SCALING POWER INFRASTRUCTURE FOR A.I. WORKLOADS

A MarketPulse Survey for Connection–APC

JANUARY 2026

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INTRODUCTION

Today, U.S. enterprises are increasingly adapting their data center power infrastructure to meet the growing demands of AI workloads.

As AI adoption accelerates and energy use climbs, the power systems you rely on to keep operations running must be ready to keep pace. Connection and APC by Schneider Electric partnered with Foundry to deliver this peer-level review of the information you need to know when taking a harder look at how to scale your power infrastructure for AI workloads.

METHOD AND OBJECTIVES

Survey Goals

This research aims to understand how enterprises with active AI implementations in their data centers are planning for increased power requirements.

We explore the current state of AI adoption, the impact of AI workloads on data center power consumption, and the extent to which organizations are proactively planning for future power needs.

The survey also examines:

- Anticipated timelines for power upgrades
- Key challenges and barriers to scaling power infrastructure
- The role of sustainability in power planning
- Confidence levels in existing infrastructure and forecasting tools

Total Respondents:

108

Collection Method:

Online questionnaire

Geography:

U.S.

Field Dates:

December 17, 2025–January 16, 2026

Number of Questions:

10

Organization Size:

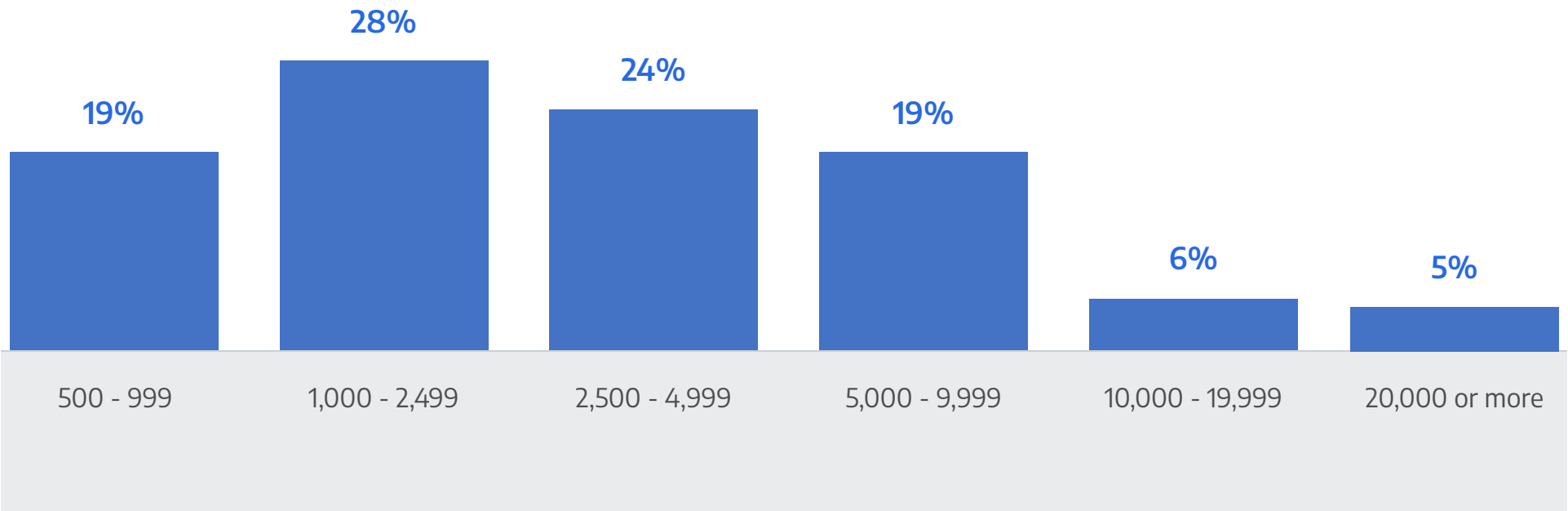
500 employees or more

Senior Decision-makers:

Respondents are Director-level and above and serve as primary decision makers or key influencers in data center power or infrastructure planning.

RESPONDENT PROFILE

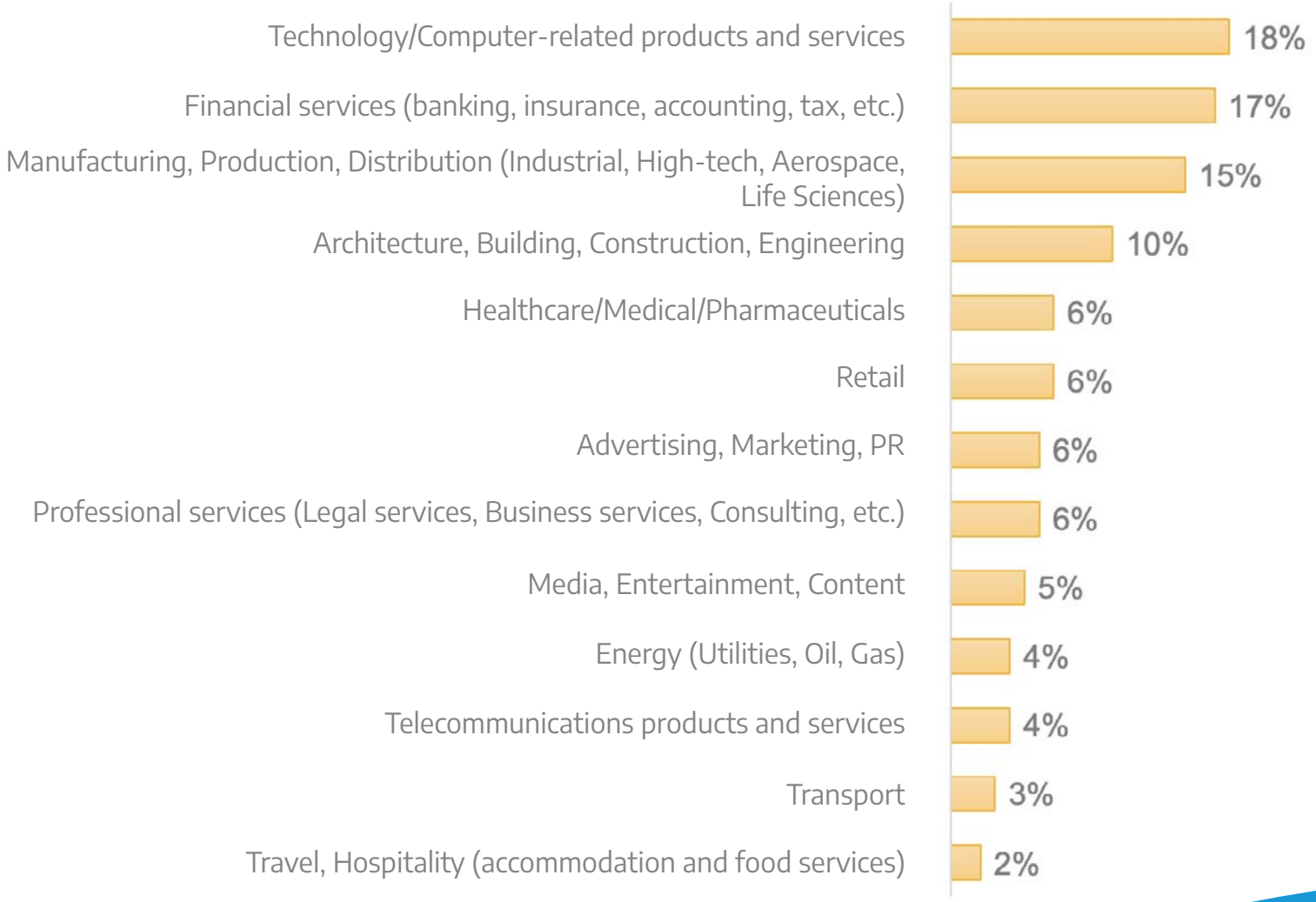
COMPANY SIZE BY NUMBER OF EMPLOYEES



S1: Approximately how many people are employed in your entire organization or enterprise? (Please include all plants, divisions, branches, parents, and subsidiaries worldwide.)

Base 108

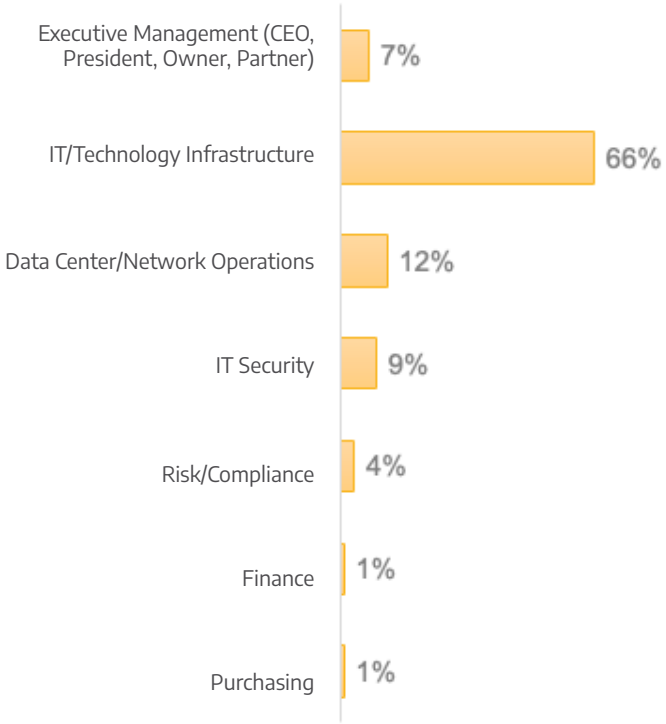
PRIMARY INDUSTRY

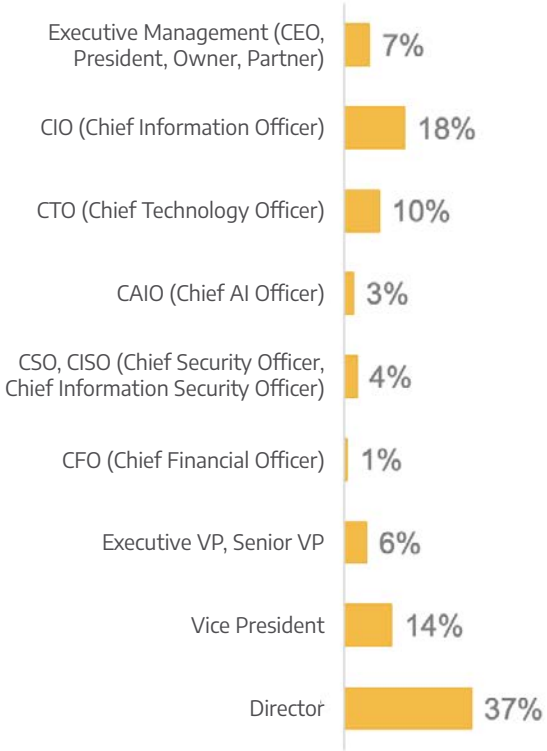


S5: Which of the following best describes your organization's industry or sector?

Base 108

JOB FUNCTION / JOB TITLES





S3: What is your primary job title?
S4: Which of the following best describes your primary job title?

Base 108

SUMMARY OF FINDINGS

SUMMARY OF FINDINGS

AI Is Widely Adopted

- Nearly all enterprises surveyed (97%) report AI workloads are already deployed in production environments.
    - More than one-third (36%) say AI is fully integrated into their operations, signaling a shift from pilots to mission-critical workloads.
- Generative AI (89%) and traditional machine learning/analytics (74%) dominate current AI deployments, underscoring the power intensity of today's AI use cases.

AI Is Rapidly Increasing Data Center Power Demand

- An overwhelming majority (87%) say AI workloads have moderately or significantly increased data center power consumption.
- Enterprises with fully integrated AI are far more likely to report a significant power impact (54% compared to 17% in the early stages of AI deployment), reinforcing the need for forward-looking power strategies.

Planning Is Underway, and Most Enterprises Expect Power Upgrades Soon

- Just over half (52%) report completing extensive power planning prior to deploying AI workloads, and 42% have done moderate planning (6% report minimal planning).
    - Planning rigor increases with AI maturity, suggesting experienced organizations recognize power as a key factor for AI success.
- More than three-quarters (77%) anticipate needing a data center power upgrade within two years due to AI.
    - Organizations with more mature AI deployments report even greater urgency, with 51% of this group indicating upgrades are anticipated within the next 12 months.

Scaling Power for AI Comes with Real Constraints

- In addition to budget constraints (66%), cooling requirements (65%) and regulatory compliance (55%) rank among the top barriers to scaling power infrastructure.
    - Organizations with high AI maturity are more likely to cite a lack of planning tools as a challenge (36% compared to 17% of those in the early stages of AI deployment), signaling growing complexity.

SUMMARY OF FINDINGS, CONTINUED

Sustainability Is a Core Requirement

- Nearly all respondents (93%) say environmental sustainability is important or very important in AI-related data center planning.
    - Importance increases with AI maturity, reinforcing sustainability as a long-term operational priority.
- However, just one-third (33%) report having a fully integrated sustainability strategy to manage AI-driven power usage, revealing an execution gap.

Confidence in Current Power Infrastructure Changes with AI Maturity

- Just over half (54%) say they are very confident that their current power infrastructure can support future AI expansion, and 36% are confident. Nine percent (9%) are somewhat confident and 1% are not at all confident.
- Confidence rises with AI maturity, suggesting experience and investment drive greater readiness (82% of those at fully mature organizations are very confident, compared to 17% of those at organizations just beginning to deploy AI).

Forecasting Tools Are Effective, Especially for AI Leaders

- A majority (53%) rate their current power forecasting tools as very effective, and 37% indicate their tools are effective. Ten percent (10%) report tools are somewhat effective.
- Effectiveness ratings are highest among organizations with fully integrated AI (74% rate forecasting tools as very effective, compared to 20% of those in early stages of AI deployment). This indicates accurate forecasting is perceived as a requirement for managing AI-driven power demand.

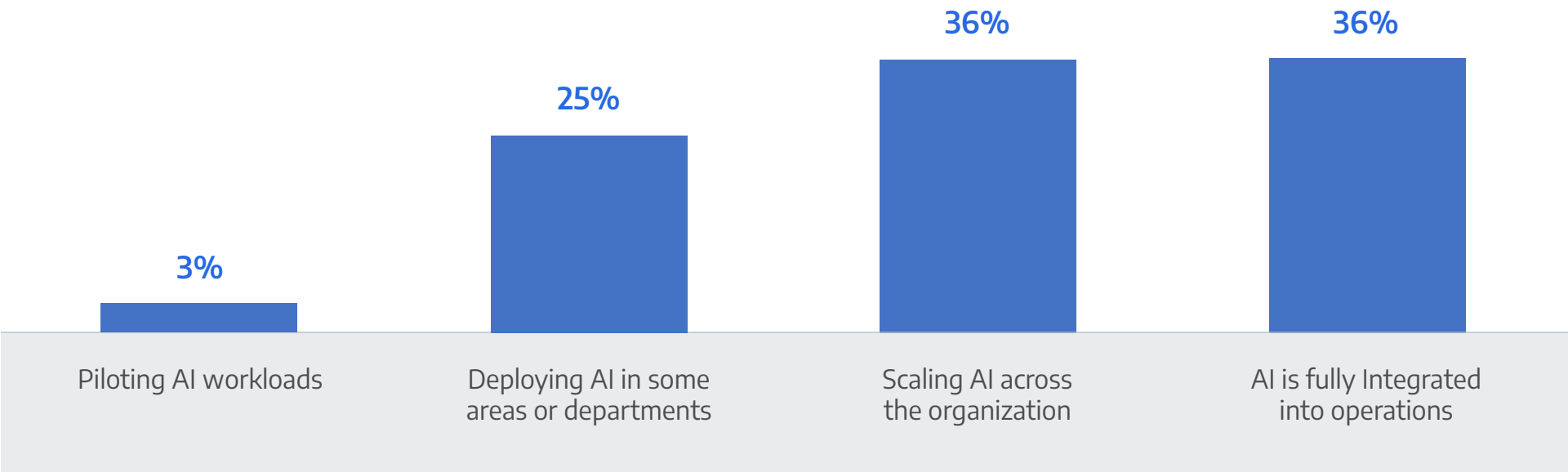
Reliability and Efficiency Lead Power Infrastructure Priorities

- Reliability (28% rank this as #1) and energy efficiency (22% rank as their top choice) are top priorities when planning power infrastructure for AI workloads.
- Among organizations actively scaling AI, energy efficiency surpasses reliability as the top concern (31% of those scaling AI deployments rank energy efficiency as #1, compared to 20% of those in early deployment stages and 15% of those who have fully integrated AI into operations.)
- This shift reflects growing pressure to balance performance and sustainability as AI scales.

SURVEY RESULTS

NEARLY ALL (97%) ARE DEPLOYING A.I. IN PRODUCTION; 36% REPORT A.I. IS FULLY INTEGRATED INTO OPERATIONS

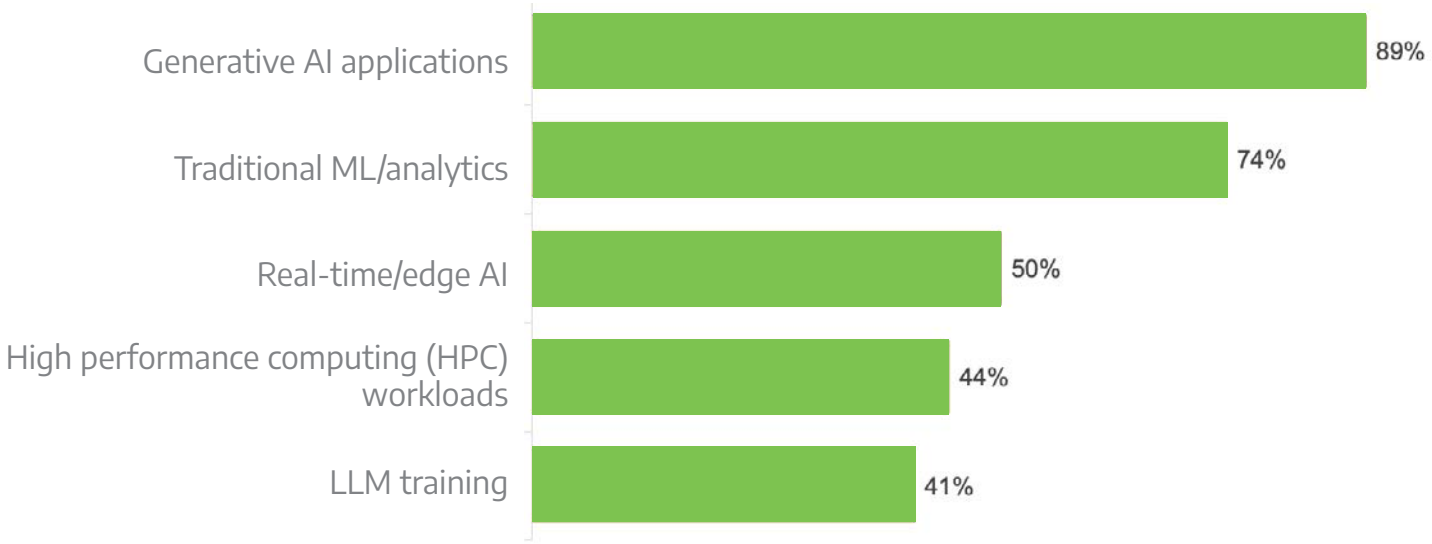
How would you describe your organization's adoption of AI workloads?



S6: How would you describe your organization's adoption of AI workloads?
Base 108

GEN A.I. AND TRADITIONAL MACHINE LEARNING / ANALYTICS ARE TOP A.I. WORKLOADS

Which types of AI workloads are currently deployed in your data centers?
(Select all that apply)

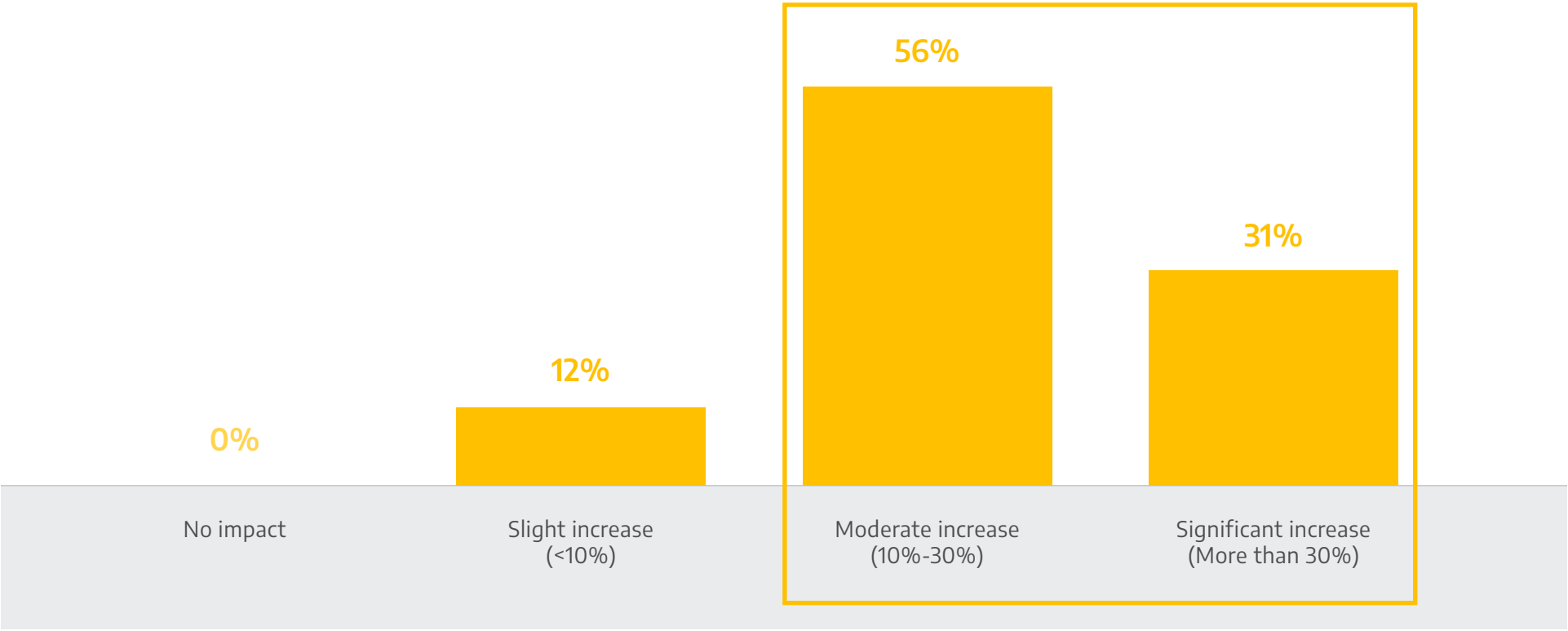


Question 1: Which types of AI workloads are currently deployed in your data centers? (Select all that apply)

Base 108

87% REPORT A.I. HAS MODERATELY OR SIGNIFICANTLY INCREASED POWER CONSUMPTION

What impact has AI had on your data center's power consumption?

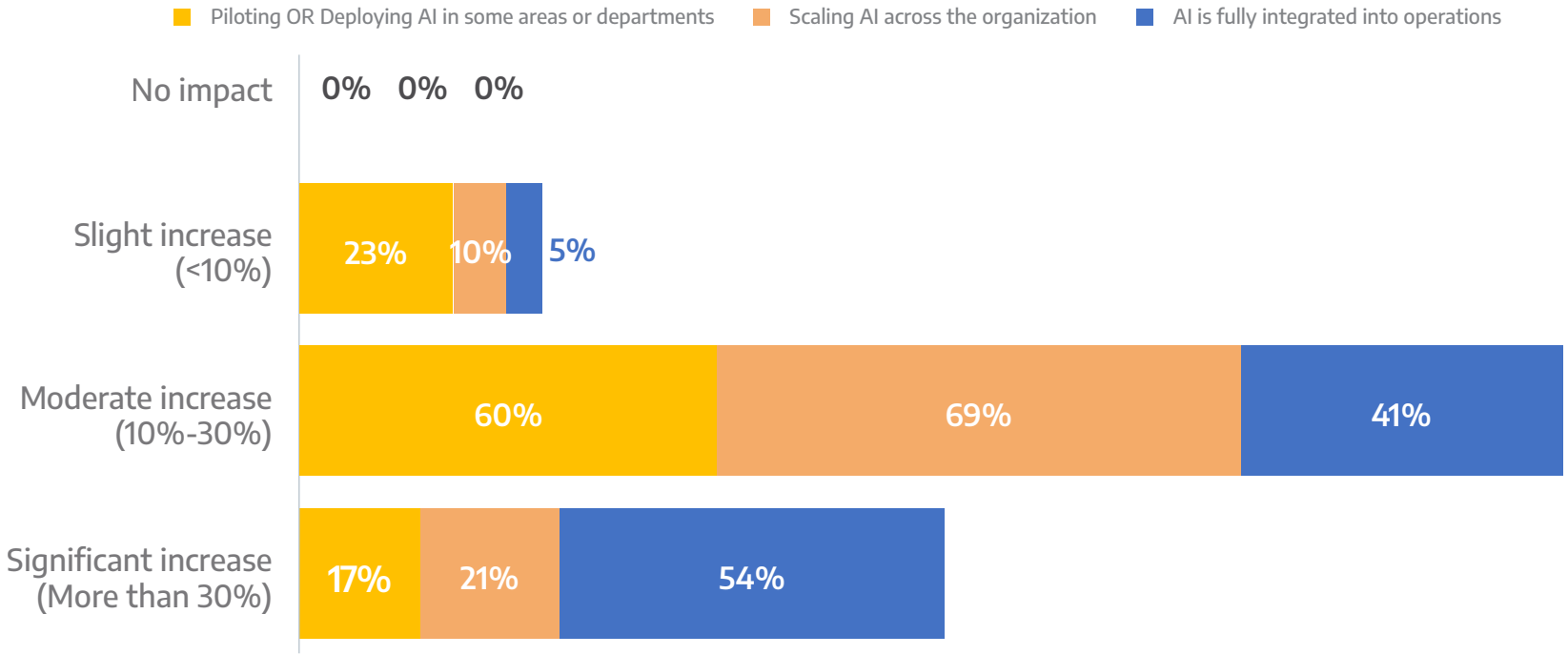


Question 2: What impact has AI had on your data center's power consumption?

Base 108

COMPANIES THAT HAVE FULLY INTEGRATED A.I. ARE MORE LIKELY TO REPORT A SIGNIFICANT IMPACT ON POWER CONSUMPTION

What impact has AI had on your data center's power consumption?

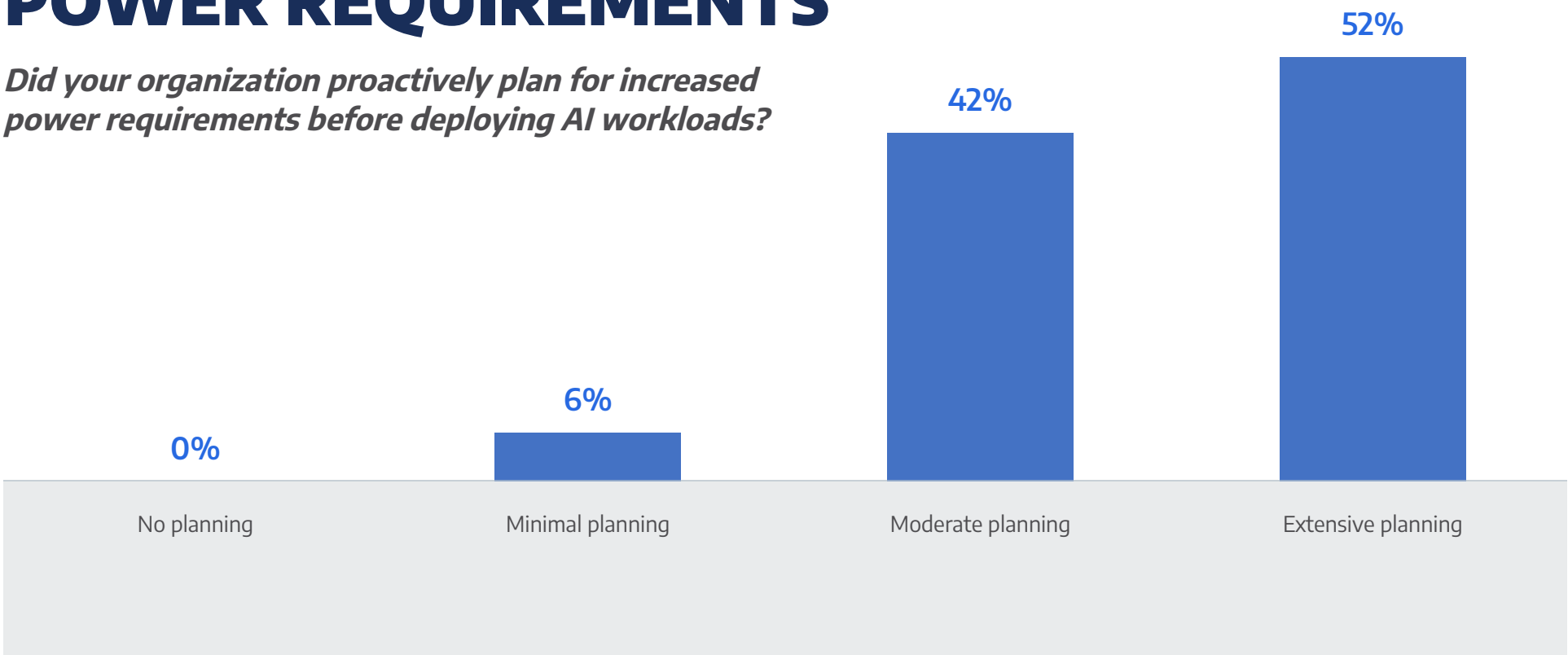


Question 2: What impact has AI had on your data center's power consumption?

Base: Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

MORE THAN HALF (52%) INDICATE EXTENSIVE PLANNING WAS COMPLETED AHEAD OF A.I. DEPLOYMENT TO ACCOMMODATE POWER REQUIREMENTS

Did your organization proactively plan for increased power requirements before deploying AI workloads?

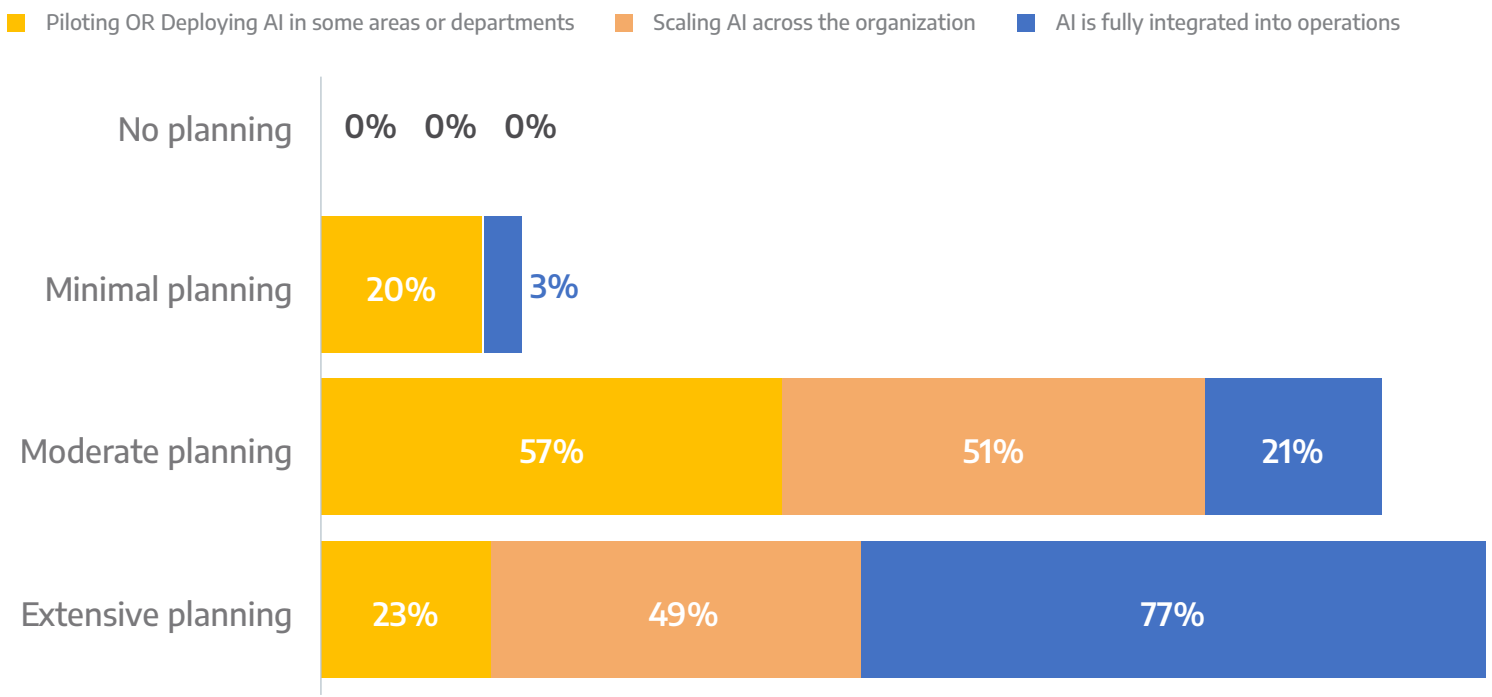


Question 3: Did your organization proactively plan for increased power requirements before deploying AI workloads?

Base 108

AS A.I. MATURITY INCREASES, SO DOES THE LIKELIHOOD THAT COMPANIES HAVE COMPLETED EXTENSIVE PLANNING FOR INCREASED POWER REQUIREMENTS

Did your organization proactively plan for increased power requirements before deploying AI workloads?

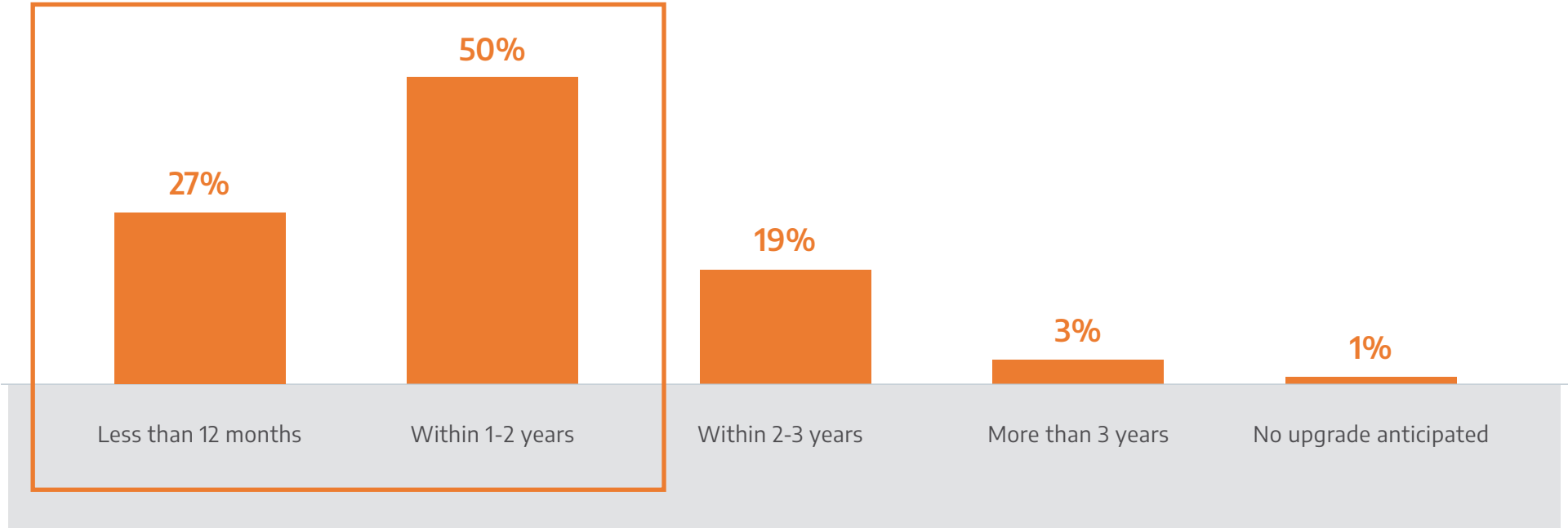


Question 3: Did your organization proactively plan for increased power requirements before deploying AI workloads?

Base Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

MORE THAN THREE-QUARTERS (77%) ANTICIPATE A DATA CENTER POWER UPGRADE WILL BE NECESSARY WITHIN 2 YEARS TO ACCOMMODATE A.I. DEPLOYMENTS

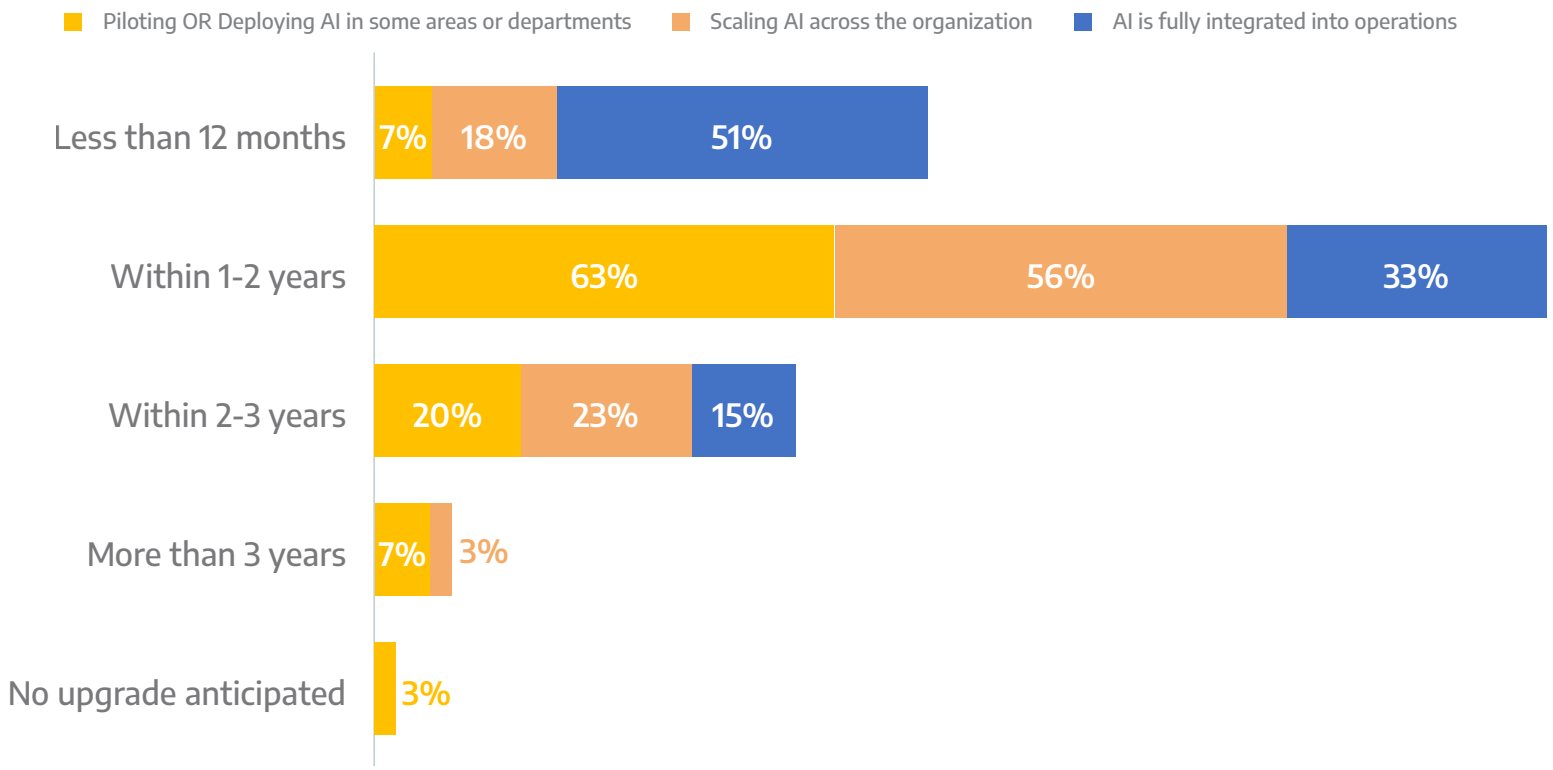
How soon do you anticipate needing a data center power upgrade due to AI?



Question 4: How soon do you anticipate needing a data center power upgrade due to AI?
Base 108

AS A.I. BECOMES MORE EMBEDDED IN OPERATIONS, THE URGENCY TO UPGRADE DATA CENTER POWER CAPACITY ACCELERATES

How soon do you anticipate needing a data center power upgrade due to AI?

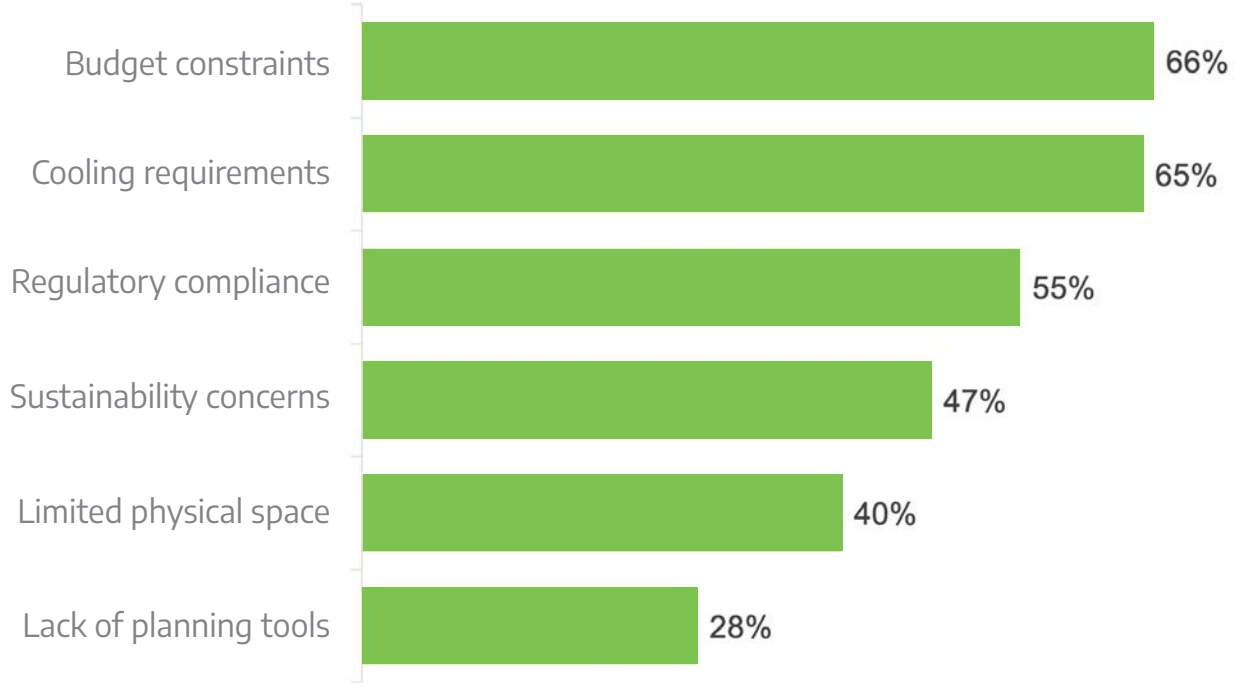


Question 4: How soon do you anticipate needing a data center power upgrade due to AI?

Base: Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

ASIDE FROM BUDGET, COOLING REQUIREMENTS AND REGULATORY COMPLIANCE ARE TOP BARRIERS TO SCALING POWER INFRASTRUCTURE FOR A.I. WORKLOADS

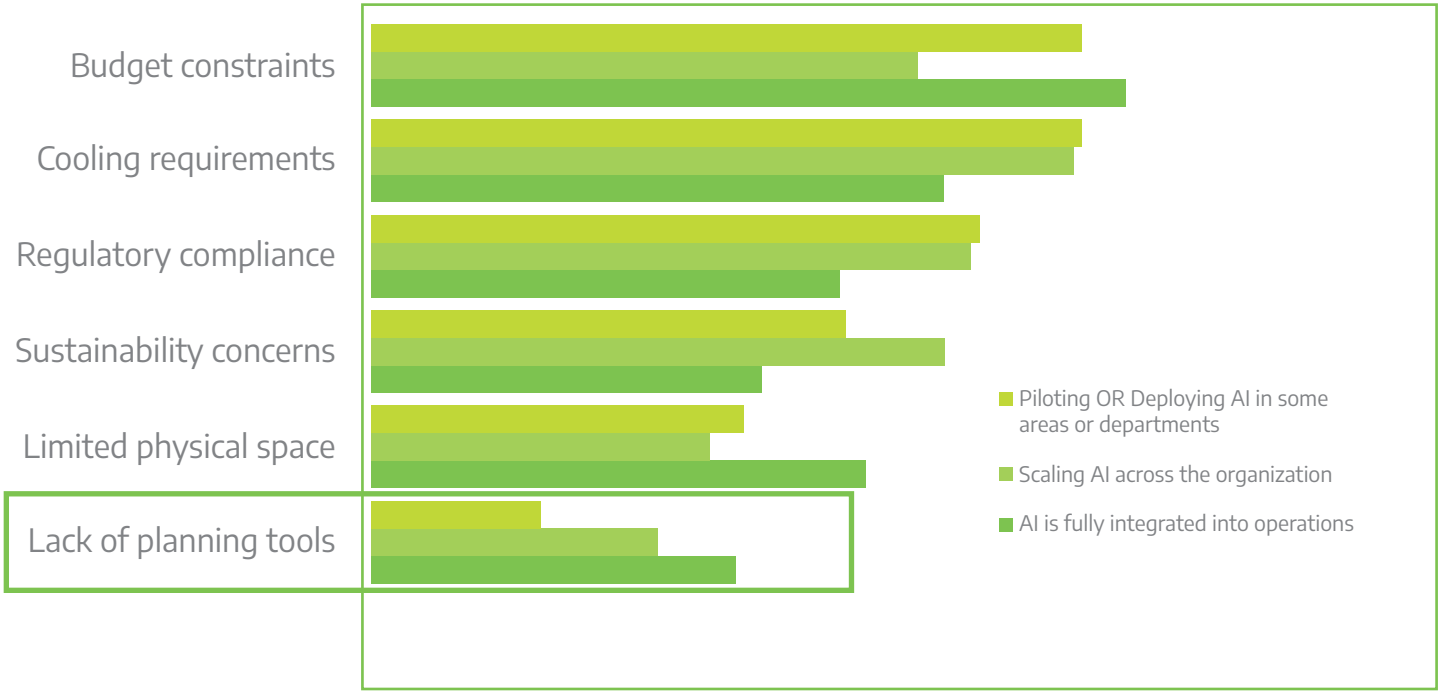
What have been the biggest barriers/challenges to scaling power infrastructure for AI workloads?
(Select the top 3)



Question 5: What have been the biggest barriers/challenges to scaling power infrastructure for AI workloads?
Base 108

THOSE AT COMPANIES WITH HIGH A.I. MATURITY ARE MORE LIKELY TO CITE A LACK OF PLANNING TOOLS AS A CHALLENGE WHEN SCALING POWER INFRASTRUCTURE

What have been the biggest barriers/challenges to scaling power infrastructure for AI workloads?
(Select the top 3)

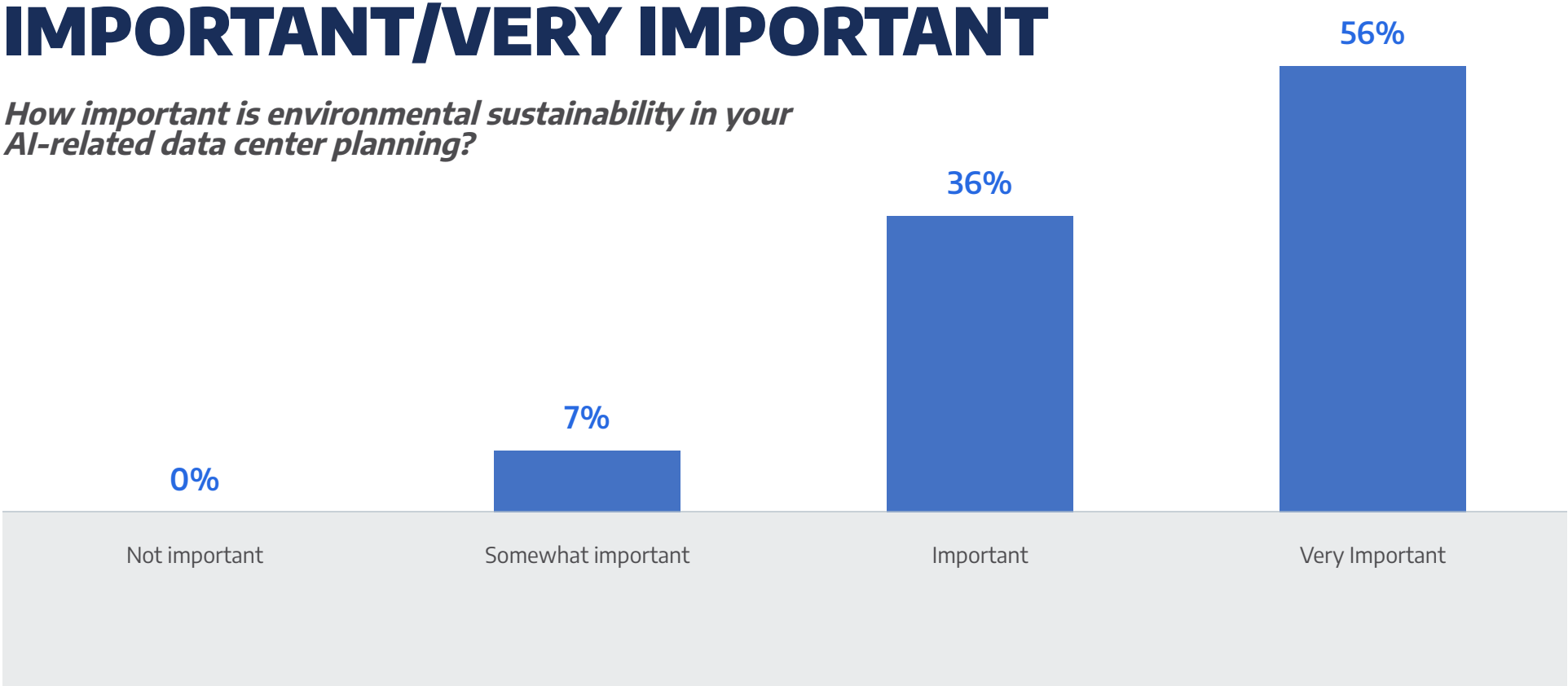


Question 5: What have been the biggest barriers/challenges to scaling power infrastructure for AI workloads?

Base: Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

NINE IN TEN (93%) CONSIDER ENVIRONMENTAL SUSTAINABILITY IN A.I.-RELATED DATA CENTER PLANNING TO BE IMPORTANT/VERY IMPORTANT

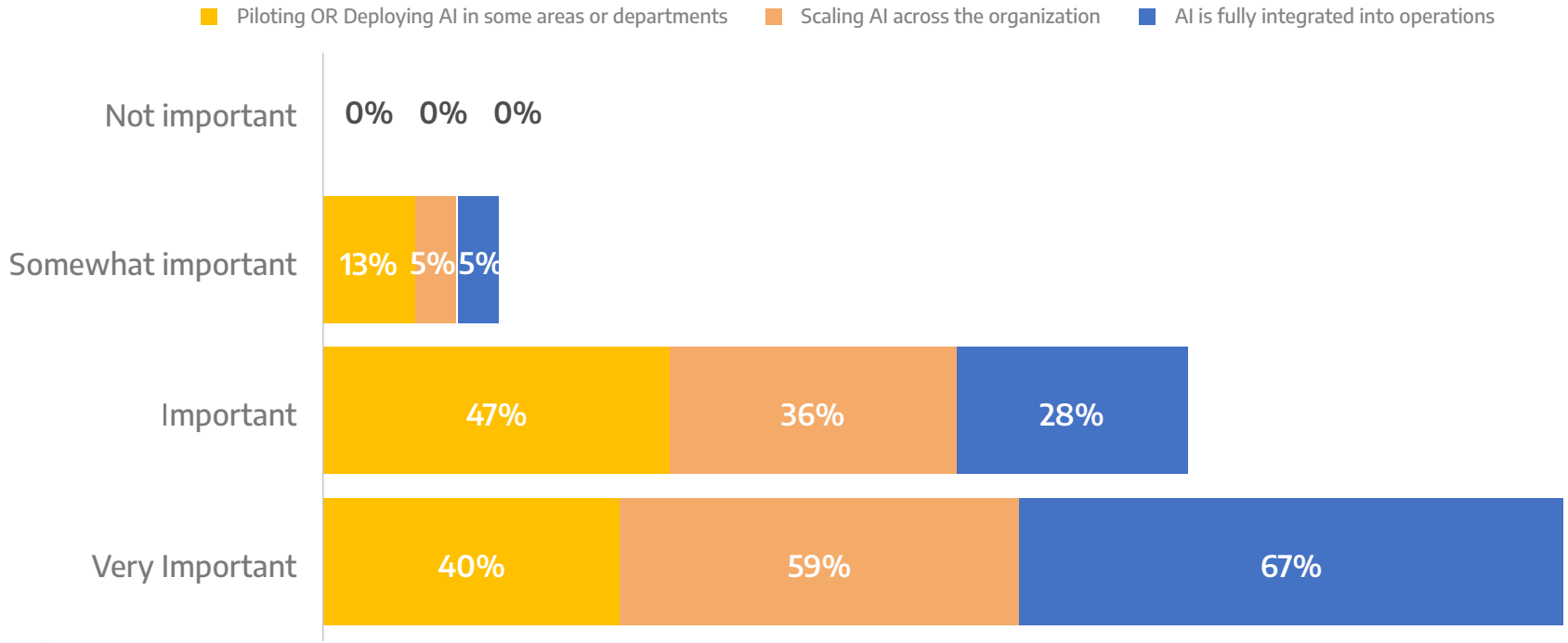
How important is environmental sustainability in your AI-related data center planning?



Question 6: How important is environmental sustainability in your AI-related data center planning?
Base 108

ALL ORGANIZATIONS CONSIDER SUSTAINABILITY IMPORTANT TO A.I.-RELATED DATA CENTER PLANNING; IMPORTANCE INCREASES WITH A.I. MATURITY

How important is environmental sustainability in your AI-related data center planning?

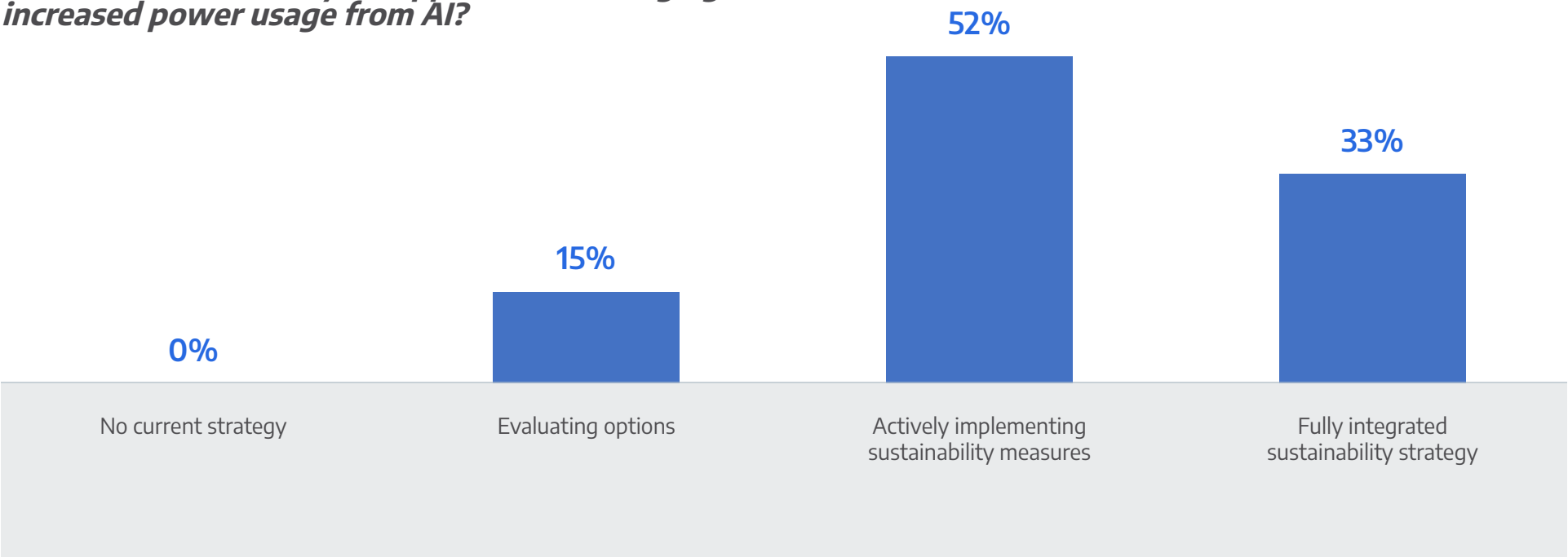


Question 6: How important is environmental sustainability in your AI-related data center planning?

Base Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

JUST ONE-THIRD (33%) REPORT HAVING A FULLY INTEGRATED SUSTAINABILITY STRATEGY TO MANAGE INCREASED POWER USAGE FROM A.I.

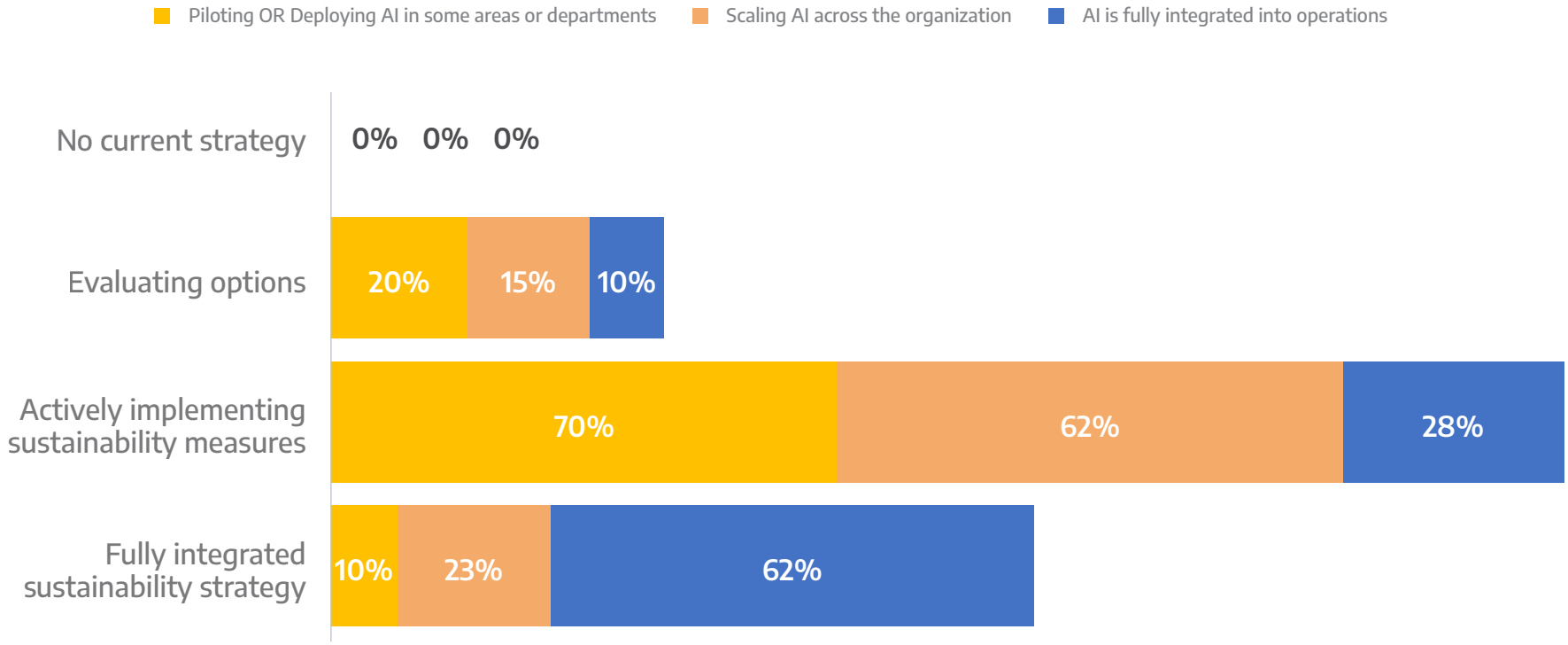
Which best describes your approach to managing increased power usage from AI?



Question 7: Which best describes your approach to managing increased power usage from AI?
Base 108

WITH A.I. MATURITY COMES THE INCREASING LIKELIHOOD TO HAVE A FULLY INTEGRATED SUSTAINABILITY STRATEGY

Which best describes your approach to managing increased power usage from AI?

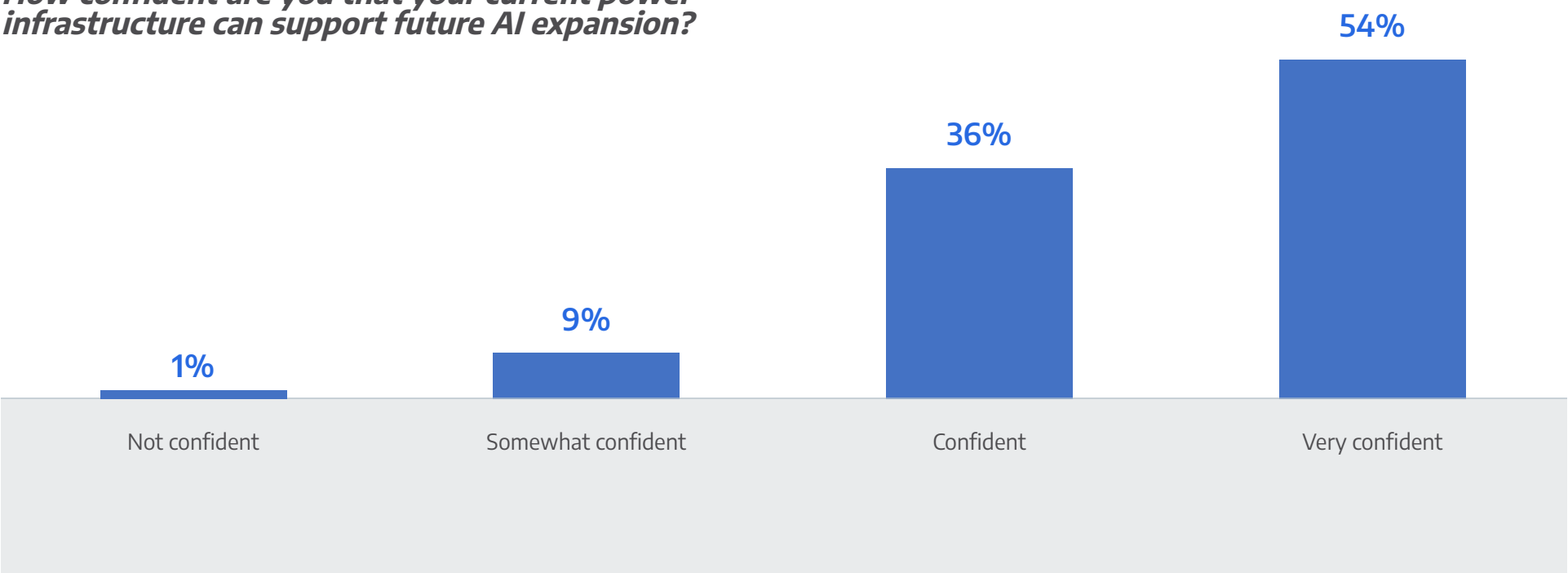


Question 7: Which best describes your approach to managing increased power usage from AI?

Base Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

JUST OVER ONE-HALF (54%) ARE HIGHLY CONFIDENT IN THEIR CURRENT POWER INFRASTRUCTURE TO SUPPORT FUTURE A.I. EXPANSION

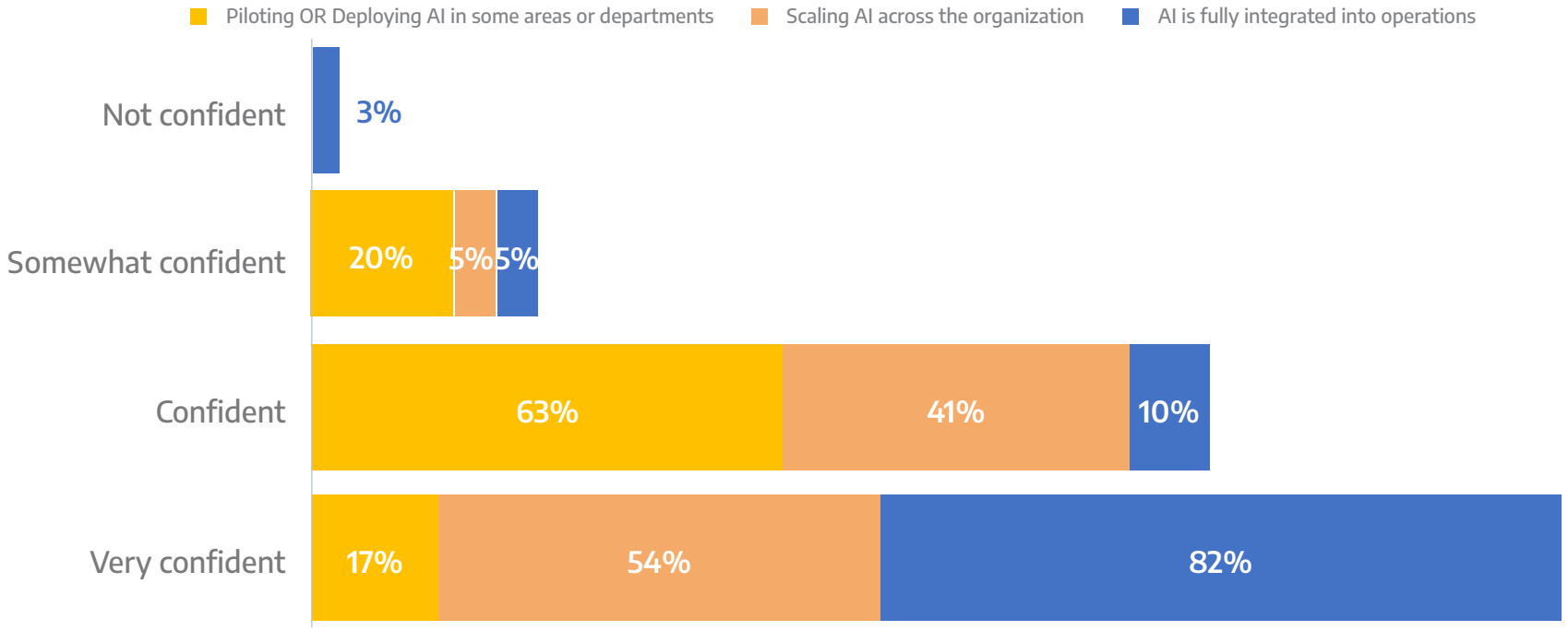
How confident are you that your current power infrastructure can support future AI expansion?



Question 8: How confident are you that your current power infrastructure can support future AI expansion?
Base 108

THOSE AT COMPANIES WITH HIGH A.I. MATURITY ARE MORE LIKELY TO BE VERY CONFIDENT IN THEIR CURRENT POWER INFRASTRUCTURE GOING FORWARD

How confident are you that your current power infrastructure can support future AI expansion?

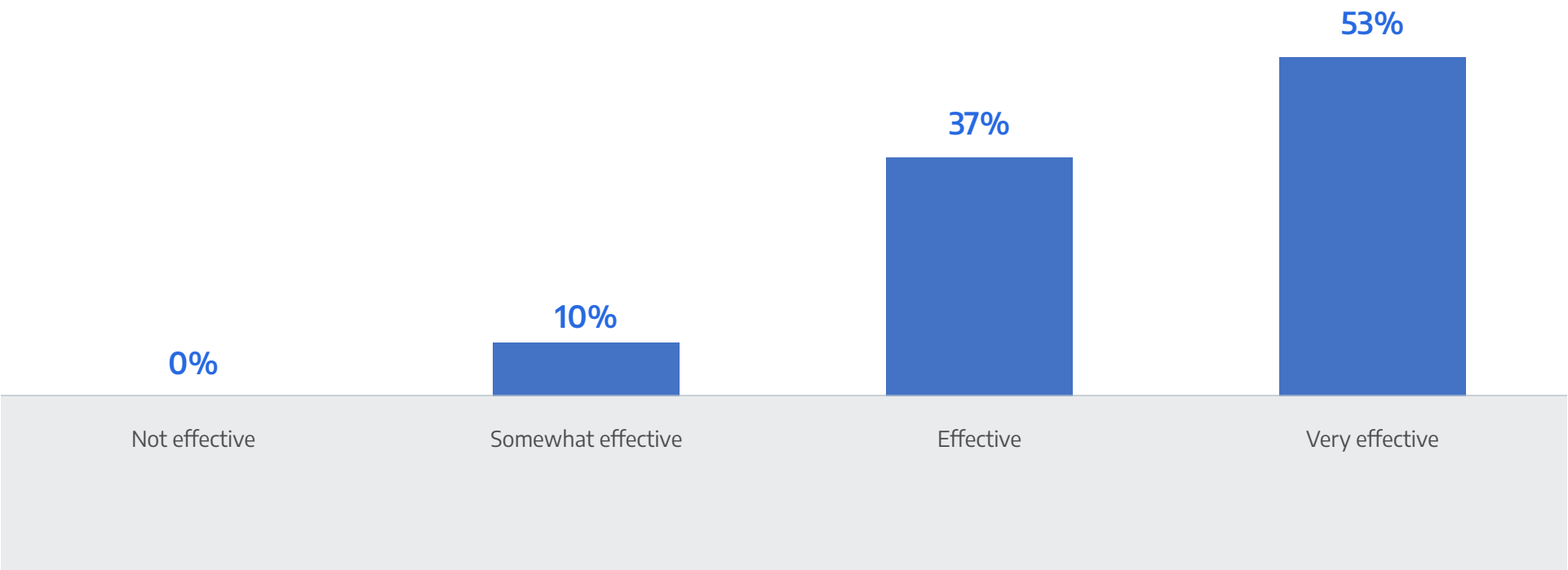


Question 8: How confident are you that your current power infrastructure can support future AI expansion?

Base Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

MORE THAN HALF (53%) CONSIDER CURRENT TOOLS AND METHODS TO BE VERY EFFECTIVE IN FORECASTING POWER NEEDS FOR A.I.

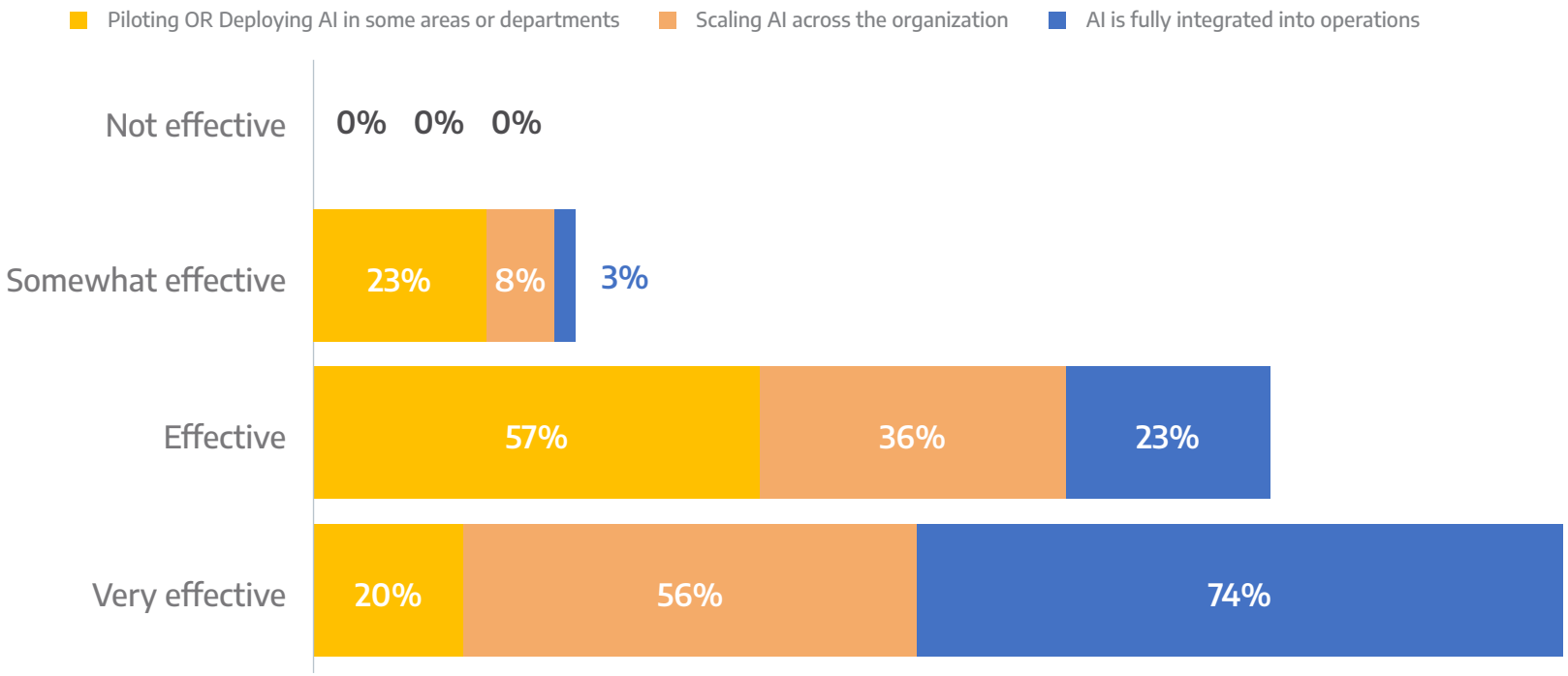
How effective are your current tools/methods for forecasting power needs for AI?



Question 9: How effective are your current tools/methods for forecasting power needs for AI?
Base 108

HIGH EFFECTIVENESS RATINGS FOR CURRENT POWER FORECASTING TOOLS AND METHODS CORRELATE WITH GREATER A.I. MATURITY

How effective are your current tools/methods for forecasting power needs for AI?

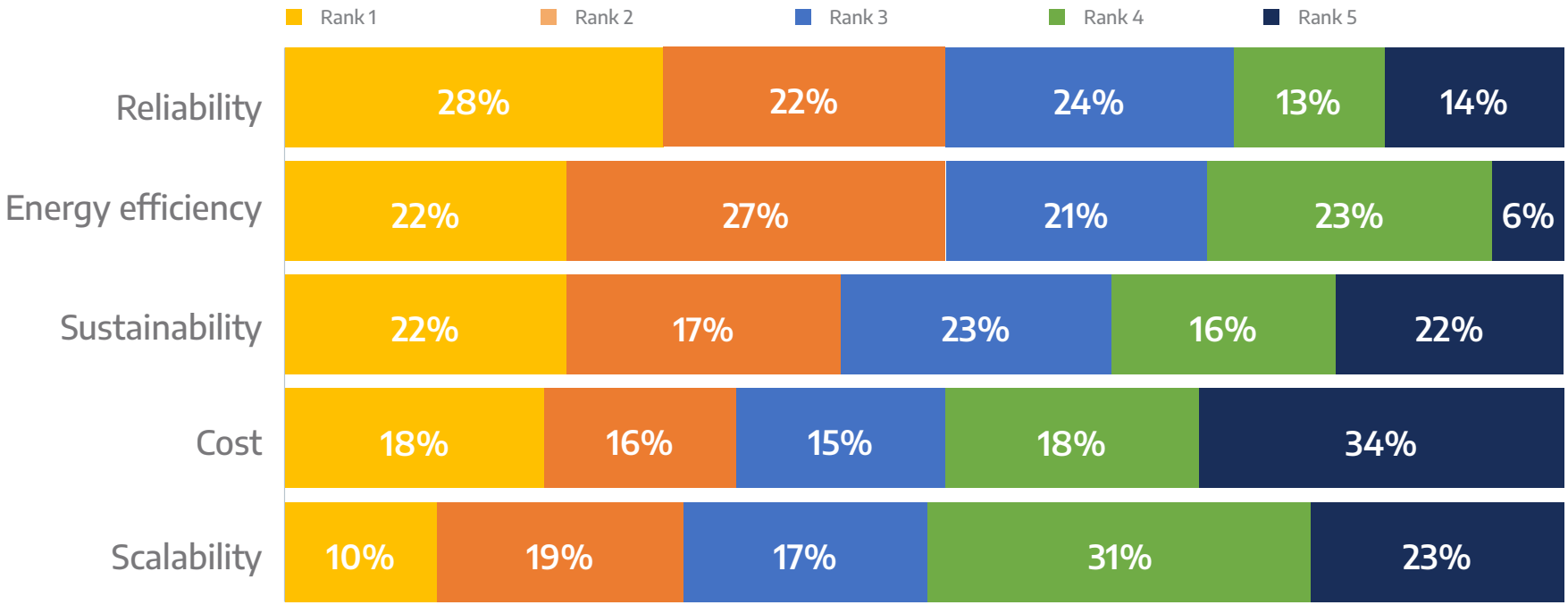


Question 9: How effective are your current tools/methods for forecasting power needs for AI?

Base Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

RELIABILITY AND ENERGY EFFICIENCY ARE TOP PRIORITIES WHEN PLANNING POWER INFRASTRUCTURE TO SUPPORT A.I. WORKLOADS

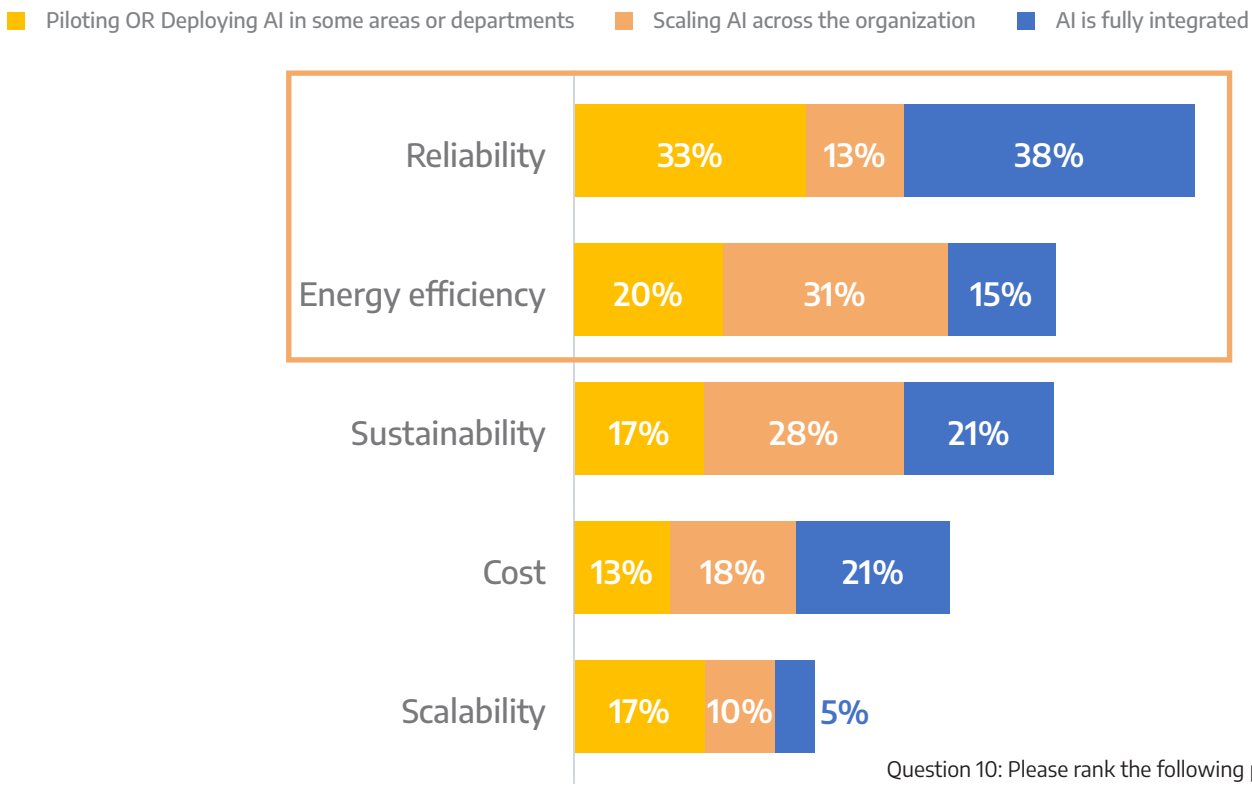
Please rank the following priorities when planning power infrastructure for AI workloads.
(1 = highest priority, 5 = lowest priority)



Question 10: Please rank the following priorities when planning power infrastructure for AI workloads (1 = highest priority, 5 = lowest priority)?
Base 108

ENERGY EFFICIENCY SURPASSES RELIABILITY AS THE TOP POWER INFRASTRUCTURE PRIORITY AMONG THOSE CURRENTLY SCALING A.I. ACROSS THE ORGANIZATION

Please rank the following priorities when planning power infrastructure for AI workloads.
(% Ranking as #1)



Question 10: Please rank the following priorities when planning power infrastructure for AI workloads (1 = highest priority, 5 = lowest priority)?

Base: Piloting OR Deploying AI in some areas or departments: 30; Scaling AI across the organization: 39; AI is fully integrated into operations: 39

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