Crossing the sustainability chasm

Strategies and tactics to achieve sustainability goals

IBM

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Executive summary

A 2010 study by Gartner, in collaboration with TRIRIGA, Inc. (acquired by IBM in April 2011), surveyed 130 professionals responsible for the planning and implementation of sustainability initiatives at large corporations and public sector organizations. IBM 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 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 our 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 divided into 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 our research, we 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 reach 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 with the expectation that these budgets would 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.

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 included 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.
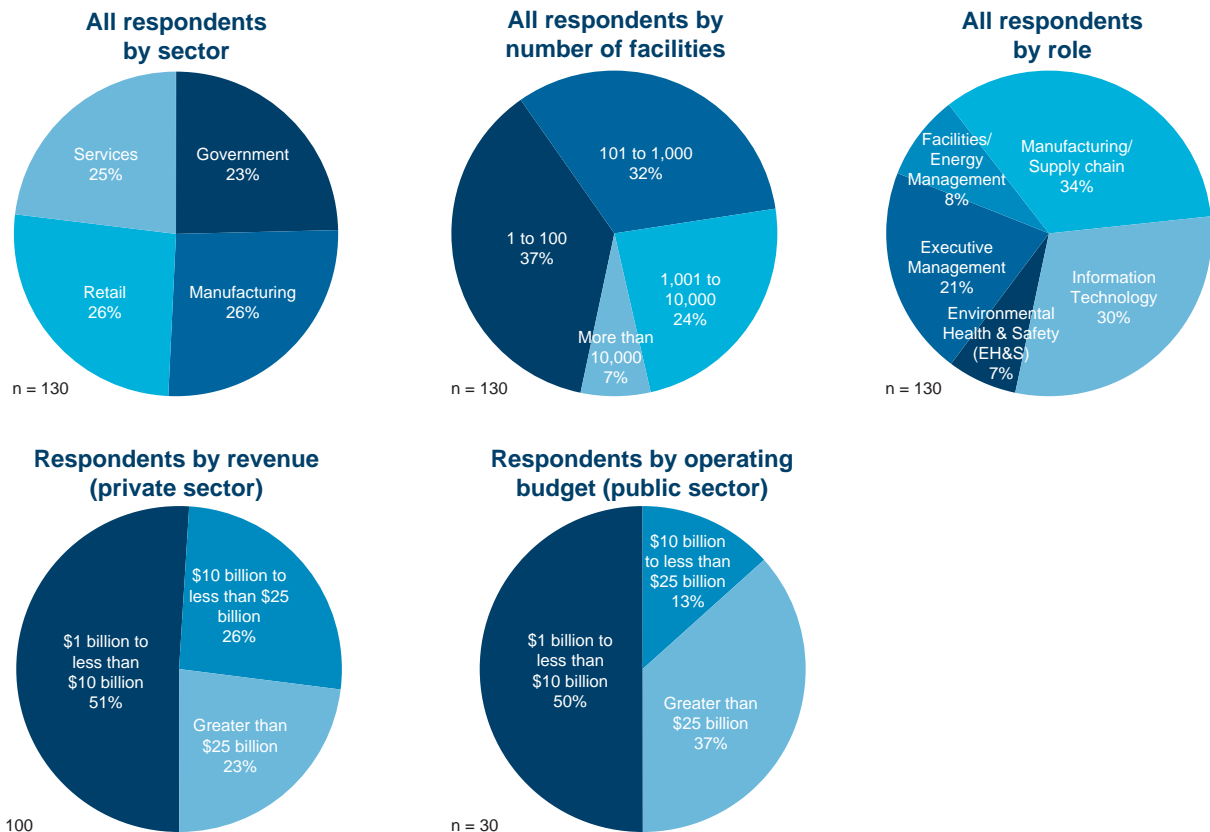
**All respondents
by sector**

Services
25%

Government
23%

Retail
26%

Manufacturing
26%

n = 130

**All respondents by
number of facilities**

101 to 1,000
32%

1 to 100
37%

1,001 to
10,000
24%

More than
10,000
7%

n = 130

**All respondents
by role**

Facilities/
Energy
Management
8%

Manufacturing/
Supply chain
34%

Executive
Management
21%

Information
Technology
30%

Environmental
Health & Safety
(EH&S)
7%

n = 130

**Respondents by revenue
(private sector)**

$10 billion to
less than $25
billion
26%

$1 billion to
less than
$10 billion
51%

Greater than
$25 billion
23%

n = 100

**Respondents by operating
budget (public sector)**

$10 billion
to less than
$25 billion
13%

$1 billion to
less than
$10 billion
50%

Greater than
$25 billion
37%

n = 30

Figure 1: Respondent demographics

A focus on achievement

The IBM analysis of the survey data uncovered several key characteristics that exist within organizations that have success-fully achieved their energy and environmental 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

Which of the following best describes the stage your organization is at in implementing its energy and environmental management strategy?
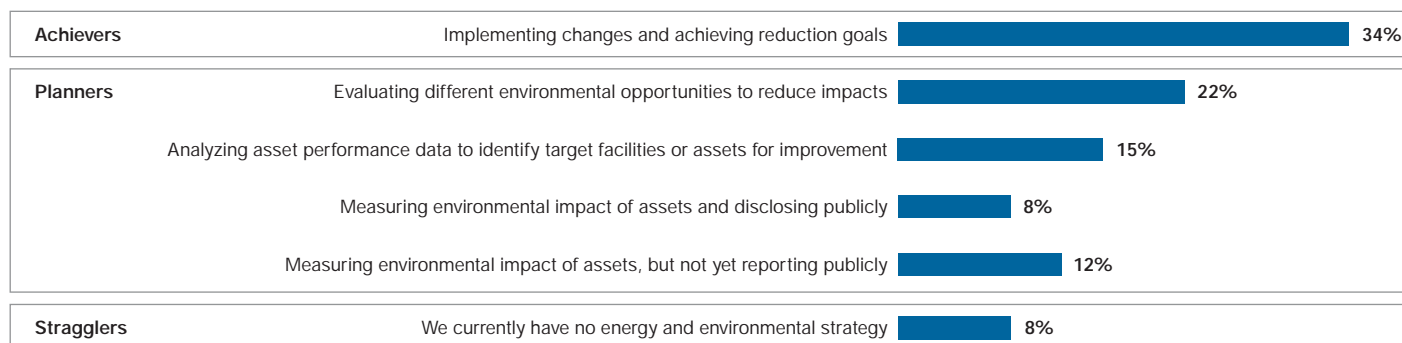
Achievers	Implementing changes and achieving reduction goals	34%
Planners	Evaluating different environmental opportunities to reduce impacts	22%
	Analyzing asset performance data to identify target facilities or assets for improvement	15%
	Measuring environmental impact of assets and disclosing publicly	8%
	Measuring environmental impact of assets, but not yet reporting publicly	12%
Stragglers	We currently have no energy and environmental strategy	8%

Figure 2: Breakdown of respondents by maturity group and stage

management projects and achieved reduction goals. Achievers accounted for 34 percent of all survey respondents (see Figure 2).

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).

For large organizations, 66 percent have yet to implement projects and achieve sustainability goals (see Figure 3).
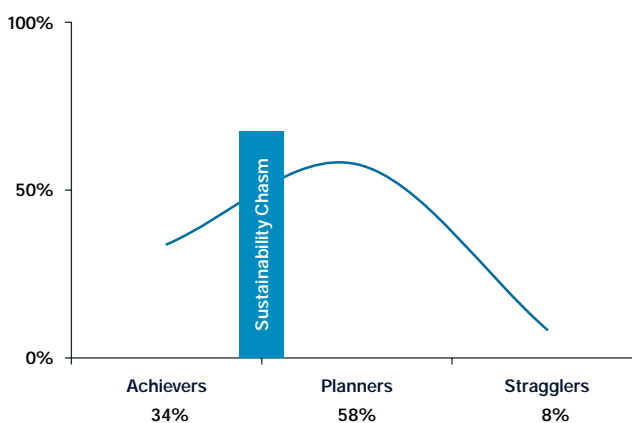
Respondents by maturity

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 analysis found that organizations were significantly more likely to achieve their objectives when senior executives were involved in the creation and management of sustainability programs, especially if the executives are partially rewarded on the achievement of these goals.

- While more than 40 percent of Achievers reported that executive management was involved in the development of their security strategy, fewer than 20 percent of Planners or Stragglers said that was the case.
- More than 40 percent of Achievers and Planners, compared with 18 percent of Stragglers, indicated that executive management was involved in evaluating sustainability projects.

- A majority of both Achievers and Planners (55 and 56 percent, respectively) stated 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.

- Among Achievers, 60 percent used a central internal team as the primary management structure for energy and environmental management projects, compared to just 9 percent of Stragglers.
- Meanwhile, 73 percent of Stragglers used 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?
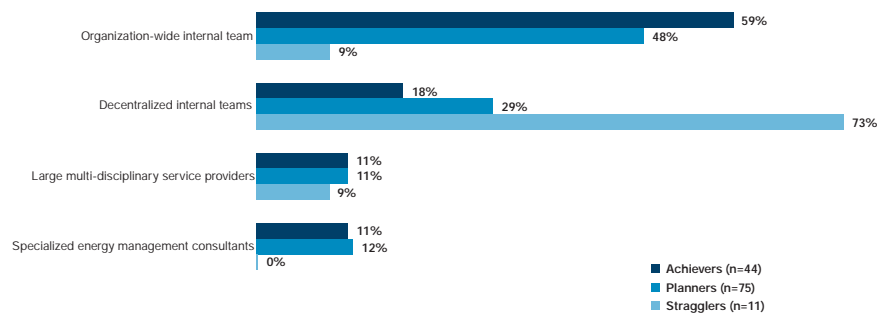
Organization-wide internal team: 59% / 48% / 9%
Decentralized internal teams: 18% / 29% / 73%
Large multi-disciplinary service providers: 11% / 11% / 9%
Specialized energy management consultants: 11% / 12% / 0%

■ Achievers (n=44)
■ Planners (n=75)
■ Stragglers (n=11)

Figure 4: Primary project management structure

Dedicated resources

According to the survey, committing specific financial resources was a significant factor in the implementation of a successful sustainability program.

For Achievers and Planners, 36 percent and 37 percent (respectively) reported that the primary source of funding for energy management projects was dedicated budgets specifically allocated for sustainability investments. The figure for Stragglers was 9 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 help increase access to capital.

But what are the priorities for action?

According to the US Energy Information Administration, buildings account for a staggering 49 percent of total energy consumption, of which 76 percent is consumed by building operations1—and more than 13 percent is consumed by potable water.2 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 their priorities of energy and environmental performance, 85 percent of all respondents indicated that sustainability was a top-ten priority.

Within the Achievers, 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).
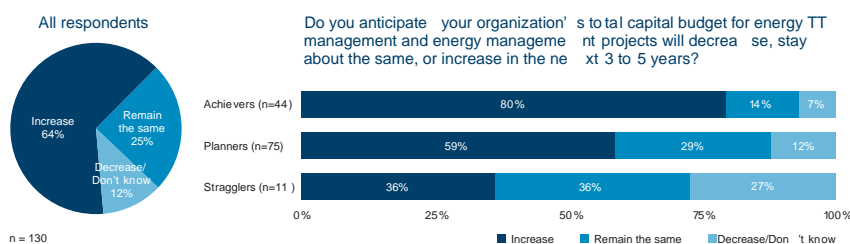

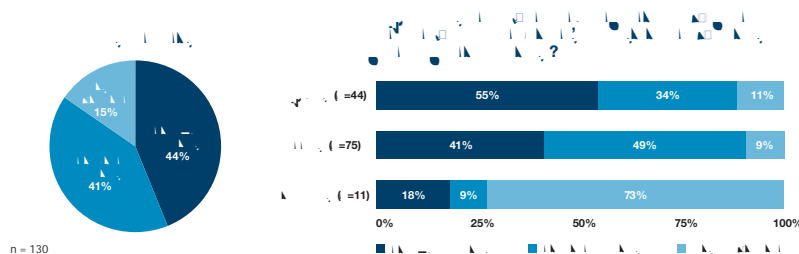Figure 5 Capital budget forecasts over next 3 - 5 years

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.
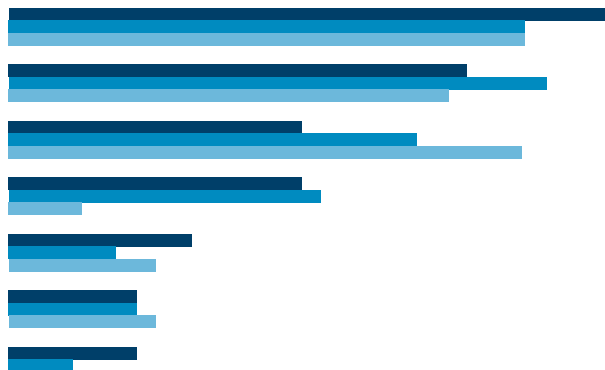
## Energy efficiency within facilities—Cost-effective improvements

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.

91%
75%
45%

77%
63%
36%

75%
63%
27%

70%
61%
36%

70%
48%
64%

68%
44%
27%

52%
49%
18%
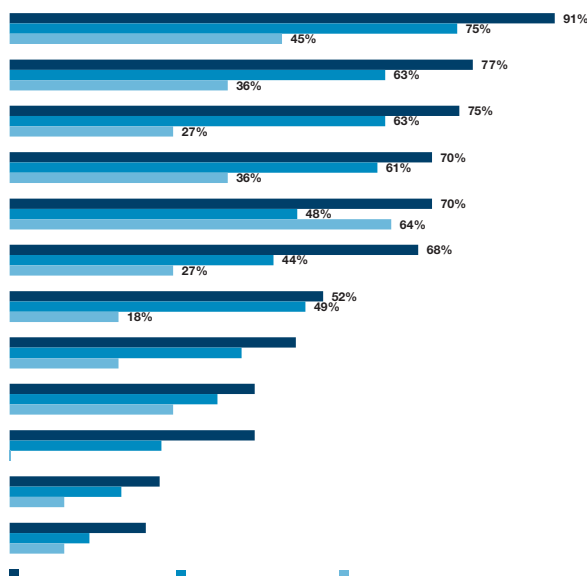
Facility energy improvements—Three key tactics

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.[3] These may include proactive maintenance programs, retrocommissioning 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.[4] 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).
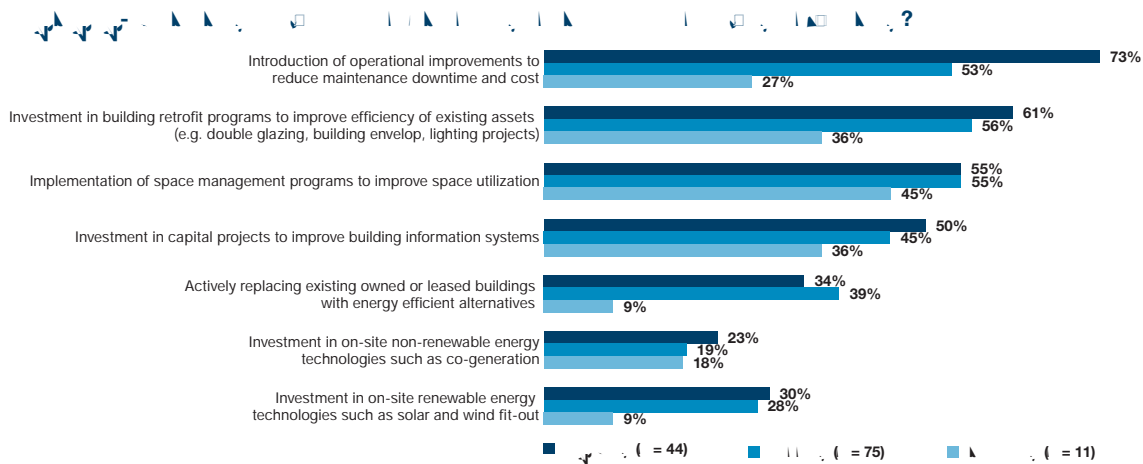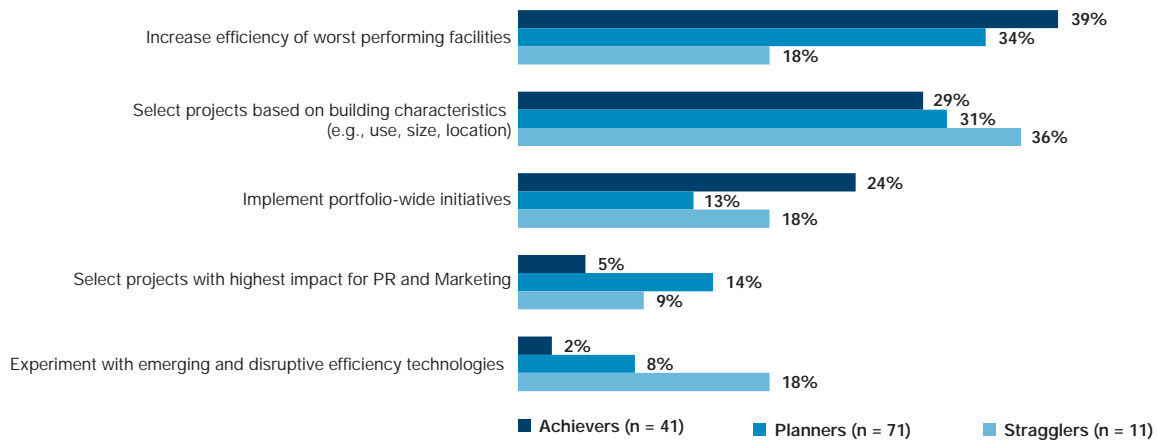

Figure 9: High-level tactics to reduce energy use in facilities

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?

	Achievers (n = 41)	Planners (n = 71)	Stragglers (n = 11)
Increase efficiency of worst performing facilities	39%	34%	18%
Select projects based on building characteristics (e.g., use, size, location)	29%	31%	36%
Implement portfolio-wide initiatives	24%	13%	18%
Select projects with highest impact for PR and Marketing	5%	14%	9%
Experiment with emerging and disruptive efficiency technologies	2%	8%	18%

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

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

The central role of technology

Increasingly, organizations implement technology 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.

Using enterprise-class systems to support sustainability initiatives

The use of enterprise-class systems to support sustainability initiatives is a significant common factor among Achievers. 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 found 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 help deliver key capabilities to support the three high-level tactics described earlier.

What functions related to your organization's sustainability initiatives are currently using an enterprise-class system to simplify or automate controls, processes, data collection, etc?
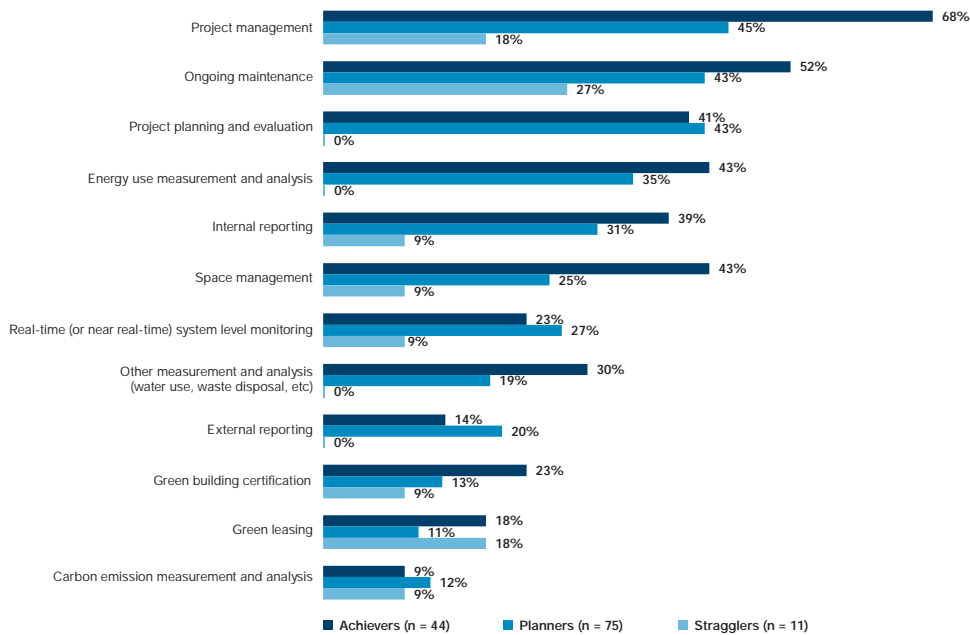
Function	Achievers (n = 44)	Planners (n = 75)	Stragglers (n = 11)
Project management	68%	45%	18%
Ongoing maintenance	52%	43%	27%
Project planning and evaluation	41%	43%	0%
Energy use measurement and analysis	43%	35%	0%
Internal reporting	39%	31%	9%
Space management	43%	25%	9%
Real-time (or near real-time) system level monitoring	23%	27%	9%
Other measurement and analysis (water use, waste disposal, etc)	30%	19%	0%
External reporting	14%	20%	0%
Green building certification	23%	13%	9%
Green leasing	18%	11%	18%
Carbon emission measurement and analysis	9%	12%	9%

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.

For more information

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[1] Architecture 2030, "Problem: The Building Sector," 2012. Available from http://architecture2030.org/the_problem/buildings_problem_why; Internet. Accessed 20 April 2012.

[2] U.S. Green Building Council, "Building Impacts: Why Build Green?," 2009.

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

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

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