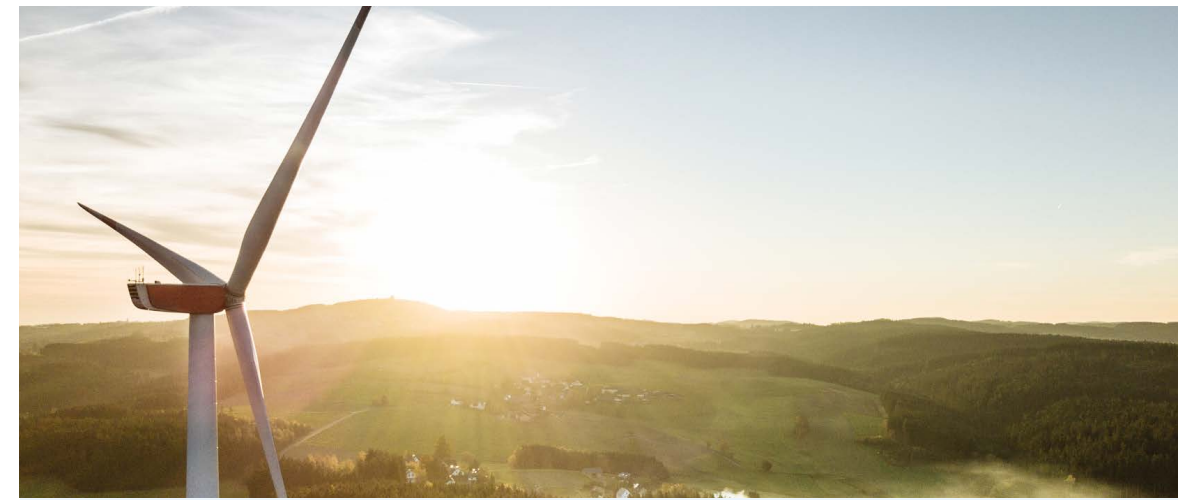


SUSTAINABLE STORAGE

Managing Data Center Energy
Consumption in Times of Uncertainty

Keir Walker, Senior Market Research Analyst

APRIL 2023



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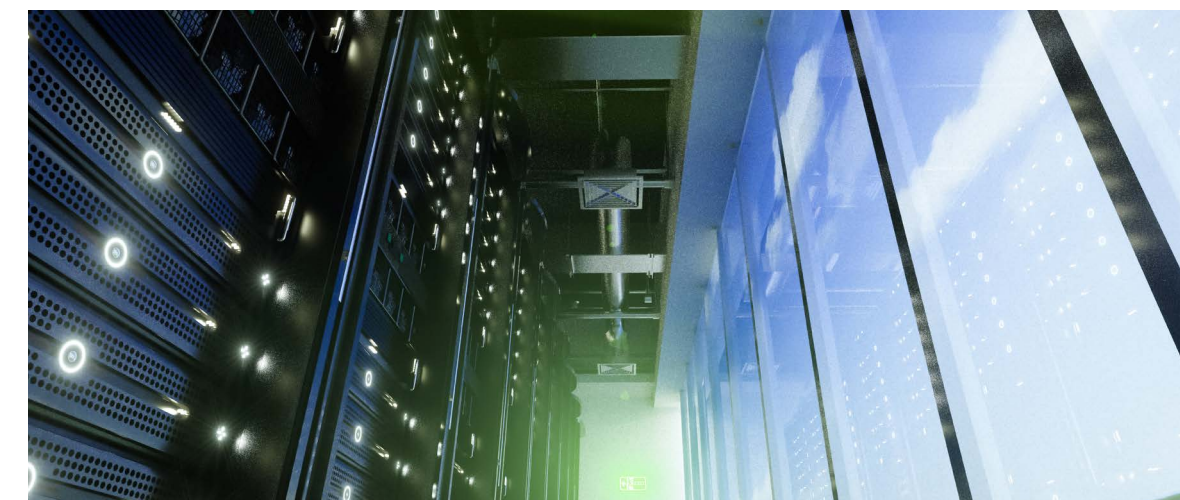
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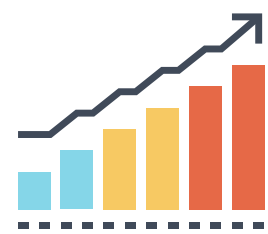
Overview

Uncertainty can often be the cause of reactionary trends. In recent years, energy costs have risen dramatically, laying the foundation for a rising cost of doing business across multiple sectors. At the same time, energy consumption and demand have continued to increase.

In the tech sector, the rate of energy consumption directly related to unstructured data creation and storage presents challenges that are exacerbated by energy instability. More pressure is added as organizations struggle to find ways to adhere to mounting pressure to meet environmental, social, and governance (ESG) initiatives.

To gain insight into the future of data storage sustainability, TechTarget's Enterprise Strategy Group surveyed 450 IT professionals at organizations in North America (U.S. and Canada, 223) and Western Europe (U.K., Germany, and France, 227) who were knowledgeable about their organization's data center storage environment and planning processes. This research was intended to understand how energy inefficiency and consumption are driving data storage solution strategy and execution across the globe.

Highlighted Research Findings



The amount of unstructured data is expected to increase more than **50%** year over year.



There is an **87%** increase in the importance in data center sustainability over the last year.



Roughly **four out of five** organizations (78%) are actively implementing sustainable technologies in their data centers or are planning to.



ESG will influence IT purchase decisions for nearly **100%** of organizations.

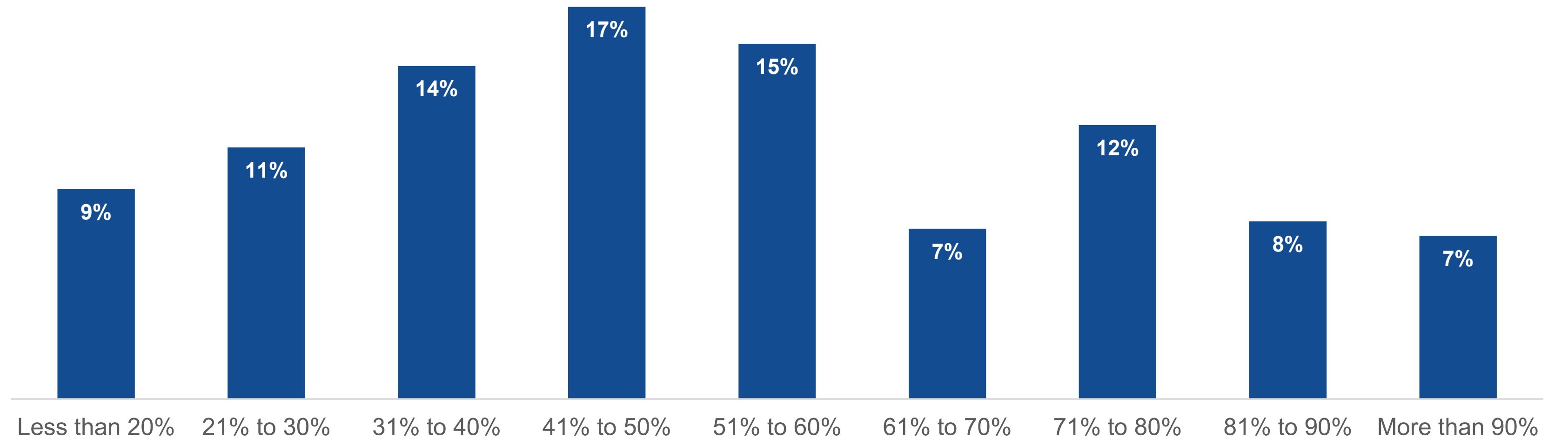


Growth and Size of Unstructured Data Keeps Pace with Evolving Enterprise Needs



| The rate by which unstructured data capacity requirements is estimated to increase over the next 2 to 3 years

ESTIMATED AVERAGE MEAN = 53%



Unstructured data is growing at an exponential rate

Organizations' average unstructured data growth rates are anticipated to be greater than 50% year over year.

This increase forces IT leaders and data center managers to find new ways to address rising energy costs, energy insecurity, and downstream ESG-related challenges.



Organizations' average unstructured data growth rates are anticipated to be greater than

50% year over year.

The amount by which total data storage capacity is required to support companies' unstructured data requirements.

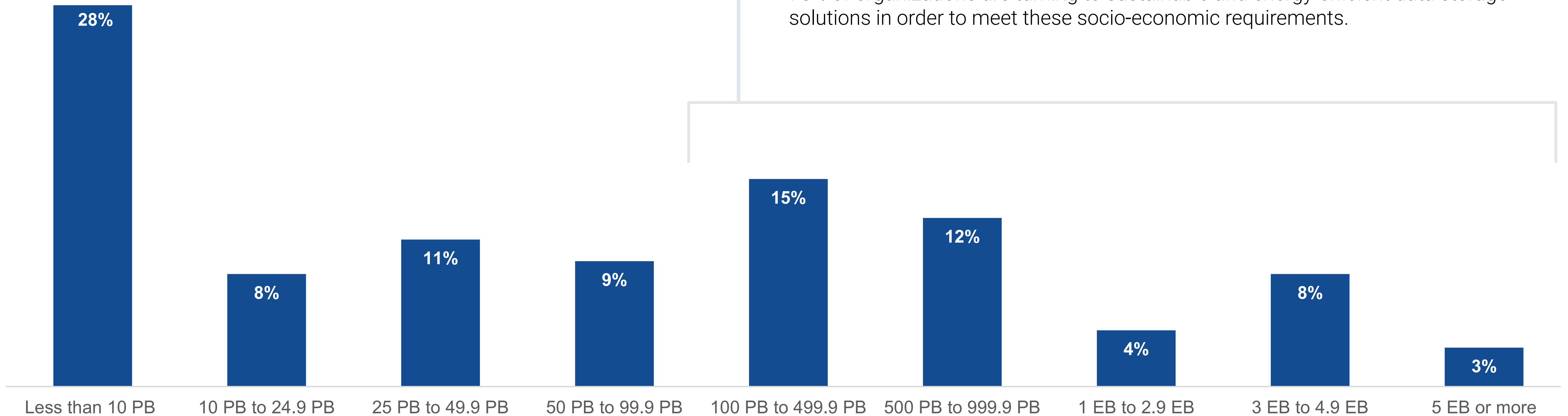


42% of all organizations manage over **100 PB of unstructured data.**

Managing this amount of data has both economic and ESG impacts. According to respondents, maintaining their growing data storage environments requires a substantial amount of energy.

78% of organizations are turning to sustainable and energy-efficient data storage solutions in order to meet these socio-economic requirements.

ESTIMATED MEDIAN = 75 PB



Importance of Energy Efficiency and Rising Energy Insecurity for IT



Growing data center concerns around energy insecurity and the need for sustainable solutions



89%

of all respondents indicated energy efficiency is very or somewhat **more important in data storage solution purchases than one year ago.**



81%

of organizations are concerned about energy insecurity in the regions where they operate data centers.



Efficient solutions for data storage are necessary to address energy insecurity.”

Keir Walker,
Senior Market Research Analyst

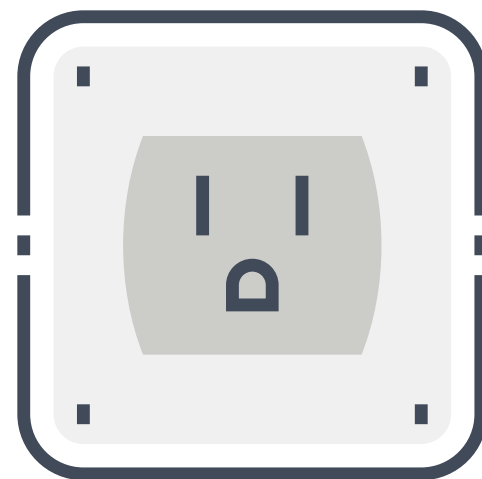
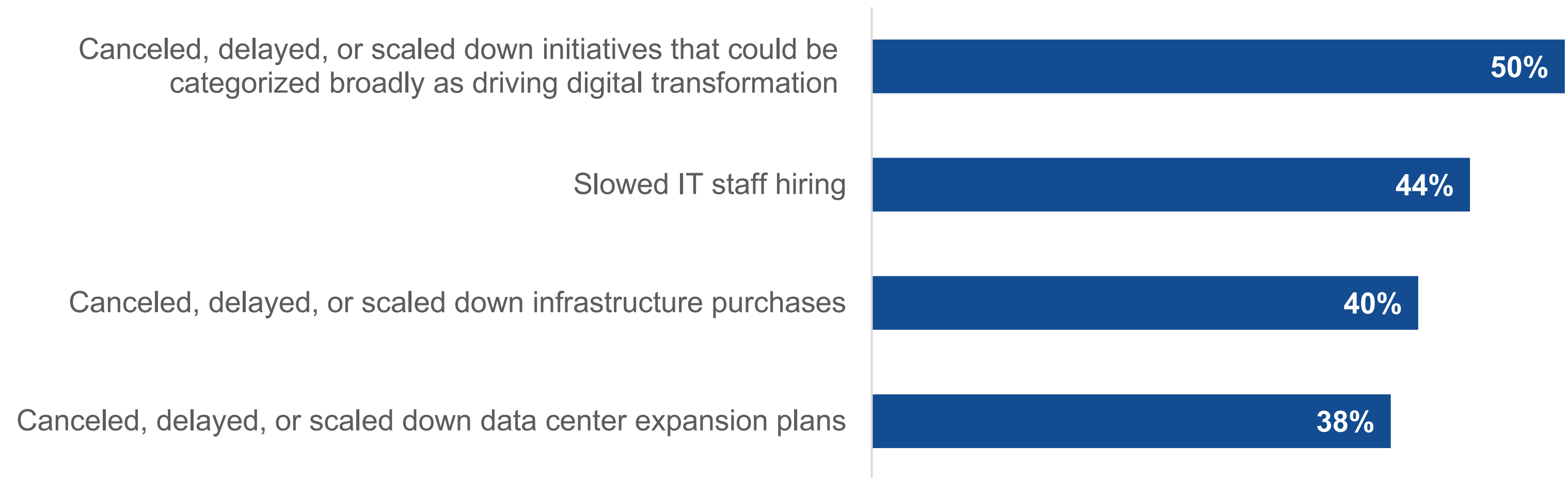
IT departments are taking action to mitigate rising energy costs

Respondents assume the rising costs of and access to energy is not a passing trend. Rather, energy costs are expected to get worse before they get better.

Energy insecurity continues to have a negative effect on impending and necessary digital transformative initiatives. IT departments are scaling back on key initiatives to reduce costs in response to the growing energy insecurity challenge.

85% of respondents reported that disruptions have manifested in delayed, canceled, or scaled down projects due to fewer resources and slower IT hiring.

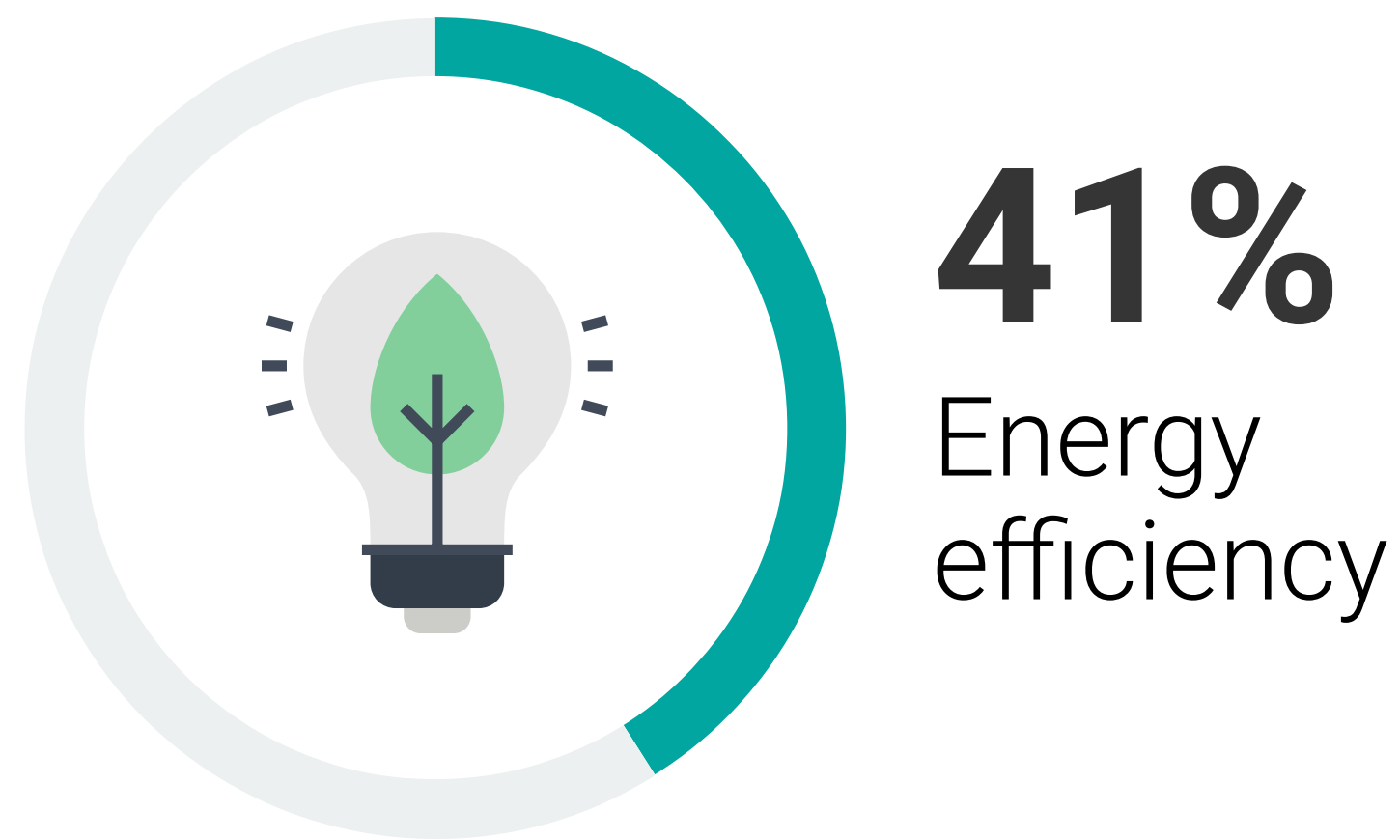
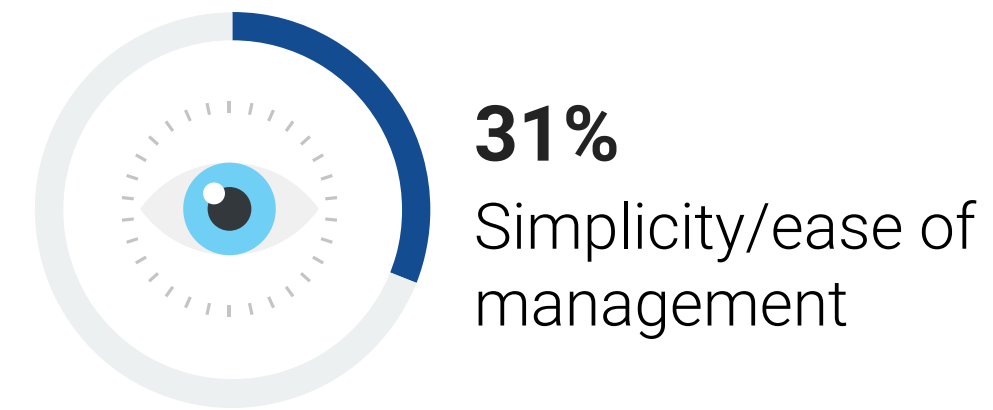
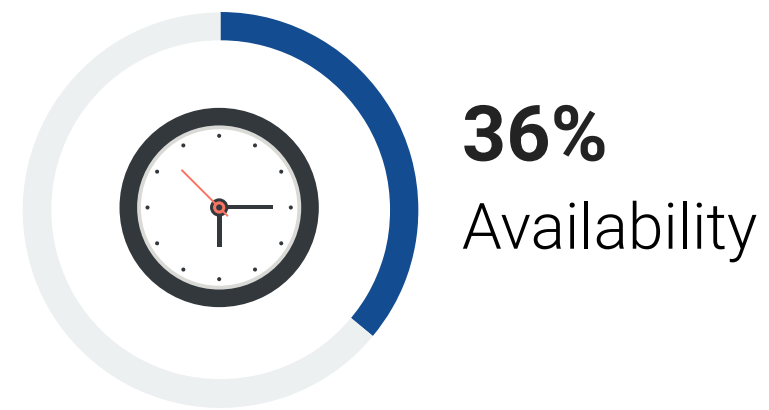
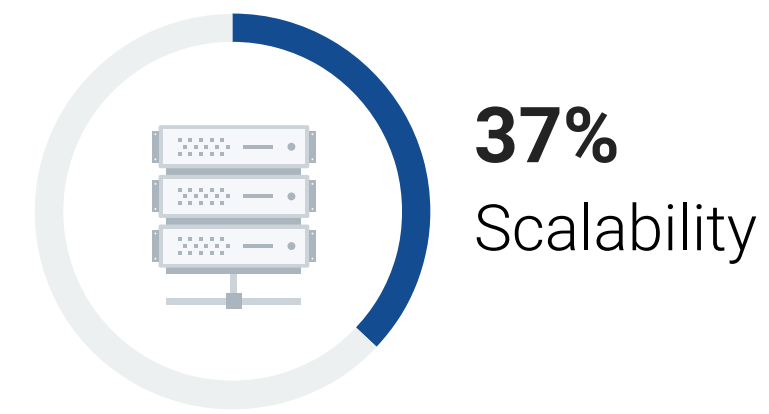
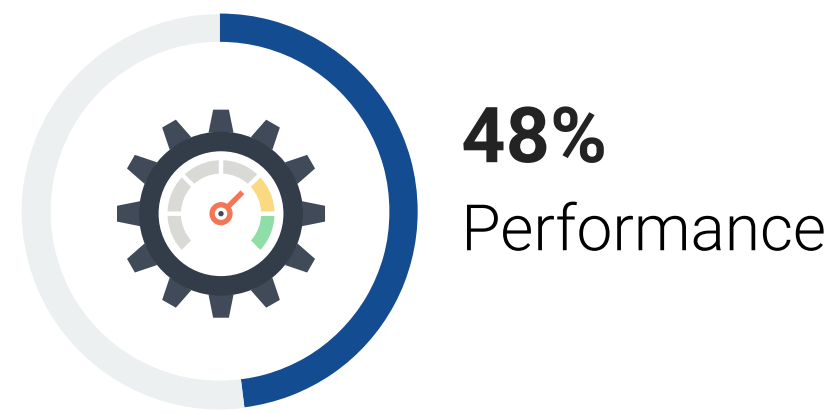
| Has your organization taken any of the following actions to mitigate/reduce costs as it relates to its next fiscal year planning in response to current energy prices (and their resulting impact on IT budgets)?



85%

of respondents reported digital transformation projects, infrastructure purchases, data center expansions, and/or IT hiring **have been impacted as a result of current energy prices.**

| The characteristics of storage solutions that have increased the most in importance over the last year



Respondents with higher seniority reported energy efficiency more often

- 43% - C-level
- 46% - Sr. management
- 29% - Mid-management/ICs

Evaluating new solutions: Energy efficiency is a top-3 requirement

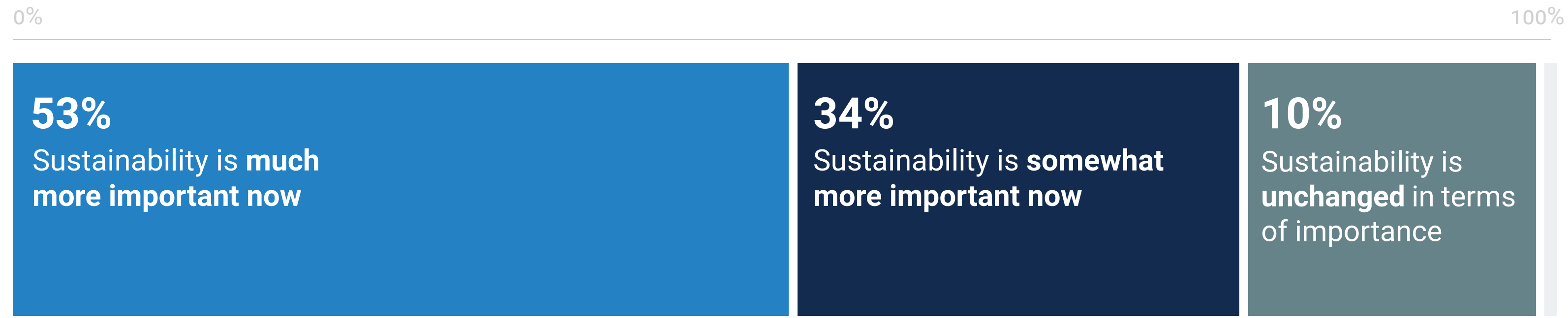
It is unsurprising that energy efficiency is a serious concern, as unstructured data storage requirements continue to increase along with costs, ESG-related concerns, rising inflation, and global uncertainty.

Energy efficiency, security, and performance are the 3 considerations for selecting a storage infrastructure solution that have increased the most in importance in the last year.

An aerial view of a modern building's rooftop garden. The structure consists of a grid of concrete frames, each containing a lush green tree. The scene is captured from a high angle, showing the repetitive pattern of the architecture. The lighting is soft, suggesting early morning or late afternoon, with a warm glow emanating from the interior of the frames. The overall aesthetic is clean, geometric, and sustainable.

The Call for ESG-ready and Sustainable Storage Is Loud and Clear

| Assessing the importance of the sustainability of IT products (e.g., power consumption, cooling requirements, etc.) in terms of purchase decisions, relative to 12 months ago



Respondents with higher seniority reported “much more important” more often

62% - C-level

48% - Sr. management

42% - Mid-management/ICs

“ **87% of respondents reported an uptick in the importance of sustainability in IT purchase decisions over the last year.**”

IT sustainability is a strategic initiative to better develop, manage, and use IT resources in order to minimize negative environmental impacts, while gaining economic and social benefits and improving overall ESG posture.

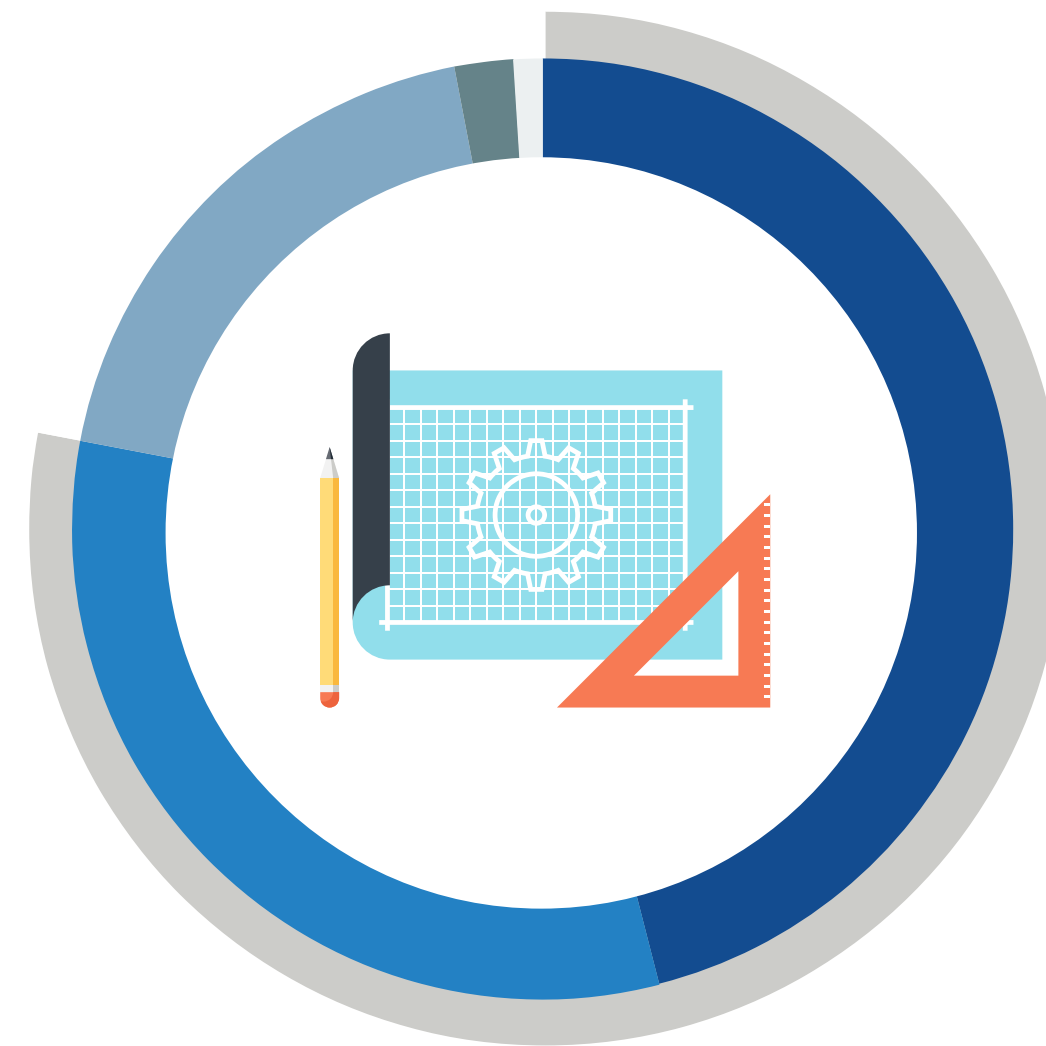
As data centers feel the strain because of growing energy costs, the demands for IT product sustainability increase. Sustainability can help mitigate energy insecurity for organizations, such as those potentially affected by exacerbated data storage energy consumption.

78% of organizations have already implemented sustainable data center initiatives or are actively doing so

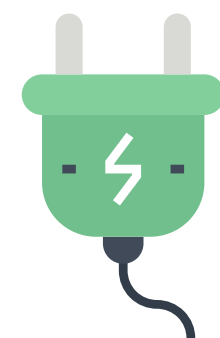
Due to the rapid increases in both energy consumption and unstructured data growth and storage, there is growing emphasis on the adoption of sustainable data center technologies.

The following steps will help organizations make their data centers more sustainable:

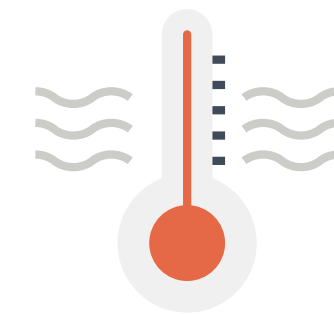
| Respondents' trajectory around data center-focused, sustainability initiatives



- 46%**
■ We have already implemented one or more data center sustainability initiatives
- 32%**
■ We are in the process of implementing one or more data center sustainability initiatives
- 19%**
■ We are planning to create one or more data center sustainability initiatives over the next 12 to 24 months
- 2%**
■ We have not planned but are interested in developing one or more data center sustainability initiatives in the future



Implement highly scalable and power-efficient infrastructure



Upgrade to more efficient cooling and electrical systems



Upgrade air management and heat recovery



Take advantage of renewable energy sources

| Which of the three aspects of ESG has, or will likely have, the most impact on your organization's overall technology investment decisions over the next 12-24 months? (Percent of respondents, N=388)



The environmental aspect of ESG is most influential in technology investment decisions

Considering the full scope of ESG, environmental considerations are rated as most important to organizations 69% more often than social considerations and 52% more often than governance considerations.

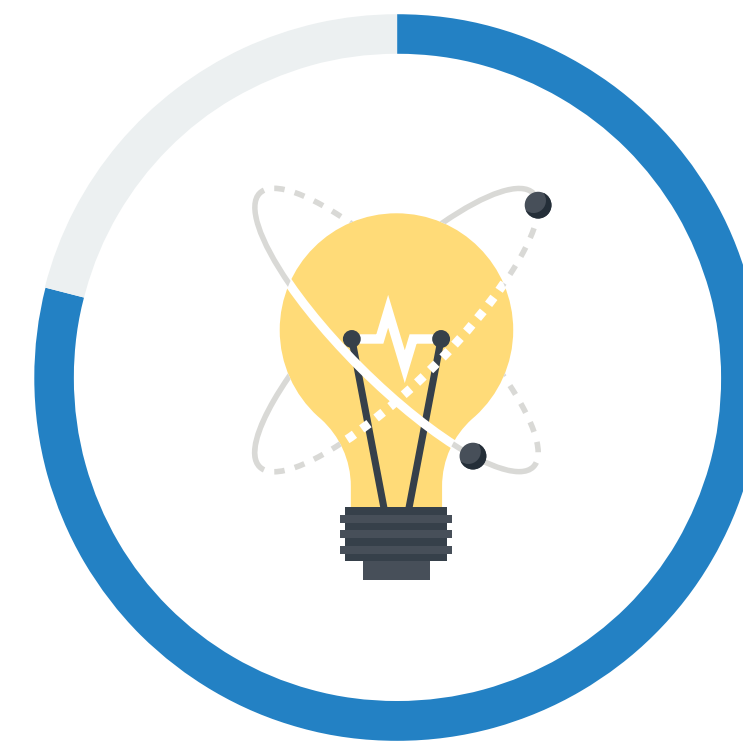
“ With sustainability becoming more top of mind, the result is often a **re-evaluation of existing IT equipment and resources**, resulting in the acceleration of the replacement of inefficient equipment with sustainable infrastructure.”

Sustainability initiatives are accelerating North American IT resource evaluations

| The steps taken by North American (US, Canada) organizations regarding storage vendors in order to support their sustainability initiative(s)

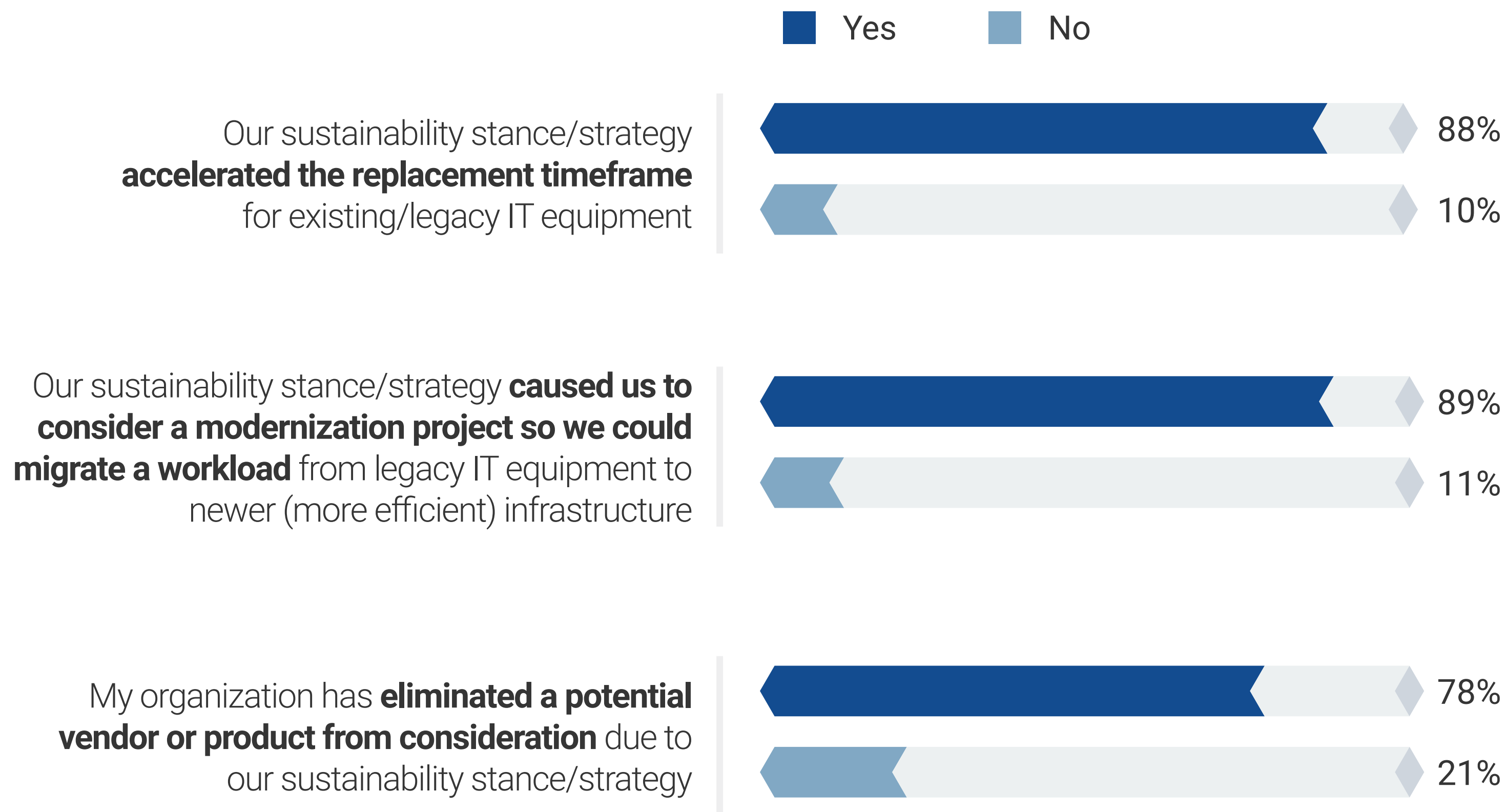


82%
of respondents agree on
**an accelerated time frame for
existing legacy/IT equipment.**



79%
of U.S. respondents
**are considering a
modernization project**

| The steps taken by Western Europe (U.K., Germany, and France) organizations regarding storage vendors, in order to support their sustainability initiative(s)



Western Europe is accelerating storage modernization and more aggressively eliminating potential non-sustainable vendors

Western European respondents were 22% more likely to eliminate vendors for future product consideration due to EU geopolitical concerns, vendor and regulatory challenges, and sustainability initiatives.

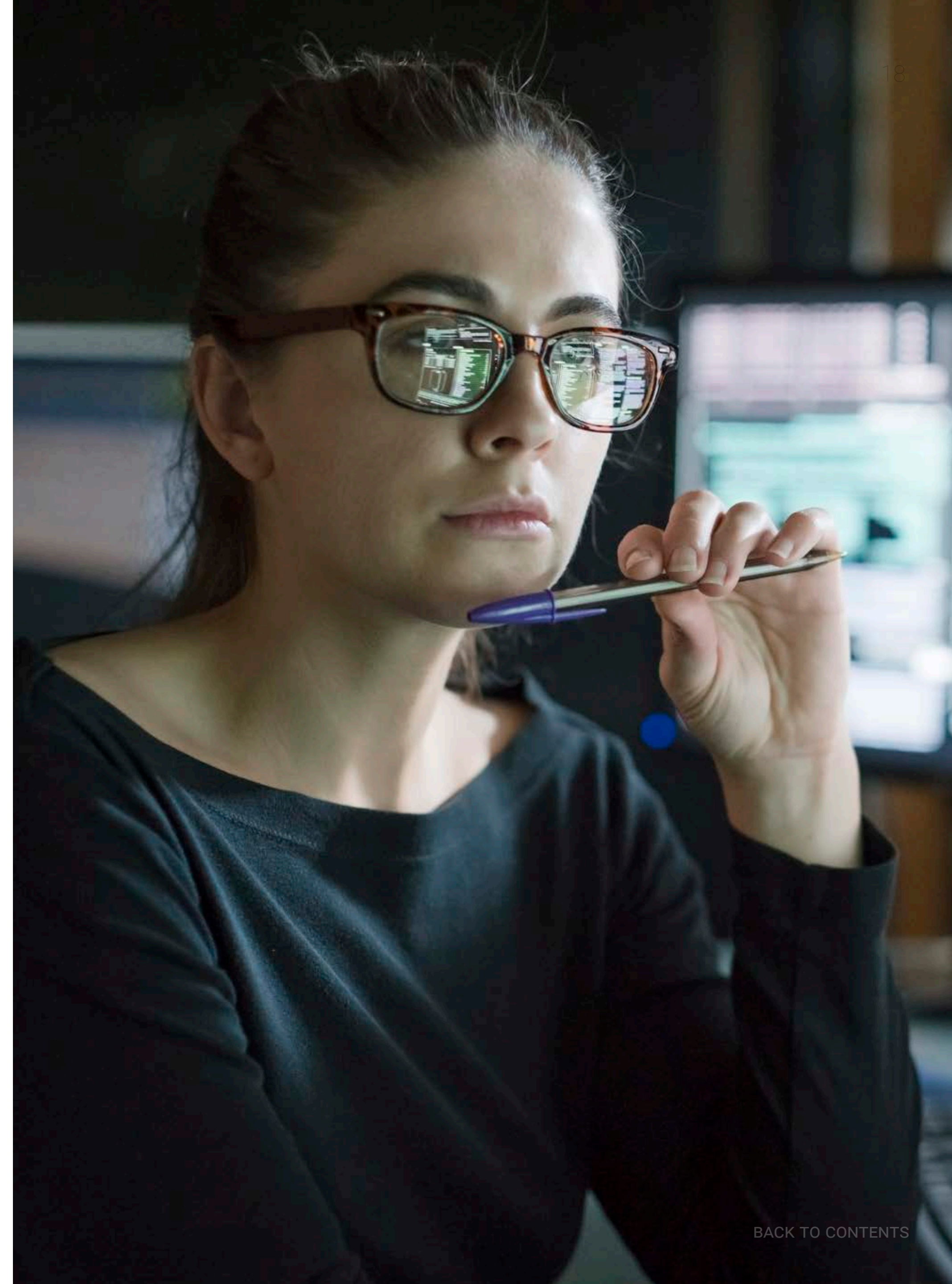
**Pure Storage Offers
Organizations
Sustainable Solutions
for Unstructured
Data Storage**



Conclusion

Enterprise Strategy Group found that the need for sustainable data storage is necessary and in high demand. The data indicates that, driven by economic factors, concerns around energy insecurity and inefficiencies, a rise in corporate and consumer awareness of ESG issues, and global uncertainty, these trends for sustainable IT solutions will continue to rise.

IT leaders must prioritize technologies that deliver energy efficiencies. This will help prepare for a future that will likely require additional energy consumption to keep pace with their evolving IT and data storage needs. The benefits of choosing sustainable data storage solutions will not only help organizations become more energy efficient, save money, and satisfy more of their customers' ESG-related concerns, but also ultimately will help promote more environmentally favorable business outcomes.





Pure Storage FlashBlade//S and FlashBlade//E address data storage sustainability concerns. FlashBlade//S has a unique modular architecture that enables organizations to unlock new levels of power, space, and performance efficiency. This provides the flexibility to adapt and scale storage environments to power the needs of modern data and applications.

FlashBlade//E is capacity-optimized to meet the growing demands of data storage and energy consumption needs. It is a cost-effective, all-flash file and object storage repository that provides increased energy efficiencies by requiring less space, power, and cooling.

Leveraging its extensive experience in all-flash solutions, Pure has built in innovations to both the hardware and software of FlashBlade//E that deliver the economics of disk with simplified manageability, superior sustainability, and economic scale.

[LEARN MORE](#)

ABOUT ENTERPRISE STRATEGY GROUP

TechTarget's Enterprise Strategy Group is an integrated technology analysis, research, and strategy firm providing market intelligence, actionable insight, and go-to-market content services to the global technology community.

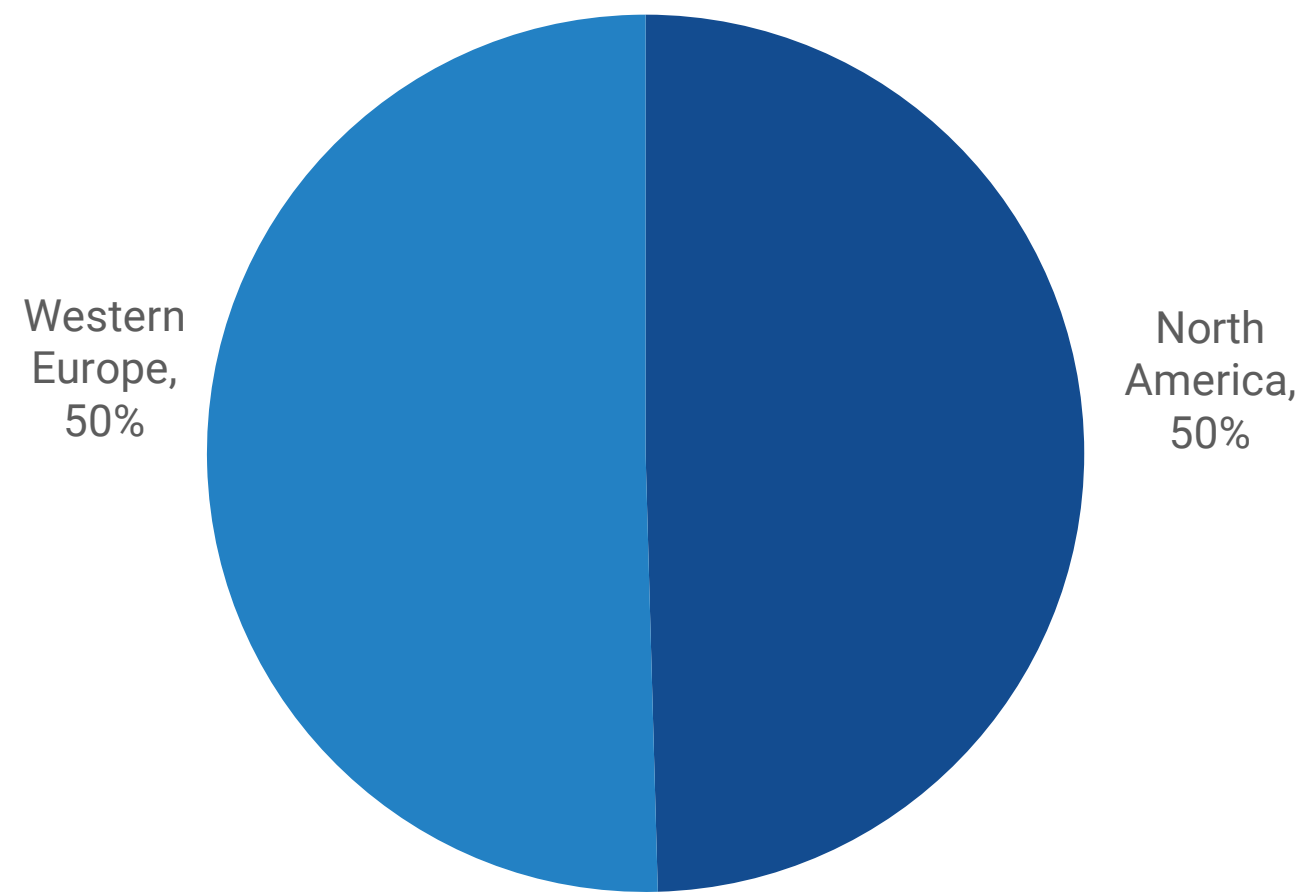


Research Methodology and Demographics

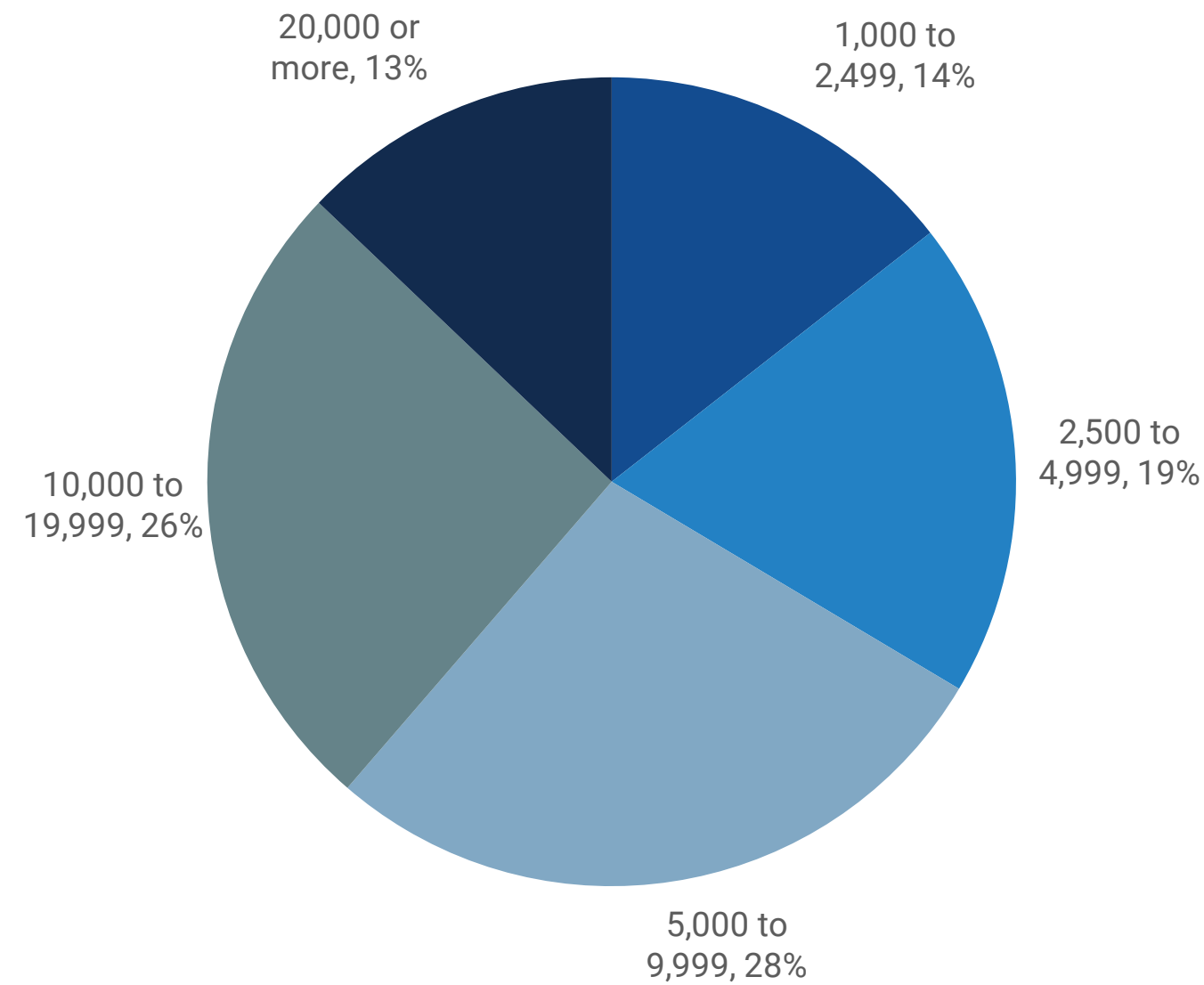
To gather data for this report, Enterprise Strategy Group conducted a comprehensive online survey of IT professionals from enterprise (1,000+ employees) organizations in North America (U.S. and Canada) and Western Europe (U.K., Germany, and France) between December 6, 2022 and December 25, 2022. Respondents were a mix of IT decision-makers (70%), application developers/data scientists/business analysts, etc. (10%), and line-of-business respondents (20%). To qualify, respondents had to be knowledgeable about their organization’s data center storage environment and planning processes. All respondents were provided an incentive to complete the survey in the form of cash awards and/or cash equivalents.

After filtering out unqualified respondents, removing duplicate responses, and screening the remaining completed responses (on a number of criteria) for data integrity, we were left with a final total sample of 450 IT and business professionals from multiple industry verticals, including financial, manufacturing, technology, and retail/wholesale, among others.

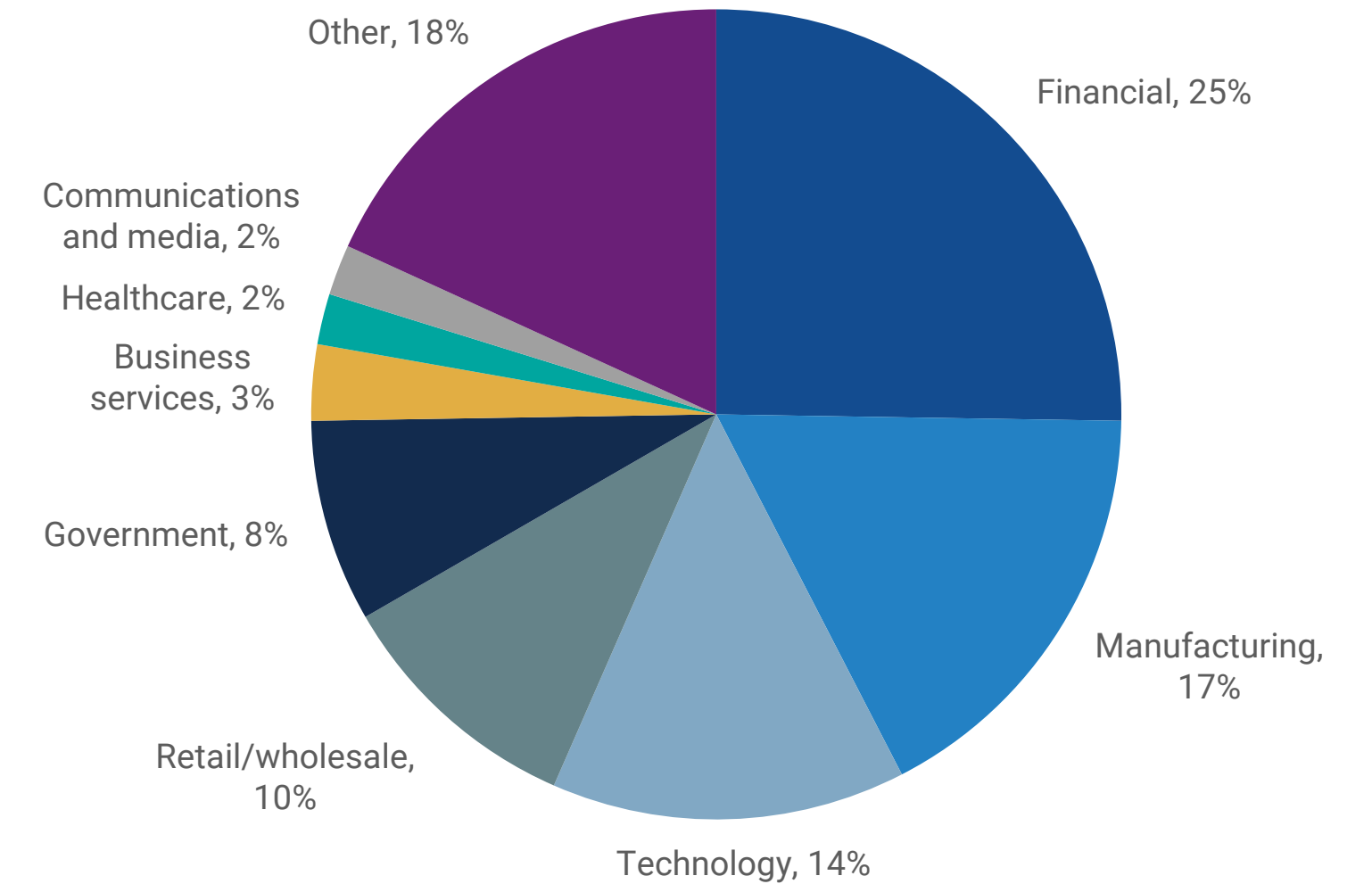
RESPONDENTS BY REGION



RESPONDENTS BY NUMBER OF EMPLOYEES



RESPONDENTS BY INDUSTRY



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