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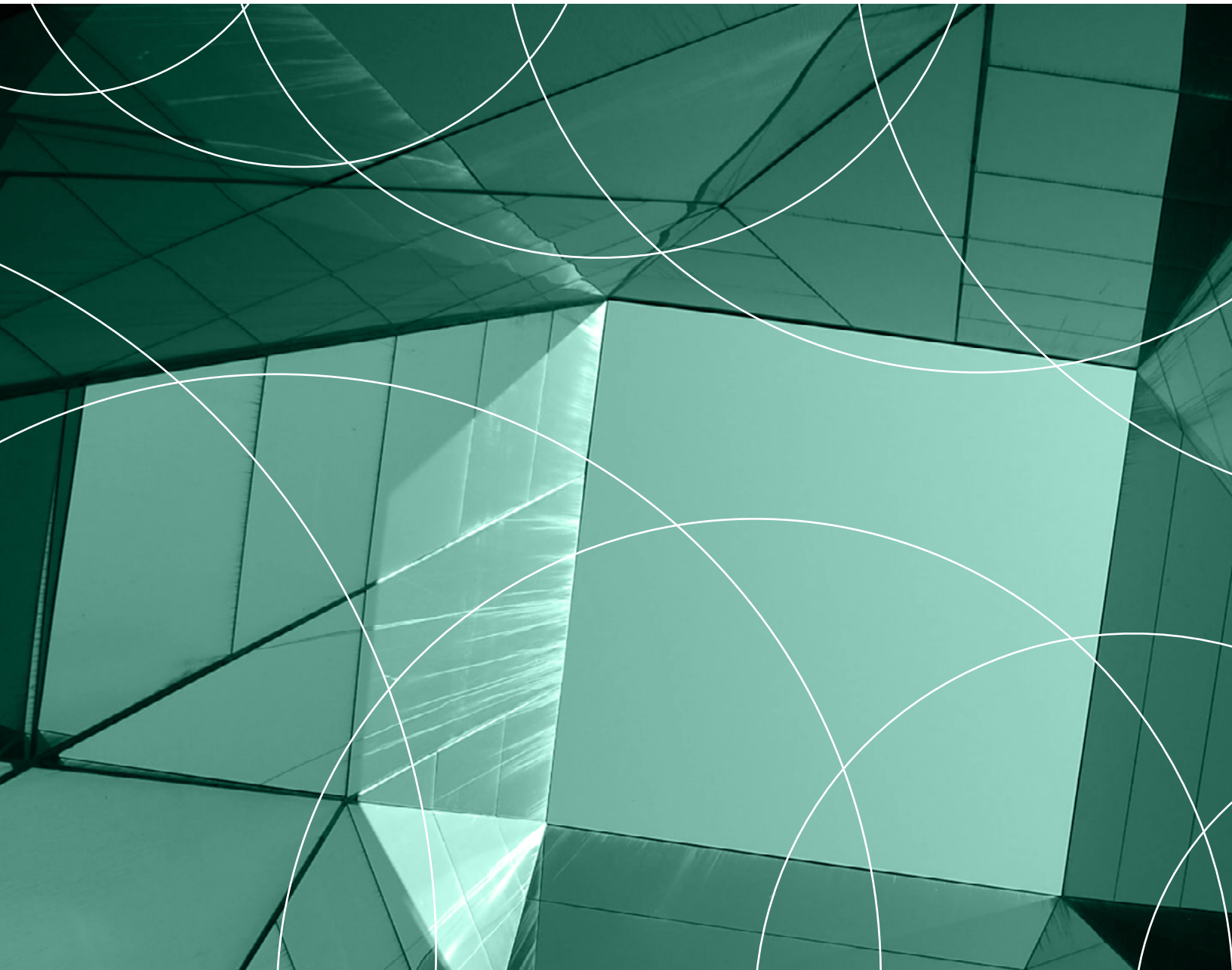
The Race To Zero Carbon Requires Smart Buildings

Technical And Strategic Partners Are Needed To Fill Integration And Expertise Gaps

A FORRESTER CONSULTING THOUGHT LEADERSHIP PAPER COMMISSIONED BY JOHNSON CONTROLS, NOVEMBER 2023

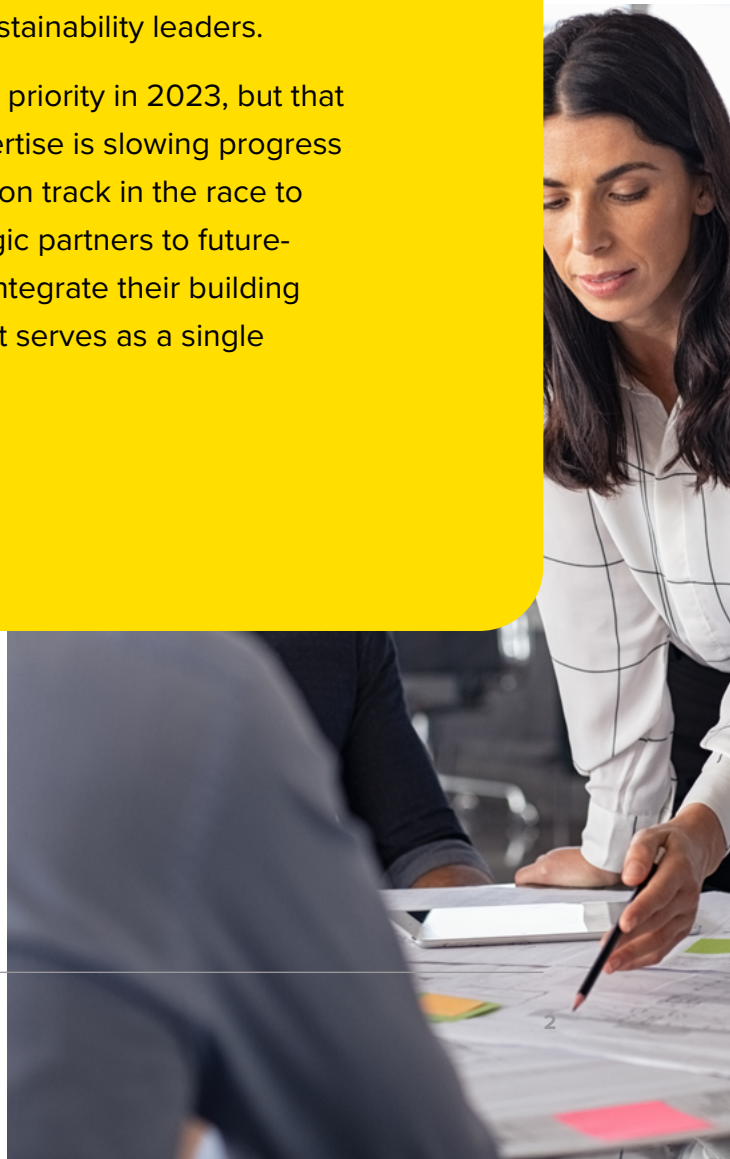


Executive Summary

Building operations consume more than one-third of global energy consumption and constitute nearly 40% of global energy-related emissions.[1] Zero-carbon buildings play an outsized role in the race to net-zero emissions and the energy transition. Technology plays a crucial role in building decarbonization. Forrester estimates cumulative spend just on heating and cooling our environments will total $24 trillion by 2050.[2] But critical challenges abound. This study explores the opportunities and challenges in digital transformation and sustainability initiatives within the buildings sector.

In August 2023, Johnson Controls commissioned Forrester Consulting to evaluate the state of smart buildings. Forrester conducted an online survey with 3,445 leaders responsible for smart building strategy at their organizations. All leaders were asked high-level smart buildings strategy questions and then more granular questions based on their roles. Leaders represented organizations in 18 industries and 25 countries. For this spotlight, Forrester focused on a subset of 1,537 sustainability leaders.

We found that sustainability remains a top business priority in 2023, but that a lack of systems/data integration and internal expertise is slowing progress toward meeting carbon-reduction goals. To remain on track in the race to decarbonization, leaders seek technical and strategic partners to future-proof their organizations' sustainability strategies; integrate their building systems; and provide one, easy-to-use platform that serves as a single source of truth and action.



Key Findings

The urgency to address sustainability continues to accelerate. Sustainability was a top business priority in 2021 and remains so in 2023. Cross-functional leaders are focused on sustainably improving their operations. While two-thirds of respondents say their organization is on track to meet its sustainability goals, another one-third realize their organization needs to accelerate its sustainability initiatives to meet its building carbon emissions reduction goals.

Only 10% of sustainability leaders say their buildings systems and equipment are fully integrated, and it's costing them time, people, and money. Full integration of all relevant systems is necessary to unearth accurate, complete insights to optimize building systems and track/improve progress against sustainability goals. Lack of integration is causing decreased efficiencies (67%), decreased customer loyalty (62%), and increased regulatory penalties (59%).

Technical and strategic partners are critical to fill expertise gaps. Seventy-three percent of leaders say their organization lacks the technical expertise to optimize building systems, and 40% note their organization lacks internal skills to measure environmental impact. While one-third note their organization would be able to keep its sustainability goals on track if faced with a budget cut, another two-thirds say their organization would need help maintaining resiliency of its sustainability strategies.

A smart buildings platform provides complete sustainability insights. Having one platform that's fully integrated and easy to use can help create a single source of truth and action. Leaders seek a solution that provides one digital platform for all sites and use cases (77%), is easy to use for cross-departmental teams (67%), and is integrated into all building systems (70%).

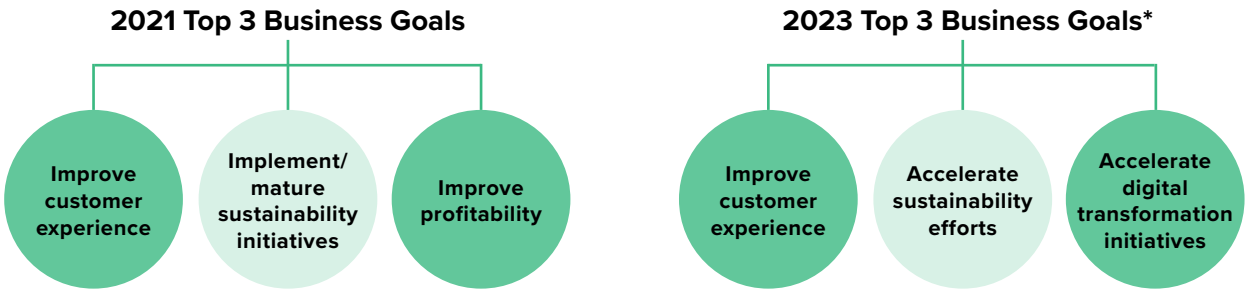
The Urgency To Address Sustainability Continues To Accelerate

2023 was marked by climate chaos. In September alone, 10 different countries and territories experienced severe flooding in just 12 days, smoke from wildfires impacted huge swaths of Europe and the US, and deadly heat waves caused labor disruptions across the globe. New and emerging regulations have correspondingly geared up globally, and consumers, investors, entrepreneurs, and governments are responding with action and immense investment. There is significant business opportunity for organizations to take part in what Forrester calls the green market revolution.[3] In surveying 1,537 sustainability leaders, we found that:

- **Sustainability remains a top business goal.** When comparing results from a 2021 study commissioned by Johnson Controls, sustainability remains a top business priority (see Figure 1).[4] This indicates that despite a more volatile economic and political climate globally, there is urgency to continue accelerating sustainability efforts. This is driven both by regulatory pressures and efficiencies already realized from those sustainability investments. In addition, there are other leading indicators that show organizations are taking sustainability more seriously (see Figure 1). For example, Forrester's research shows a growth in named sustainability leaders among Fortune 200 organizations, with 58% of organizations having a named sustainability leader in 2021 increasing to 61% in 2022.[5]

FIGURE 1

Top Business Goals In 2021 Vs. 2023

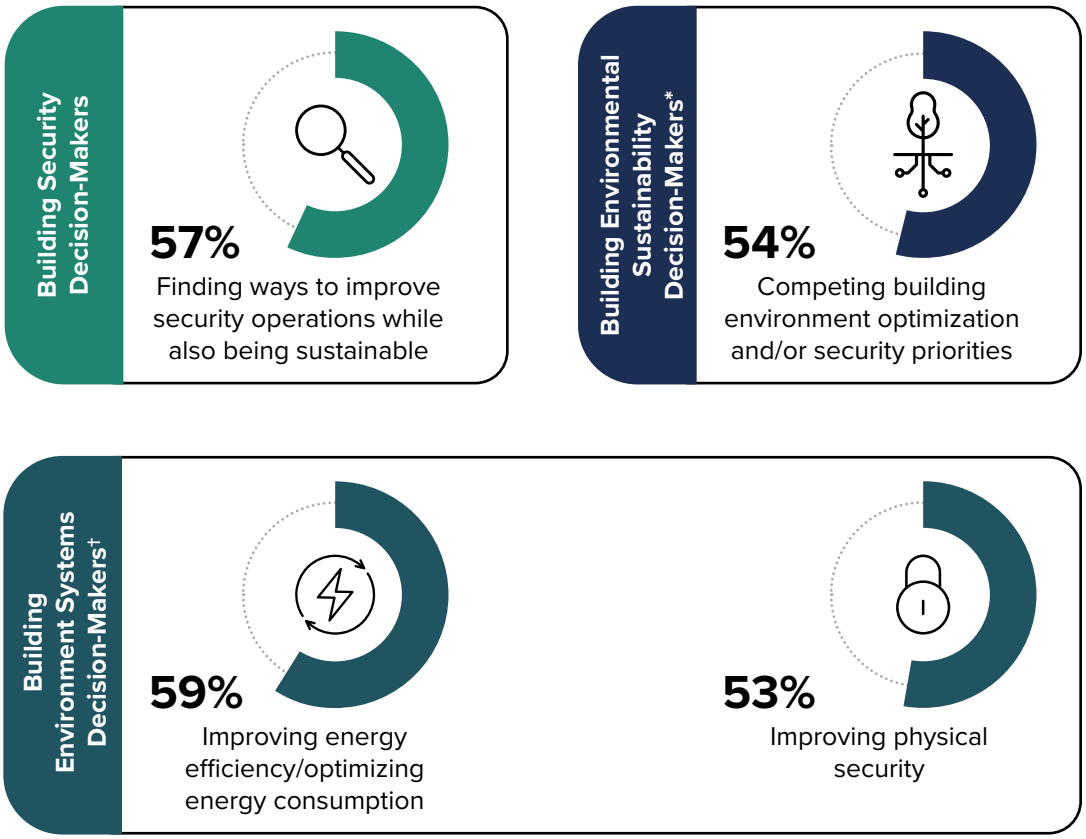


Base: 2,348 sustainability decision-makers at global enterprises prioritizing corporate sustainability
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, September 2021
*Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
*Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Sustainability is a cross-functional priority.** When comparing findings from security, sustainability, and building environment systems decision-makers, we found they are all focused on improving efficiency in their organizations' operations and doing so sustainably. For example, a top priority for security decision-makers is improving security operations while also being sustainable, and those responsible for building environmental systems are focused on improving efficiencies, including managing energy spending (see Figure 2).

FIGURE 2

Building Decision-Makers Have Overlapping Priorities

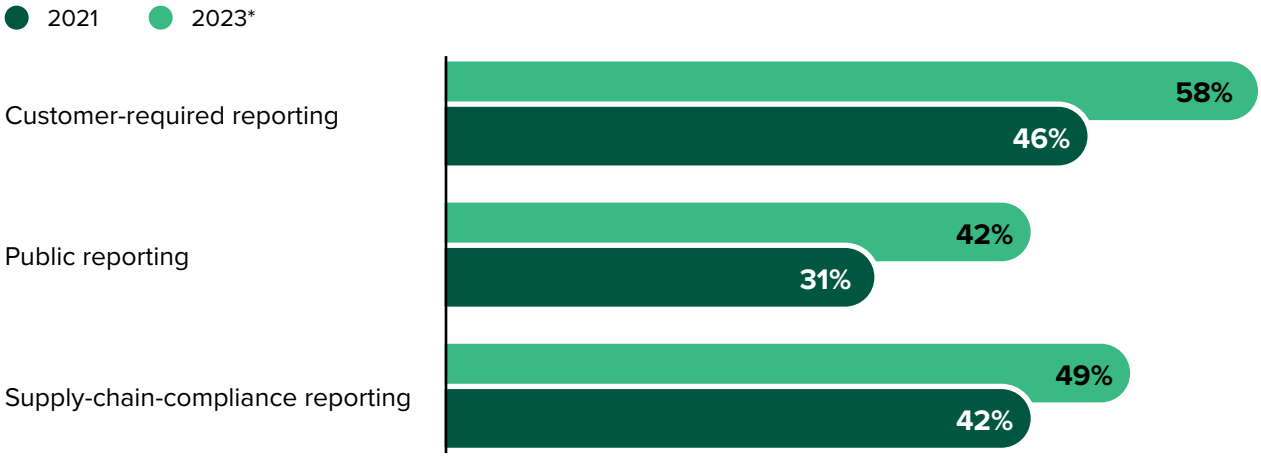


Base: 1,175 smart building decision-makers at the director level or higher for secure buildings at global enterprises
*Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
†Base: 1,548 smart building decision-makers at the director level or higher for building environment systems at global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Customers, employees, and partners demand progress and transparency in reporting.** We found that customer-required reporting, public reporting, and supply-chain-compliance reporting are more common in 2023 vs. in 2021. Customers, employees, and partners want to see progress made towards achieving identified sustainability goals (see Figure 3). The EU's Corporate Sustainability Reporting Directive (CSRD) will be in effect by 2024, and other reporting regulations have been passed in North America that require more transparency, consistency, relevancy, and accessibility from companies in their public reporting.

FIGURE 3

Types Of Environmental Sustainability Reporting Used/Planning To Use

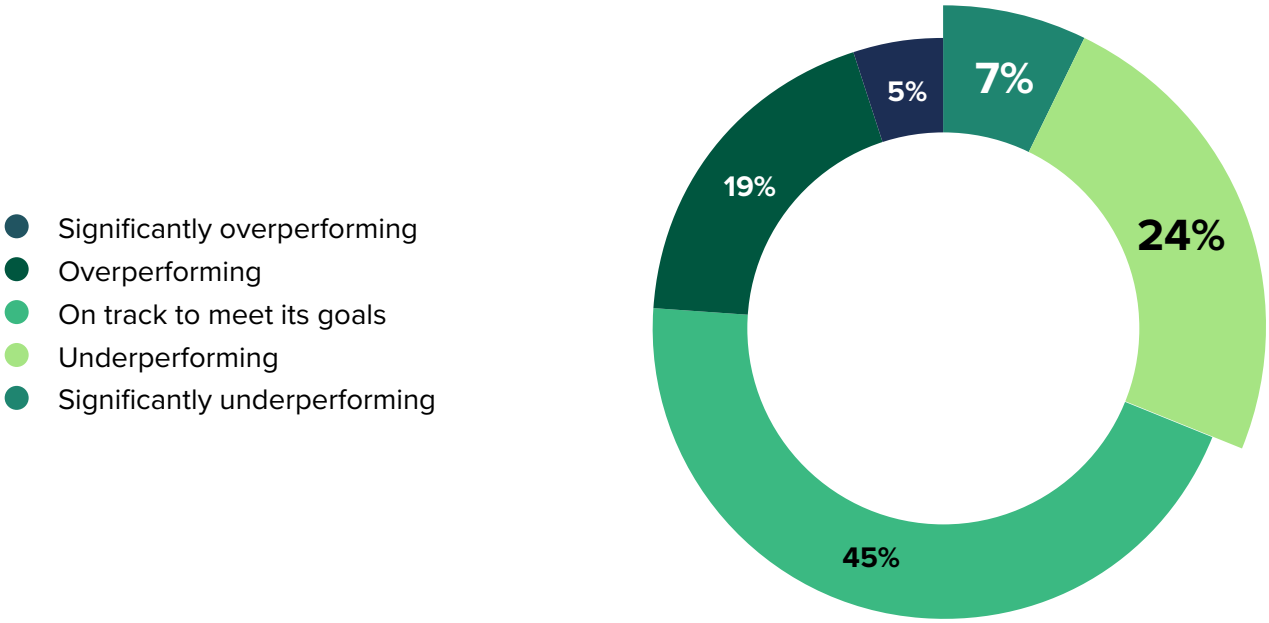


Base: 1,029 sustainability decision-makers at global enterprises prioritizing corporate sustainability
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, September 2021
*Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
*Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **While two-thirds of leaders are on track to meet their carbon-reduction goals, another one-third realize they must accelerate sustainability efforts to stay on track.** In the 2021 survey, 55% of leaders said their organization had set a goal of getting above a 75% reduction in building carbon emissions by 2030. In the 2023 survey, 64% of leaders report the same. Sixty-seven percent of leaders say their organization is on track to meet or exceed these carbon reduction goals, while 33% worry their organization is underperforming towards meeting these goals (see Figure 4).

FIGURE 4

Performance Toward Meeting 2030 Carbon Emissions Reduction Goal



Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Siloed Data And A Lack Of Operational Integration Threaten To Derail Progress Toward Sustainability Goals

Sustainability permeates every part of the business and leads the way as a top organizational goal. Buildings represent the physical footprint of many organizations, and they provide a significant opportunity for organizations to reduce carbon emissions. Every connected system, sensor, machine, or piece of machinery can capture and leverage information to help sustainability leaders optimize building environments and operations, as well as help them achieve their strategic goals. We found that measurement and reporting is currently limited due to a lack of systems and data integration, which threatens to derail the progress organizations have made towards sustainability goals.

- **Siloed data and strategies are causing inefficiencies and discrepancies in reporting.** Although many departments are focused on improving the sustainability of their operations to help their companies achieve larger goals, it's clear there's a lack of collaboration and standardization of reporting. For example, although sustainably improving operations is a top priority for 57% of security leaders, only 26% even collaborate with sustainability teams today. There's also a discrepancy in the decarbonization goals reported by sustainability teams versus other departments and executives. While 49% of leaders with a sustainability title say their organization has a carbon reduction goal of 75% or more across its portfolio of buildings, 80% of IT leaders and 67% of CEOs report the same (see Figure 5). These significant differences indicate there is a lack of a single source of truth for many organizations when it comes to visibility of this high-level sustainability goal, let alone more granular metrics.
- **Most organizations can only measure and report on carbon emissions once a year or quarter, which limits incremental progress.** The ability to measure carbon emissions in near-real time can be a powerful way to identify and create the most accurate optimization recommendations for carbon emissions reductions in building systems. However, our survey results show that very few organizations now have the capability to

implement near-real-timereporting today. Once-a-year or once-a-quarter carbon reporting is much more common, with 53% of organizations measuring and reporting on carbon emissions at these intervals (see Figure 6).

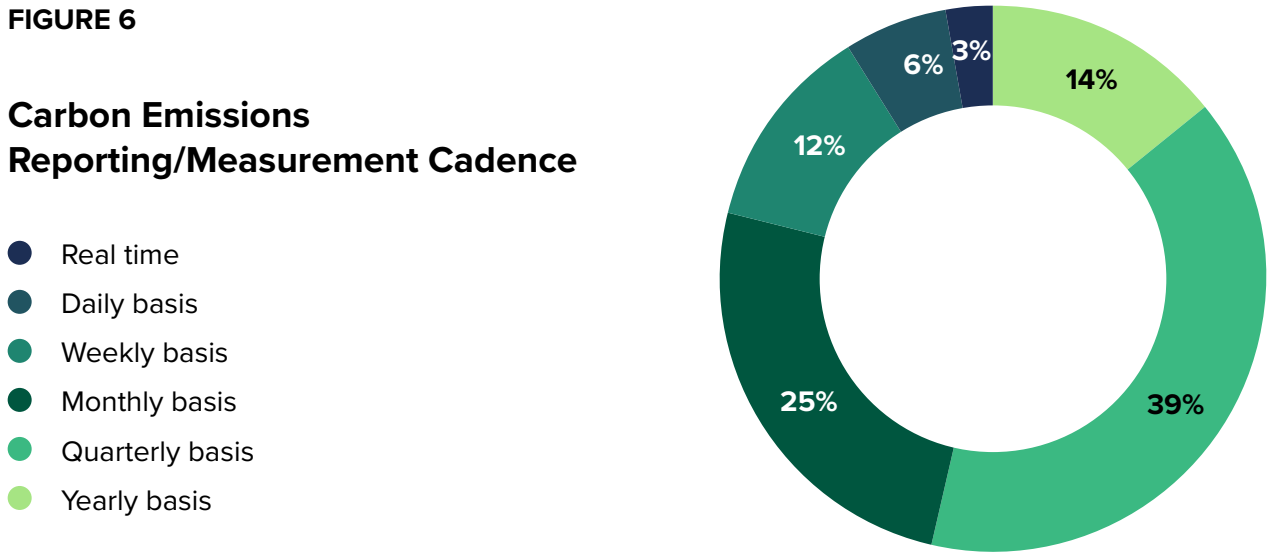
FIGURE 5

Most Aggressive 2030 Goals For Reducing Carbon Emissions/Energy Consumption By Role

Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
Note: Showing respondents who report their organization has a carbon reduction goal of 75% or higher.
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

FIGURE 6

Carbon Emissions Reporting/Measurement Cadence



Base: 1,537 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises
Note: Percentages do not total 100 because of rounding.
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

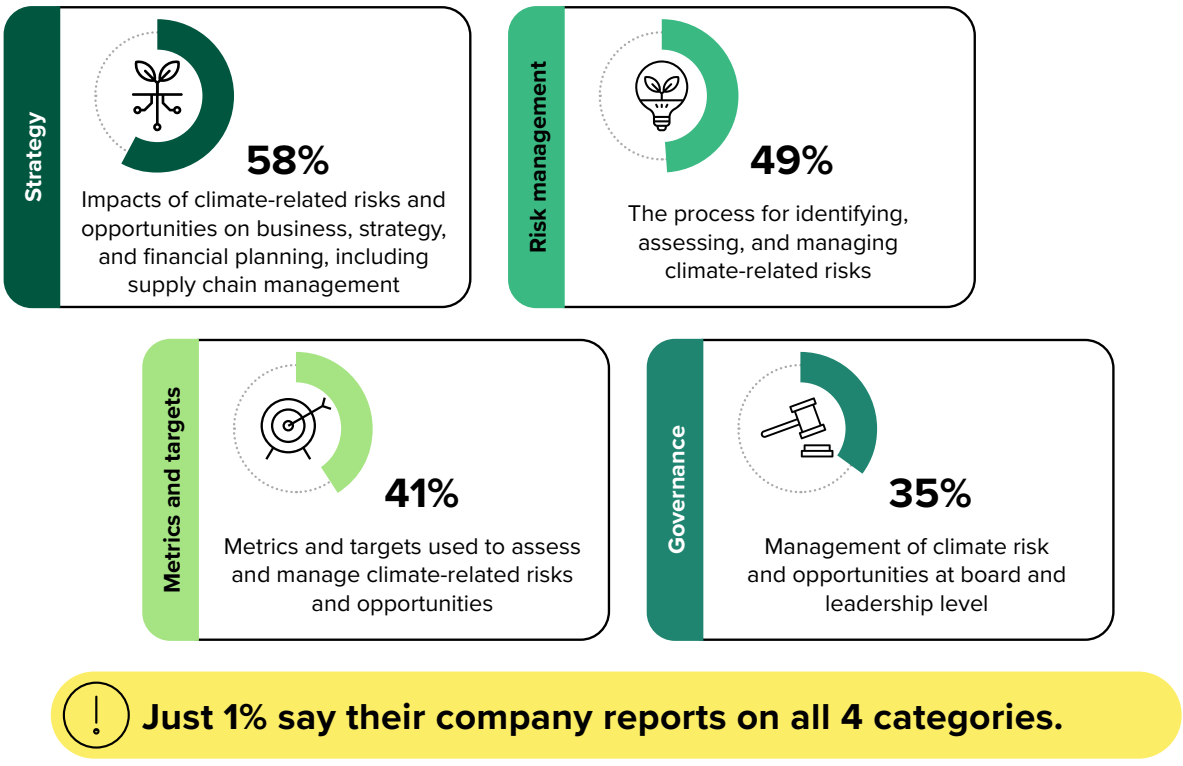
- **Environmental impact reporting is fragmented and far from standardized.** The most used reporting standard is the Global Reporting Initiative (GRI), which allows for more reporting flexibility than other frameworks, and nearly 30% of respondents say their organization is reporting on more than three identified standards. Of the organizations with climate transition plans in place, only 1% can report on all four areas of governance, strategy, risk management, and metrics and targets recommended by the Task Force on Climate-Related Financial Disclosures (TCFD) (see Figure 7).[6] This indicates that reporting is far from standardized and that organizations lack comprehensive climate-transition plans.
- **Only 10% of leaders say their building systems and equipment are fully integrated today, and it's costing them time, people, and money.** Data integration is key to giving sustainability leaders a holistic understanding of their organizations' energy consumption and greenhouse gas emissions. Yet, on a scale of 1 (not at all integrated) to 7 (fully integrated), only 10% of leaders report their organization's systems and equipment are fully integrated today. Fifty-eight percent struggle to connect building systems from different original equipment manufacturers (OEMs), and 64% say their

organization must go to multiple advisory partners focused on specific building systems to get the expertise it needs across its portfolio of buildings (see Figure 8). Failing to connect and integrate all building systems and collected data impacts corporate operations, revenues, and brand perception. Leaders say their organizations face decreased operating efficiencies (67%), decreased customer loyalty (62%), increased regulatory penalties (59%), decreased revenue (55%), and decreased brand reputation (49%).

If organizations don't improve their ability to measure carbon emissions more regularly and accurately, they can expect to see reduced efficiencies along with increased fines and lost customers. Forrester's research shows that only a third of consumers globally trust when organizations say they will commit to reducing climate change.[7] Customers and stakeholders as a whole demand to see the progress organizations are making.

FIGURE 7

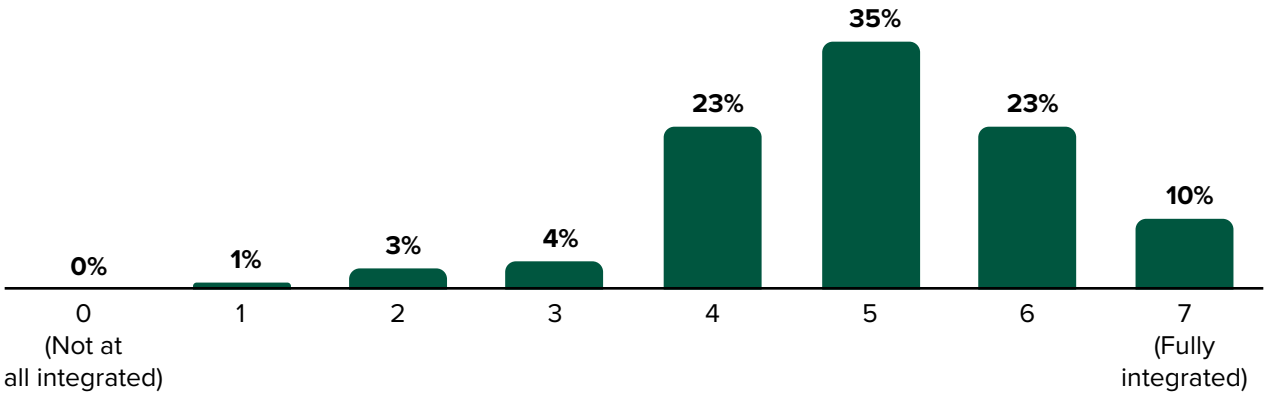
"Which of the following does your company report on/plan to report on relating to its climate transition plan?"

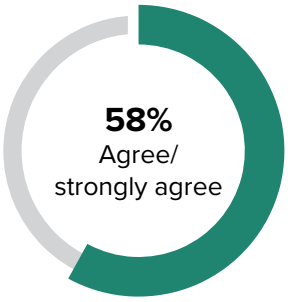


Base: 1,417 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises that have a climate transition plan in place or is developing one
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

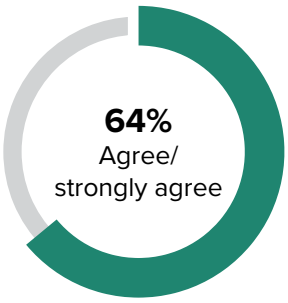
FIGURE 8

"How well integrated are the digital systems, solutions, services, and connected equipment in your organization's buildings?"





My organization struggles to connect building systems from different OEMs.



My organization often has to go to multiple advisory partners focused on specific building systems to get to expertise it needs across its portfolio of building systems.

Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Organizations Are Investing In Smarter Buildings, Partners, And Platforms To Remain On Track

To remain on track in meeting their 2030 carbon-reduction goals, companies need help filling technical and strategic expertise gaps and access to more integrated data/tools. We found:

- **The most impactful building sustainability initiatives start with upgrading, digitizing, and automating systems to improve efficiency.** Sixty-nine percent of leaders say smart buildings are important in helping their organization accelerate its sustainability initiatives. Leaders indicate replacing old equipment to improve efficiency and cost savings, adding/upgrading building-automation controls and digital technologies, and upgrading air-quality/emissions monitoring equipment are having the most impact on their organizations' abilities to improve sustainability of owned or leased spaces. Based on the results from the 2021 study commissioned by Johnson Controls, many organizations started their smart buildings sustainability journeys by upgrading old equipment to improve efficiency and enabling air-quality and emissions monitoring.
- **With the foundation in place, AI will drive further efficiency and give leaders access to more actionable sustainability insights.** AI is the next step in the sustainable smart building evolution, and many organizations have or will soon have the infrastructure in place (e.g., via upgraded systems and automation) to take advantage of it. Roughly a third of respondents say they expect AI will have a significant impact on improving sustainability in their organization's company-owned spaces by providing actionable recommendations based on learning from operational data and predictive maintenance capabilities to prevent downtime and optimize efficiencies before losses occur (see Figure 9).

FIGURE 9

Upgrading, Digitizing, And Automating Systems Set The Foundation For Smart, Sustainable Buildings

61% Upgrading old systems to improve efficiency (e.g., upgrading lighting, HVAC, etc.)

56% Adding/upgrading building automation controls

45% Upgrading air quality and/emissions and water infrastructure monitoring equipment

42% Adding/upgrading digital building technologies to optimize energy use

37% Energy, emissions, water, and waste analysis using AI/ML technology that learns from operational data to recommend actions and/or model energy use under different scenarios

31% Predictive maintenance using AI/ML technology that prevents downtime and optimizes efficiency

Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
Note: Note: Showing smart building investment initiatives with most significant impact on improving building sustainability
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Organizations are shifting from proprietary to out-of-the box tools for more accurate measurement.** In the 2021 survey, 45% of leaders indicated their organizations were using proprietary, custom-built tools. In 2023, just 14% indicate their organization uses proprietary, custom-built tools. This is primarily due to the rising capabilities of out-of-the-box/off-the-shelf platforms to integrate well into the business needs of various industries (see Figure 10).

FIGURE 10

Types Of Environmental Sustainability Reporting Used/Planning To Use

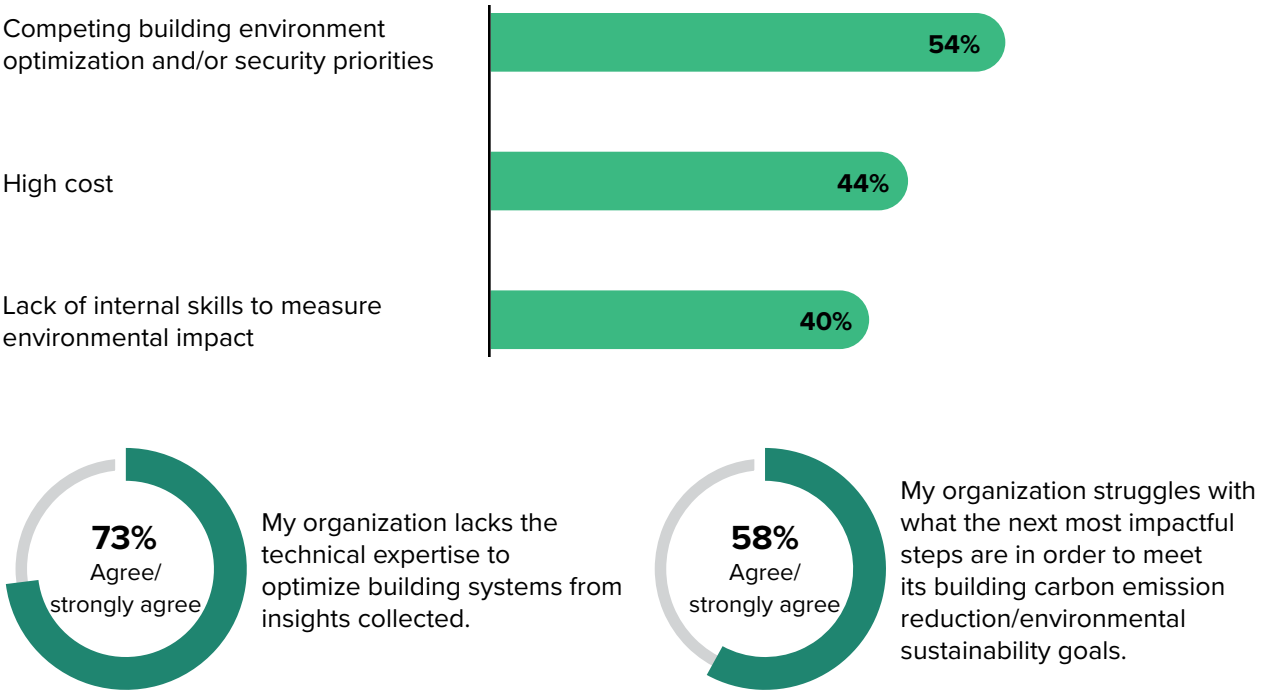
Base: 1,029 sustainability decision-makers at global enterprises prioritizing corporate sustainability
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, September 2021
*Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
*Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Ensuring resiliency of sustainability initiatives requires partners and solutions that deliver cost savings and help the bottom line.** The urgency to address sustainability continues to accelerate. However, factors outside of leaders' control that could impact budget have the potential to affect their organizations' abilities to maintain sustainability goals. In fact, while one-third of surveyed leaders state their organization would be able to fully maintain its environmental sustainability strategy and carbon reduction goals if faced with a 10% budget cut, another two-thirds predict their organization would have to adjust its current sustainability strategies and/or goals. To account for factors outside their control, it's clear organizations need help building resiliency into their sustainability strategies. Strategic partners and/or technology solution providers can help organizations identify areas of opportunity for short- and mid-term savings. This can include investments in energy efficiency solutions and water and waste reduction.

- **Technical and strategic partners are often needed to help organizations fill expertise gaps.** Seventy-three percent of sustainability leaders say their organization lacks the technical expertise to optimize building systems, and 40% say their organization lacks the internal skills to measure its environmental impact. Other top challenges include not understanding the next, most impactful steps to take to meet sustainability goals (58%); struggling with competing organizational priorities (54%); and high costs related to executing on sustainability priorities (44%) (see Figure 11). To succeed in digitally transforming their buildings and achieving their goals, organizations need partners to fill internal expertise gaps and help build the foundation or strengthen their carbon emissions reduction roadmaps.

FIGURE 11

Challenges Related To Executing On Carbon Emissions Reduction Goals

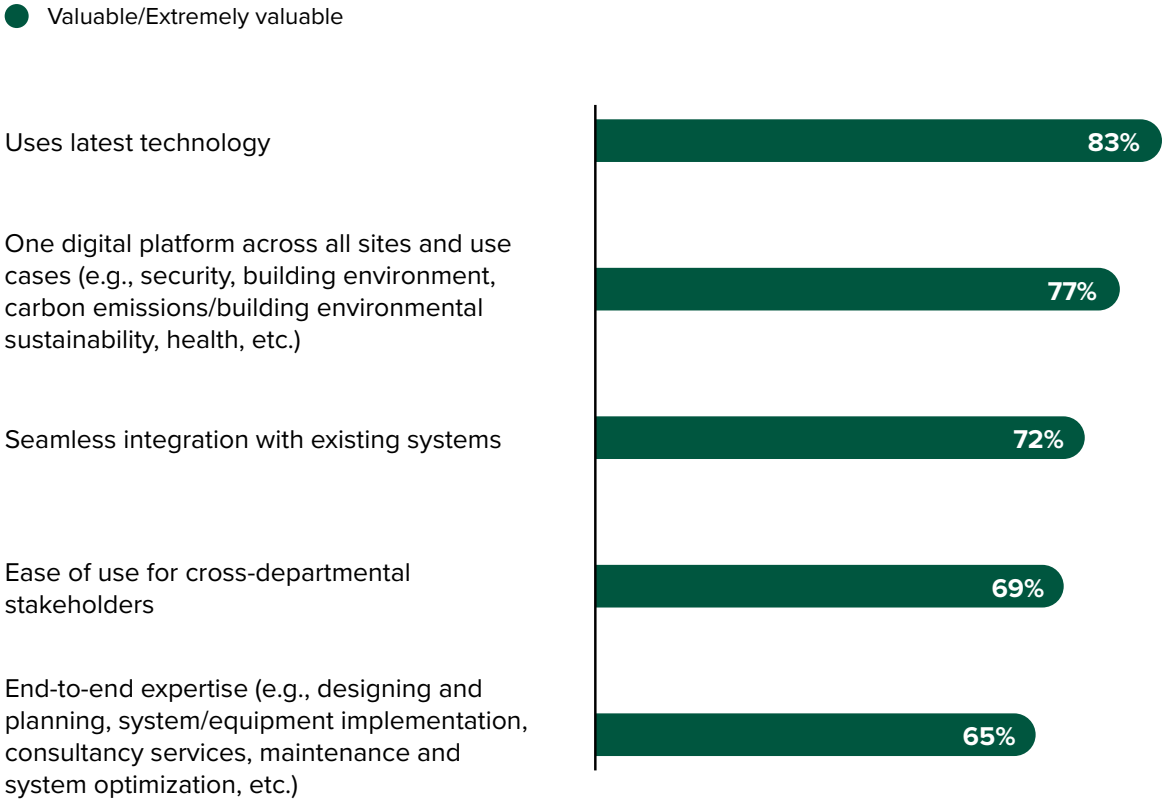


Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
Note: Showing selected options.
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **A unified smart buildings platform can help unify the organization.** The entire business is responsible for the success of sustainability initiatives, and as cross-departmental leaders continue to work more closely to achieve these goals, they need consistent and reliable metrics. Surveyed leaders say their organizations seek partners that use the latest technology (83%), can provide one digital platform across all sites and use cases (77%), has a platform that's easy to use for cross-departmental stakeholders (69%), can provide seamless integration into all building systems (72%), and has end-to-end expertise (65%) (see Figure 12).

FIGURE 12

"How beneficial are each of the following when choosing a smart building solution provider?"

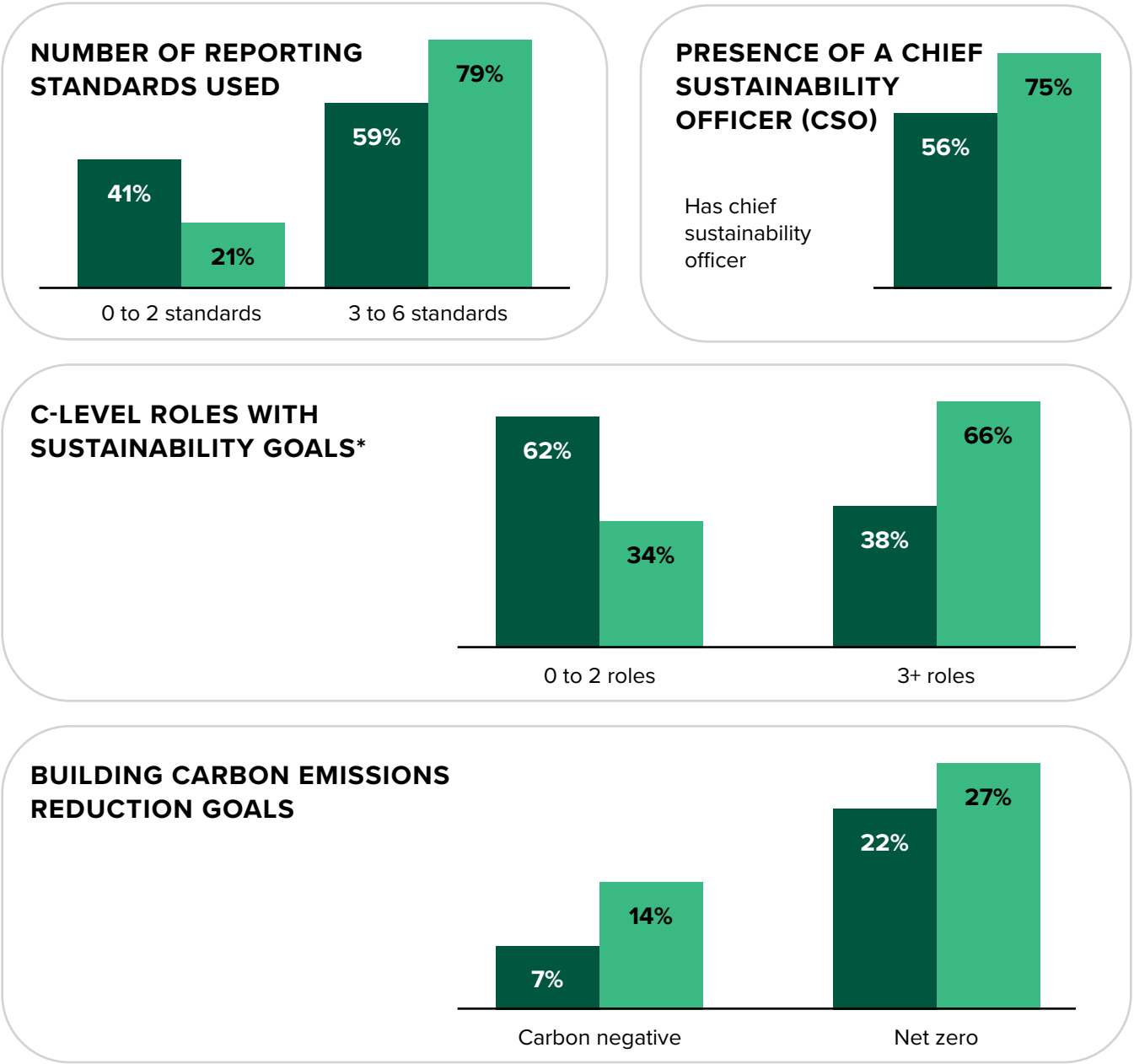


Base: 1,537 smart building decision-makers at the director level or higher for environmental sustainability at global enterprises
Note: Showing selected options.
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

- **Organizations with comprehensive climate transition plans are leading the race to decarbonization.** Staying on track to achieve 2030 sustainability goals requires organizations to develop comprehensive strategies and roadmaps. Significant differences are evident when comparing the responses of leaders from organizations that report on at least three of the TCFD-aligned climate transition plan categories (strategy, risk management, metrics/targets, and governance) compared to those from organizations that report on none or on just one category.[8] Organizations with comprehensive climate transition plans in place are much more likely to report on a greater number of sustainability-reporting standards including industry-specific regulatory requirements such as the International Integrated Reporting Council (IIRC) and TCFD. These organizations are more likely to have a chief sustainability leader or an equivalent in place, have more leadership roles that have sustainability goals, and be pursing net-zero or carbon-negative goals (see Figure 13).

FIGURE 13

Profile Of Companies With Established Climate Transition Plans



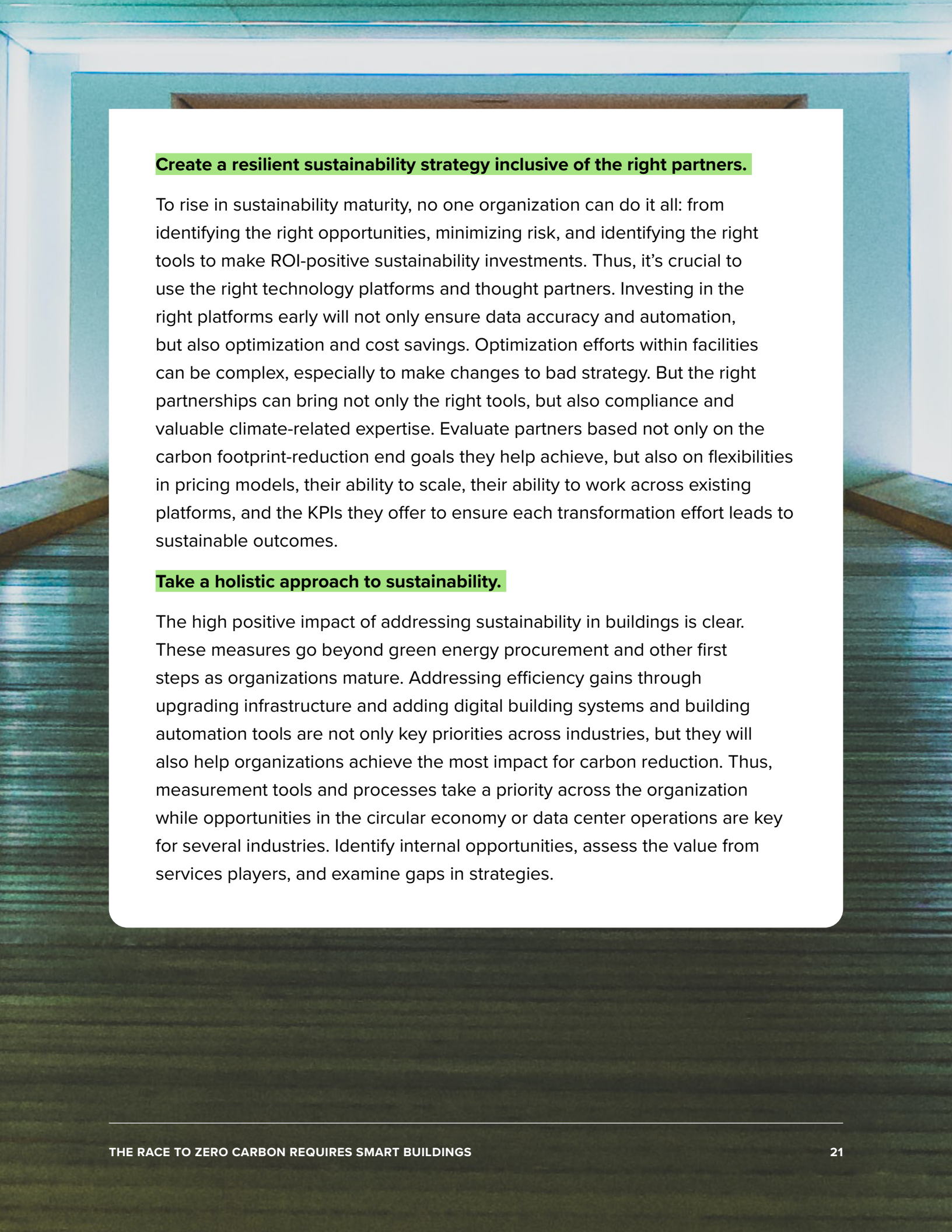
Base: 694 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises
*Base: 433 smart buildings decision-makers at the director level or higher for environmental sustainability at global enterprises that have a chief sustainability officer or equivalent role
Note: Comparing decision-makers from organizations that report on at least three of the following climate transition plan categories compared to those from organizations that report on zero to one category. Categories include strategy, risk management, metrics/targets, and governance.
Source: A commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, August 2023

Key Recommendations

It's time for organizations to view sustainability as a historic business opportunity on par with the first and second industrial revolutions. The world must change everything from how we make products, plug in, and finance and protect assets to how we get goods and ourselves around and even what we eat. As building operations consume over one-third of global energy consumption and nearly 40% of global energy-related emissions, zero-carbon buildings play an outsized role in the race to decarbonization.[9] Smart buildings allow organizations to leverage automation and AI to significantly increase efficiencies, reduce waste, improve occupant health and experiences, and better measure and continuously improve on progress towards sustainability goals. However, enabling smart buildings is challenging and requires the right technical and strategic partners for success. Forrester's in-depth survey of 1,537 sustainability leaders yielded several important recommendations:.

Make sustainability investments sustainable.

The opportunities that will emerge out of the green market revolution will be comparable to the industrial revolution of the past two centuries.[10] Sustainability is often synonymous with optimization and vice versa. This is especially true for facilities in which optimization of energy and resources consumption, waste reduction, and carbon footprint reduction will lead to positive ROI very quickly. Extensive research including this study highlights that organizations fail to account for the most ROI positive levers from the onset. Identify opportunities to connect sustainability with business value by looking for methods of internal optimization and automation and break down data silos. This will ensure the strategies and goals you put in place will survive economic volatility.



Create a resilient sustainability strategy inclusive of the right partners.

To rise in sustainability maturity, no one organization can do it all: from identifying the right opportunities, minimizing risk, and identifying the right tools to make ROI-positive sustainability investments. Thus, it's crucial to use the right technology platforms and thought partners. Investing in the right platforms early will not only ensure data accuracy and automation, but also optimization and cost savings. Optimization efforts within facilities can be complex, especially to make changes to bad strategy. But the right partnerships can bring not only the right tools, but also compliance and valuable climate-related expertise. Evaluate partners based not only on the carbon footprint-reduction end goals they help achieve, but also on flexibilities in pricing models, their ability to scale, their ability to work across existing platforms, and the KPIs they offer to ensure each transformation effort leads to sustainable outcomes.

Take a holistic approach to sustainability.

The high positive impact of addressing sustainability in buildings is clear. These measures go beyond green energy procurement and other first steps as organizations mature. Addressing efficiency gains through upgrading infrastructure and adding digital building systems and building automation tools are not only key priorities across industries, but they will also help organizations achieve the most impact for carbon reduction. Thus, measurement tools and processes take a priority across the organization while opportunities in the circular economy or data center operations are key for several industries. Identify internal opportunities, assess the value from services players, and examine gaps in strategies.

Appendix A: Methodology

Forrester conducted an online survey of 3,445 leaders responsible for smart buildings strategy at their organizations, including 1,537 sustainability leaders at organizations in 18 industries across 25 countries to evaluate the current state of building system integration, data connectivity, and the ability to share and leverage data collected across the organization for building system optimization. In addition to asking high-level questions about their organizations' smart buildings strategies, sustainability leaders were asked questions about their organizations' carbon-reduction strategies and goals and related challenges. The study was conducted in a double-blind fashion.

To read the full results of the 2023 study, please refer to the Thought Leadership Paper commissioned by and developed in collaboration with Johnson Controls titled, "Cracking The Code: Unleash Your Smart Buildings Strategy With The Power Of Facility Data."

This paper includes trending data from the 2021 study "The Race To Decarbonization" conducted by Forrester Consulting and commissioned by and developed in collaboration with Johnson Controls.

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Appendix B: Demographics

DEPARTMENT	
Facilities (e.g., energy management, procurement, real estate, environmental health and safety)	**24%**
IT	**22%**
Sustainability	**14%**
Employee experience (including HR, workplace experience)	**8%**
Operations	**8%**
Governance/risk/compliance	**8%**
Finance/accounting	**7%**
CEO/office of president	**6%**
Customer experience (CX)	**3%**
Sales/marketing	**1%**

ORGANIZATION SIZE	
2 to 499 employees	**1%**
500 to 999 employees	**31%**
1,000 to 4,999 employees	**39%**
5,000 to 19,999 employees	**29%**

TITLE	
C-level executive	**15%**
Vice president	**29%**
Director	**55%**

INDUSTRY	
Healthcare	**8%**
Data centers	**8%**
Government	**8%**
Energy, utilities, waste management	**7%**
Education	**7%**
Mixed use residential/ commercial real estate	**6%**
Electronics	**7%**
CPG	**5%**
Business/professional services	**5%**
Financial services	**5%**
Manufacturing and materials	**5%**
Agriculture/food and beverage	**4%**
Retail	**4%**
Travel and hospitality	**4%**
Media and/or leisure	**4%**
Construction	**4%**
Transportation and logistics	**4%**
Chemicals/metals	**4%**

REGIONS	
North America	**31%**
Central Europe	**9%**
United Kingdom and Ireland	**9%**
Southeast Asia	**6%**
Australia and New Zealand	**6%**
Hong Kong	**6%**
Latin America	**5%**
India	**5%**
Singapore	**5%**
China	**5%**
South Korea	**5%**
Japan	**4%**
Middle East and Africa	**4%**

Note: Percentages may not total 100 due to rounding.

Appendix C: Supplemental Material

RELATED FORRESTER RESEARCH

Abhijit Sunil, Ian Bruce, "Generative AI Will Supercharge The Green Market Revolution," Forrester Blogs.

"CIOs: Take Five Actions To Kick-Start Your Firm's Environmental Sustainability Agenda," Forrester Research, Inc., May 19, 2023.

March 30, 2023, "The Role Of Sustainability In Responding To Today's Global Uncertainty," Webinar.

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Appendix D: Endnotes

[1] Source: "The Net Zero Carbon Buildings Commitment," World Green Building Council.

[2] Source: "Green Market Revolution Forecast, 2023 To 2050 (Global)," Forrester Research, Inc., June 23, 2023.

[3] Source: "The Green Market Revolution," Forrester Research, Inc., October 11, 2022.

[4] Source: "The Race To Decarbonization," a commissioned study conducted by Forrester Consulting on behalf of Johnson Controls, November 2021.

[5] Source: "The State Of Environmental Sustainability In The Fortune Global 200, 2022," Forrester Research, Inc., October 11, 2022; "Pandemic Automation – A Quiet But Powerful Environmental Upside," Forrester Research, Inc., July 11, 2022.

[6] Source: "TCFD Recommendations," Task Force On Climate-Related Financial Disclosures, June 2017.

[7] Source: "The Future Of Business Is Sustainability," Forrester Research, Inc., October 27, 2021.

[8] Source: "TCFD Recommendations," Task Force On Climate-Related Financial Disclosures, June 2017.

[9] Source: "The Net Zero Carbon Buildings Commitment," World Green Building Council.

[10] Source: "The Green Market Revolution," Forrester Research, Inc., October 11, 2022.