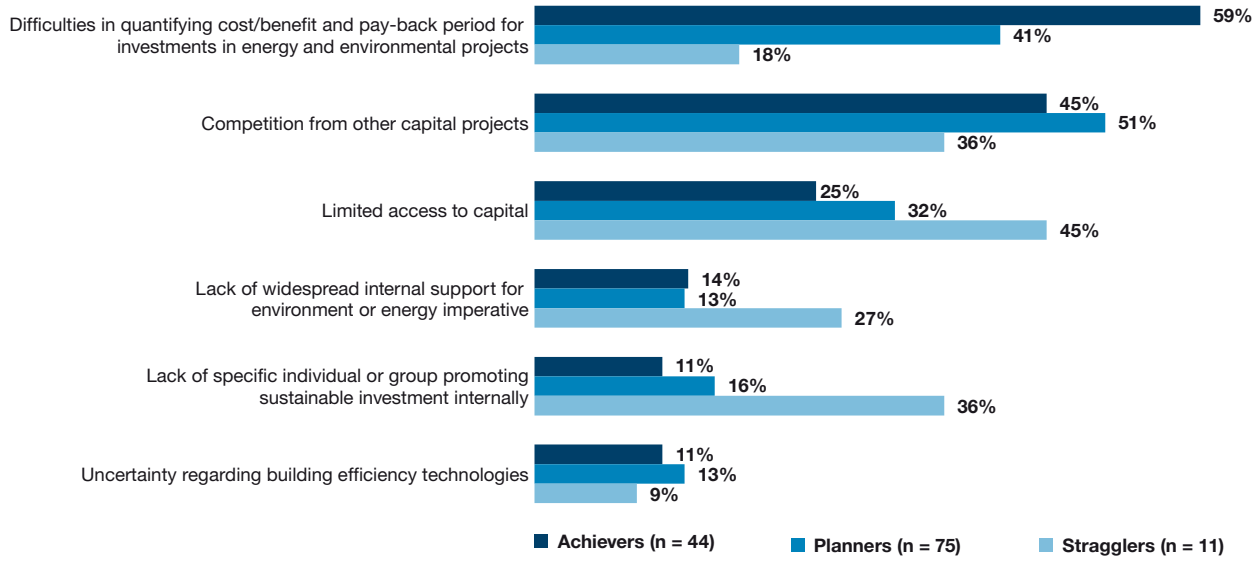


Figure 12: Largest challenges when allocating capital

The central role of technology

Increasingly, organizations implement technology solutions and enterprise-class solutions to streamline the measurement of energy and environmental performance, as well as the evaluation and implementation of energy and environmental projects.

Use enterprise-class systems to support sustainability initiatives

The use of enterprise-class systems to support sustainability initiatives is a significant common factor among Achievers. Specifically, project management and on-going operations and maintenance were selected by a majority (68 percent and 52 percent respectively) of Achievers as functions that currently use an enterprise-class system to simplify or automate controls, processes, and data collection required to meet sustainability goals (see Figure 13).

An enterprise-class system proves invaluable for organizations that need to allow multiple groups access to the same data, create alerts and workflows to manage processes, streamline data evaluation and reporting, and complete data quality audits. The survey shows that Achievers plan to increase investment in enterprise-class solutions over the *next 18 months*, most notably in project management, ongoing maintenance and project planning and evaluation—which deliver key capabilities to support the three high-level tactics described earlier.

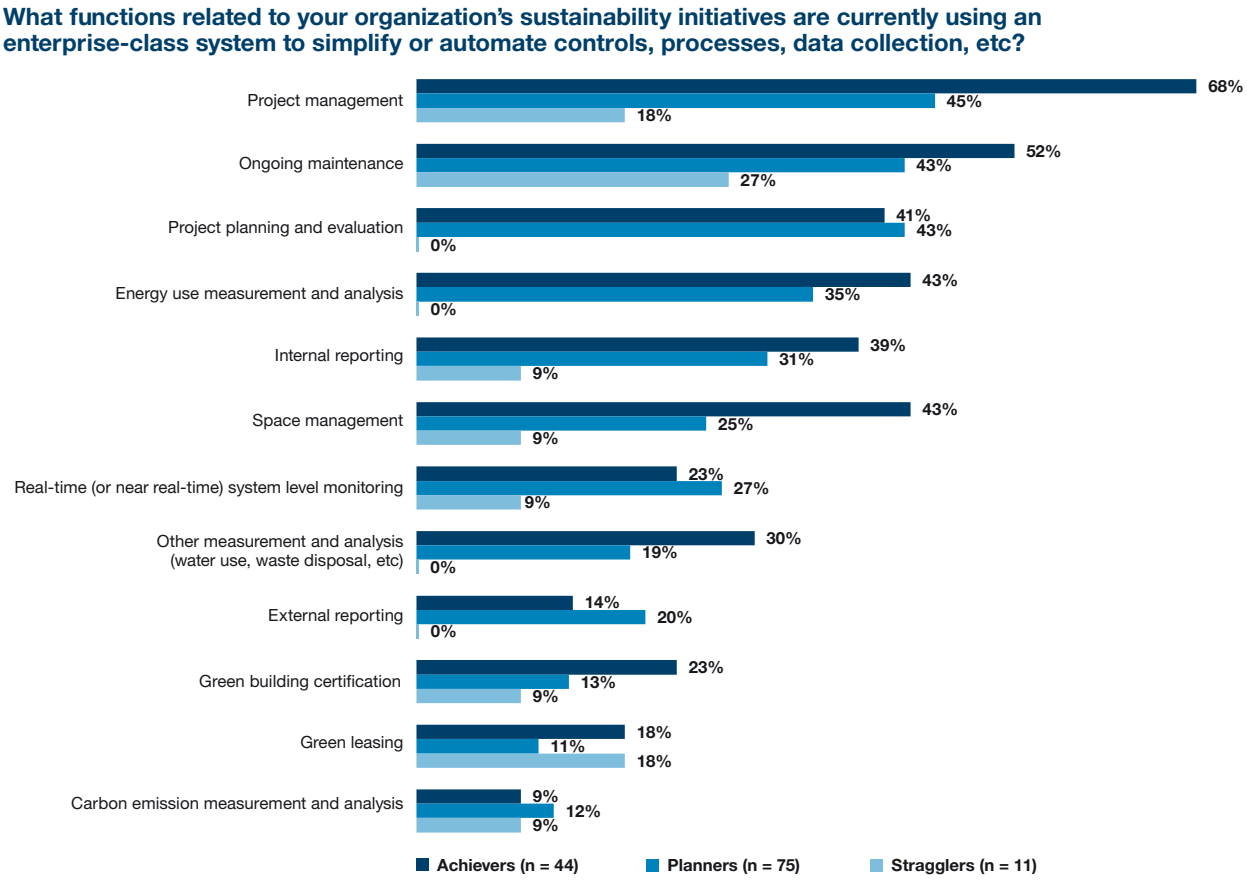


Figure 13: Sustainability functions supported by enterprise-class system

Technology investments—what's the bottom line?

When evaluating any technology solution, Achievers identified that the most important consideration is whether the proposed system delivers quantifiable value. Alignment with existing systems or specific functionality was a secondary issue.

That was the view of half of Achievers, whereas 73 percent of Stragglers reported that their organization did not have criteria to judge IT investments.

Conclusion

Ninety-two percent of organizations have established environmental sustainability policies and goals. Unfortunately, only a third has achieved them. As sustainability executives and professionals consider and implement their programs, they move along a maturity curve—one that is broken by a gap that TRIRIGA refers to as the "sustainability chasm". This chasm separates the Achievers who have successfully achieved their goals from a mainstream group of Planners and Stragglers who have yet to do so.

This report identifies the critical strategies, tactics and technologies employed by the Achievers, and provides a roadmap to success for Planners and Stragglers.

The Achievers typically implement three key strategies:

- Involve executive management in all stages of the strategy
- Establish sustainability as a top priority within real estate and facilities
- Target facility energy efficiency as the highest priority within sustainability programs, ahead of supply chain and carbon initiatives

Improved energy efficiency within facilities involves three key tactics:

- Operational improvements that reduce energy use by 10 - 20 percent with little or no capital investment
- Building retrofit projects to reduce energy use by 20 - 60 percent
- Space management programs which increase space utilization to cut energy and real estate costs.

The implementation of enterprise-class sustainability with key features to support these strategies and tactics provides crucial evidence for decision-making and process automation for efficient action. It accelerates the achievement of energy and environment goals through streamlined collection and aggregation of energy, waste and water data to flag poorly performing facilities; it simplifies quantitative analysis of environmental investments to identify high-return projects; and it streamlines the implementation of operational improvements, building retrofits and space optimization projects.

If you believe your organization could fundamentally reduce its energy use and environmental impact and generate solid financial returns while doing so, IBM would like to speak with you and determine how we can help. In a brief conversation, we can work out any possible next steps to help your organization achieve its energy and environmental goals. Together, we can review your goals and initiatives for the next 12 to 24 months and quickly assess if there may be a fit that would merit further discussion.

IBM and TRIRIGA

IBM closed on the acquisition of TRIRIGA, Inc. in April 2011. The move aims to accelerate IBM's smarter buildings initiatives by adding advanced intelligence that improves real estate performance, capital project management and the outcomes of sustainability initiatives. TRIRIGA will be integrated into IBM Tivoli Software and IBM Global Business Services.

For more information

To learn more about TRIRIGA, an IBM Company, please contact your IBM marketing representative or IBM Business Partner, or visit the following website: **ibm.com**/software/tivoli/welcome/tririga

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[1] Energy Information Administration

[2] U.S. Geological Survey

[3] U.S. Energy Information Administration (2009)

[4] "Operations & Maintenance Best Practices: A Guide to Achieving Operational Efficiency," Federal Energy Management Program, August 2010.

[5] "Energy Efficiency Retrofits for Commercial and Public Buildings," Pike Research, July 2010.

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