Leading the energy transition

Using positions of influence to align organizations and systems with the global sustainability context

HFS Research in partnership with Infosys

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PRESENTED BY:

Josh Matthews | Chief Sustainability Officer and Practice Leader

Summarizing the desperate state of the energy transition

HFS Research, in partnership with Infosys, reached out to over 300 energy transition leaders across geographies, industries, roles, company sizes, and more. We also interviewed a series of these leaders in depth. Some of the key findings include:

44%

Admit to being in a well-meaning, waiting, or greenwashing phase of the energy transition.

But worse…

71%

C-level executives admit to the same well-meaning, waiting, or greenwashing.

26%

Think their CEOs support the organization's energy transition efforts.

But possibly worst of all, only…

44%

Said they collaborate with others in their own organizations on the energy transition. The percentages drop continuously when considering a range of ecosystem (potential) partners.

Whereas…

82%

Of $50 billion-plus firms are set to increase their energy transition spending. Fifty-two percent (52%) of these same firms expect a large increase in business performance from the transition. There's hope for systemic change.

“

The energy transition is moving forward, and the biggest firms want to play the systems-changing role we need. But there is so much left to do—both in triggering that systems change and in implementing business models, technologies, and processes.

Collaboration will be essential—internally and throughout ecosystems—but needs to find a new level. Senior industry leadership must ultimately drive the energy transition by cascading roadmaps through their organizations.

The climate and sustainability emergency means that the energy transition holds a massive opportunity and responsibility for the bravest people and companies.

Josh Matthews | Chief Sustainability Officer and Practice Leader, HFS Research

Contents

Executive summary: Energy transition leadership

The energy transition from fossil fuels to renewable and other decarbonized sources is happening. It touches every organization, every industry, every government, and the global sustainability context underpinned by 17 UN Sustainable Development Goals (SDGs), each with roadmaps, covering all decarbonization, environmental, social, and governance (ESG) factors. HFS Research, in partnership with Infosys, reached out to more than 300 energy transition leaders across geographies, industries, roles, company sizes, and more. We also interviewed a series of these leaders in depth. Given the reality that policy and the public won't move at the speed and systems level sustainability demands, business holds the last levers. From the center, business must unapologetically move to change these systems. The energy transition holds major responsibility and opportunity.

1 Executives must severely step up their leadership, support, and roadmapping

- Fifty-six percent (56%) of organizations see themselves in a "roadmapping" or "reinventing" phase of the energy transition. That leaves 44% not acting, but we wager that the real number is higher.
- Seventy-one (71%) of C-level executives admit their organizations aren't acting. Forty percent (40%) admit to waiting for other organizations to lead or for regulations to force them to move.
- Only 40% of organizations have a dedicated sustainability leader. But worse, only 26% of the leaders we surveyed think their CEOs support their organization's energy transition efforts. This level of CEO support resembles our data from 2021 leading up to COP26, the UN climate summit. Things aren't changing.
- Leading utilities firms show more progress on roadmapping and disclosure—driven by local control and the confidence many struggle to reach. Oil and gas remain constrained by geopolitics and lacking mandates.

2 Alignment and collaboration are lacking internally and throughout ecosystems

- There remains a wide disconnect across organizations. The energy transition and all sustainability factors must cascade from top-level strategies throughout all functions. This has not changed since 2021's COP26.
- Collaboration levels are dire internally in organizations and throughout ecosystems of value chain and broader global partners—made more worrying given the systems-level nature of the energy transition and its effect throughout entire organizations. Only 44% collaborate with others in their organization on energy transition efforts… it's worse with any and all ecosystem players.
- Many functional leaders are ignoring their role in the transition—but mandates will come from senior leadership. Goals and strategies will eventually be translated through organizations into metrics, targets, accountability, and incentives. Functional leaders must be ready and drive the conversation upward.
- Unsurprisingly, alignment and collaboration are the biggest barriers to the energy transition, whether internal or external. Others include culture, customer demand, business cases, and lacking regulations.

Executive summary: Energy transition investment

3 Seeing the positive impacts of the energy transition, investment is coming across consulting, technology, and broad business services

- Our separate market analysis shows the demand for sustainability services soaring 240% over the next two years, soon approaching $200 billion.
- Ninety-four percent (94%) of energy and utilities execs expect to increase their IT spending. IoT (internet of things) technology tops the tree across the energy and utilities industries and for the energy transition specifically.
- Eighty-two percent (82%) of the largest $50 billion+ firms expect an increase in energy transition spending. Improving performance, efficiency, environmental impact, industry dynamics, and the pandemic's evolution drive this spending.
- Seventy-three percent (73%) see the energy transition as a top-three organizational priority. Most see the energy transition as having a positive business effect. Fifty-four percent (54%) of the biggest firms expect a significant improvement in overall business performance. Firms also see expected increases in regulations as a positive.

4 Digital technology is led by cloud, digital twins, and IoT, but hampered by the usual data challenges

- As grids transition, digital twins and combinations of IoT, smart meters, analytics, and AI are growing, driven by utilities majors in search of flexibility and more complex management of renewable energy systems and customer demands. The same applies to asset management, whether a grid, oil rig, or wind turbine.
- But data remains a challenge—specifically, sourcing, standardizing, and analyzing it in real-time. Cloud places highly in upcoming investment plans on the energy transition alongside IoT, but broadly, spending is coming across the technology spectrum.
- SASB, GRI, and Dow Jones are the standards top of use and mind. At 24% of respondents, US firms are worryingly unaligned to the SEC disclosure proposals, as are European firms considering the EU Green Taxonomy at 20%.
- There's a big mix of technology solutions in play and in mind for the energy transition: enterprise-level platforms, in-house developments, and specialist software. Firms are hedging their bets given the lack of best practices and standards for technology or disclosure.
- We severely lack technology, regulation, standards, best practices, visibility, and data. Our survey respondents weren't positive on any front. The bottom line is that there's so much work to do.

Executive summary: Energy transition systems

5 Overcoming political failure is in the hands of businesses and their leaders

- Policymaking and the public will not move quickly enough to address the climate crisis or the global sustainability context. The last strands of optimism from COP26 that this could change have gone. COP27 did nothing to change that, but that might be the most crucial realization in solving sustainability. It gives businesses clarity—precisely, clarity to the right people, in the right organizations, in the right rooms.
- The only levers we have left that can achieve the systems-level dynamics and speed of change we need to limit climate change and progress toward the 17 UN Sustainable Development Goals—while pulling policy and the public along—are now in the hands of business. This applies in spades to the energy transition.
- The reality staring businesses in the face is that regulation and a critical mass of public pressure will come. No one knows when. Heaven forbid it takes something so much more disastrous than anything we've seen before to trigger that change. It's better to be ahead and part of the movement that sets that regulation—whether kneejerk or gradual—rather than frantically reacting to catch up.

6 The energy transition and all sustainability must be contextualized for organizations, governments, and the public

- Sustainability must include the entire global context: 17 UN Sustainable Development Goals (SDGs), each underpinned by roadmaps covering all environmental, social, and governance (ESG) factors. The energy transition runs through all SDGs and ESGs—emissions, biodiversity, waste, water, labor practices, human rights, cybersecurity, and resilience. (See page 8 and our outline for more information.)
- Too often, however, energy transition efforts lack context for organizations, governments, and the public. They seldom align with the global picture and the long list of achievable sustainability and business outcomes. Connecting energy transition efforts to organizational-level strategies and all sustainability goals requires clarity of what the transition means, why it matters, and how it is measured.

Voice of the industry: Highlights of our conversations across the energy transition

A large US energy firm | Its Principal Advisor for Environmental and Energy Technologies

Real-time emissions data is still lacking—it's not about the end platform. Value chain transparency is a real battle. And there's a struggle for a market mandate, regulation, and clarity on future technology roadmaps. Entire energy supply chains lack mandates and regulations on technology and standards. However, pressure from stakeholders means firms must move and remain open to pivoting. Scope 3 targets aren't on the US horizon. The lack of standardization also applies to digital technologies and platforms. Water management and ensuring a just transition are prevalent—but circularity is less so. Like electricity decarbonizing, there's an expectation others will do it.

A top-tier European utility | Its Vice President for Energy Networks, Digital, and IT

The utilities industry is more progressive and easier to transition. For digital, the industry is going big on IoT, digital twins, and smart meters, but all digital technology will receive investment. Roadmaps are mature, as is culture. There's confidence in the direction of European regulation. This firm closely collaborates with peers, competitors, industry partners, regulators, and local authorities. It plans increases in investment in tech, services, and co-developed solutions across the value chain. Enterprise asset management and predictive maintenance see technology emphasis. But still, many of the adages come up, such as IT/OT convergence and cybersecurity. Biodiversity and all SDGs are becoming integral to the industry.

A global European oil and gas major | Its General Manager for Digital Innovation and Technology

The desire to collaborate and be transparent remains only a desire. The largest oil and gas firms have yet to figure out business models for the energy transition that can be made public. The opportunity for leadership continues to go untaken—as does the opportunity for transparency and disclosure of what the industry still needs help with to give trustworthiness to the investment and innovation it is pushing. Digital technology sees an "all of the above" approach. As part of its energy transition roadmap under construction, customer collaboration is front of mind, including how they can be helped to transition (addressing Scope 3 impact, which European energy firms continue to lead on versus the US supermajors).

A US transmission and distribution utility | Its CIO

Contextualizing the energy transition with regulators and customers is its biggest battle. Huge physical and digital technology investments are forthcoming to build infrastructure. As a transmission and distribution (T&D) firm, the sustainability role is as a facilitator. Grid automation is now table stakes—more ambitious technology across grid, asset, and systems management is the view, as is a private fiber backbone. Industry and transition momentum are unlikely to be stopped by politics. It wants to do too much around the energy transition and is burning itself out—a huge opportunity for its ecosystem partners to help.

A large energy and utilities technology firm | Its Head of Investment for the Americas

Focus on local expertise with services partners for regulations, languages, and business insight. Opportunities are soaring across a range of geographies—but they're all very different from business and regulatory standpoints. Combinations of ongoing energy transition work and newer geopolitics events and trends are affecting and redefining the company's investments and roadmap. There's a connected company roadmap and more appetite for risk with confidence built on future markets and business. Hydrogen and batteries are focus areas, as well as decentralized and digital grids.

A large US transport firm | Its Director of Strategy

Organizations still need materiality and context—this firm is working on a way to integrate the whole global sustainability context with its energy transition plans in the transport sector. The energy transition is yet to penetrate the IT and digital teams. Balancing customer demands for sustainability with constraints like cost remains challenging. Disconnects remain throughout the organization and industry—roadmaps don't yet cascade. The US Inflation Reduction Act (IRA) is a boost for physical and digital infrastructure investment for electrifying transport networks, which is sorely lacking.

Framing the energy transition: It cascades throughout the whole global sustainability context

Breaking down the global sustainability context across systems and throughout organizations (see more in our detailed outline)

The global sustainability context									
17 UN Sustainable Development Goals (SDGs)									
ESG									
Decarbonization		**Environmental**		**Social**		**Governance**			
• Goal setting • Footprint measurement • Benchmarking • Ongoing measuring and monitoring • Visualization • Reporting • Decision making • Roadmapping and delivering on emissions reductions		• Biodiversity on land • Biodiversity in water • Water usage and sanitation • Affordable and clean energy • Other resource usage • Waste reduction • Circular economy • Responsible production and consumption • Spills and leaks		• Diversity, equality, and inclusion • Education • Human rights • No poverty and zero hunger • Quality work and economic growth • Labor practices and zero modern slavery • Corporate outreach and CSR • Talent development • Impact on communities • Health and safety		• Risk • Resilience • Corporate management • Disclosure • Financial performance • Partnerships • Peace, justice, and institutions	
Geopolitics									
Conflict | Economics | Politics | Health | Cybersecurity | Aging populations | Developing countries | Poverty | Security | Migration | Law and order | Technology | Business | Culture									
Industry dynamics									
Financial services & insurance	Energy and utilities	Retail and CPG	Manufacturing and chemicals	Infrastructure and construction	Travel, hospitality, and logistics	Healthcare	Pharma and life sciences	Agriculture	Telecom, media, and technology
Leading organizations driving collaboration and alignment across their industries, regions, and entire ecosystems									
Organizational-level roadmap and business model									
CEO or board		Sustainability leader		Customers		Investors and shareholders		Ecosystem and supply chain partners	
Organizational functions and domain-level roadmaps									
Finance	Operations	Procurement	Supply chain	IT	Cybersecurity	HR	R&D	Sales	Marketing
Digital and physical technologies and business processes									

To lead the energy transition, you must be clear on addressing your internal, client, and ecosystem sustainability

Organizations must meticulously detail how they can and will address the entire global sustainability context on the three key fronts. See more in our recent report, where we illustrate this in relation to finance and all manner of services firms.

Internal sustainability

Organizations must address their internal sustainability by aligning their actions and plans to the global context of decarbonizing by reducing emissions to zero (or worst case, net-zero) by 2050 at the absolute latest, as well as addressing all other environmental, social, and governance (ESG) factors underpinning the 17 UN Sustainable Development Goals (SDGs)—which are based on roadmaps and tangible actions.

Sustainability for customers

Organizations must position their products, services, and everything else related to their client engagements under the global sustainability context (see above). They must also identify where they can help their clients address their own sustainability. The same goes for suppliers and partners elsewhere in supply chains and ecosystems (see below).

Ecosystem leadership

Organizations and coalitions with the greatest influence over their ecosystems must move first, prove that the commercial models work, and publicly disclose their transition plans. They must work across businesses large and small, industries, regulators, governments, academia, NGOs, and others.

1

Study summary: Demographics, roles, and responsibilities

Study summary

HFS Research, in partnership with Infosys, reached out to more than 300 energy transition leaders across geographies, industries, roles, company sizes and more. We also interviewed a series of these leaders in depth (see page 7).

313
Senior energy transition leaders surveyed

$500M - $50B+
Range of company sizes

9
Major industry groups, including energy, utilities, OEMs, EPC, and mining

6
Continents

19
Countries

C-level to director
Five seniority levels

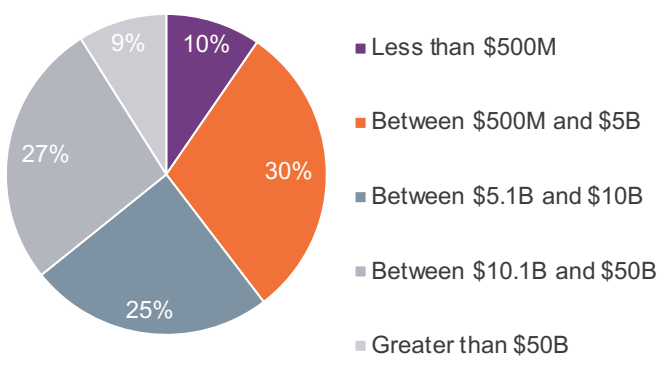
8
Business functions

Even
Split between leaders primarily, partially, and emergingly focused on the energy transition

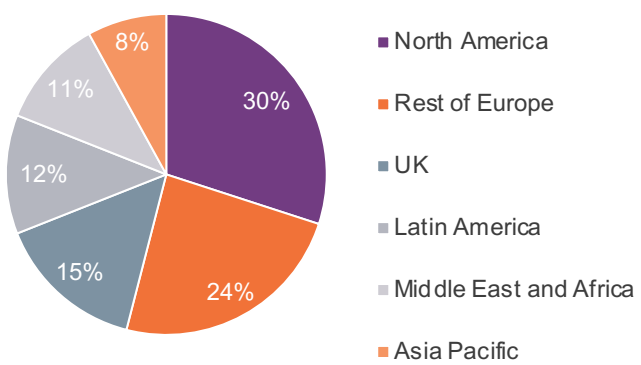
83%, 50%, 39%
Energy transition leaders focused on environmental, social, and governance (ESG) factors respectively

Study demographics

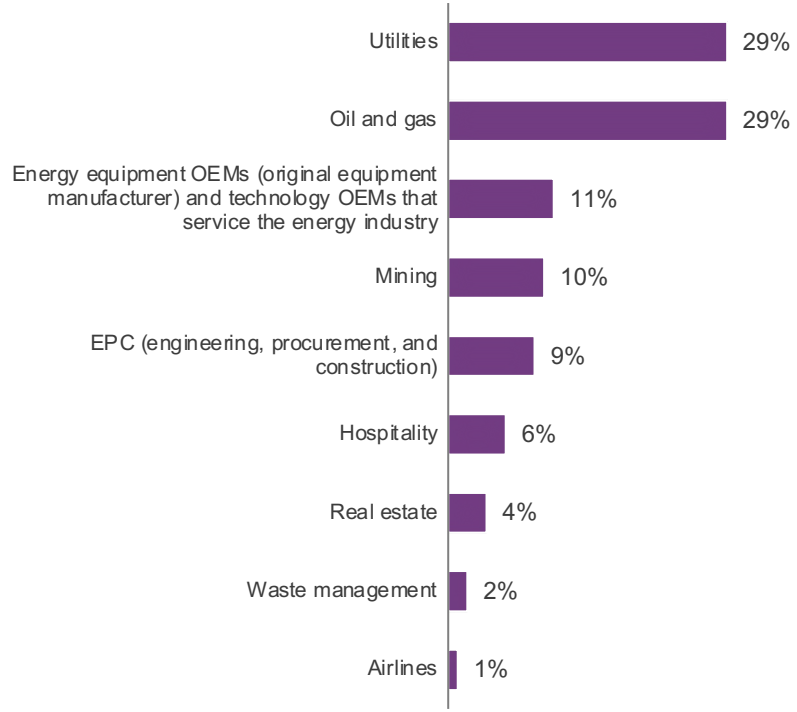
What is your company's annual revenue in US dollars?



Please specify where the organization you work for is headquartered.

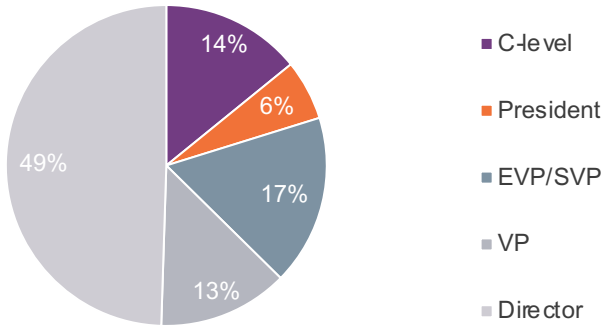


Please specify your company's industry.



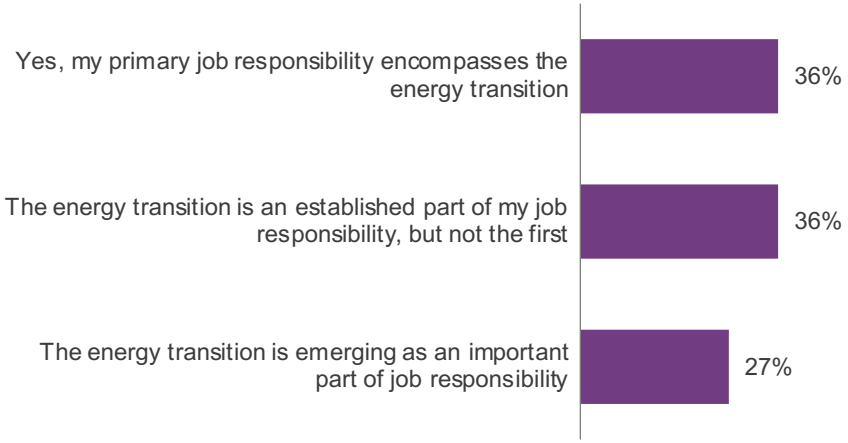
Roles and responsibilities

What title best describes you?

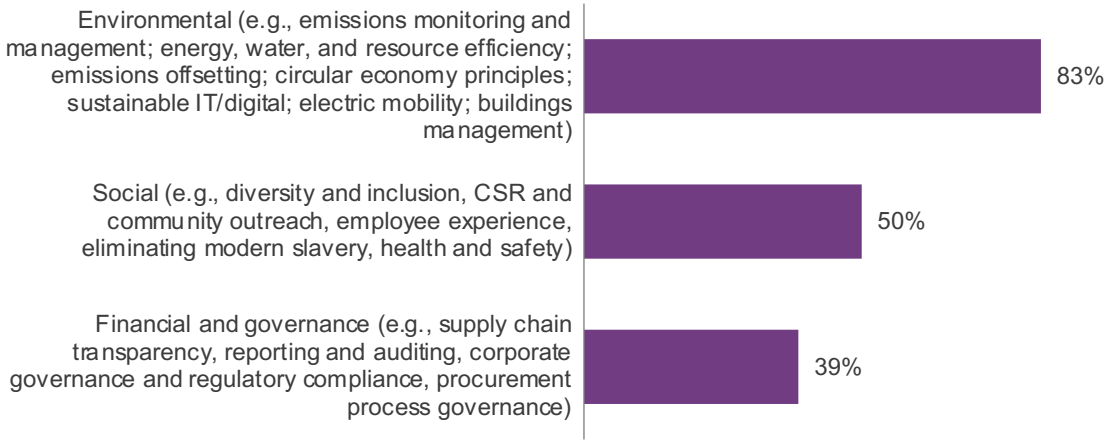


What is the focus of your current role in the organization?

Is driving the energy transition a part of your job responsibility?



What aspects of the energy transition are a part of your job responsibility?



2

Organizational-level strategy and progress

Organizational-level strategy and progress

01 **Half are waiting:** More than half (56%) of organizations see themselves in a roadmapping or reinventing phase of the energy transition. That leaves 44% as not acting—but the actual number is likely higher.

02 **What are C-level execs waiting for?!** Most (71%) actively admit to not acting, and 40% say they're waiting for other organizations to lead or for regulations to force them.

03 **Poor CEO support continues:** Only 40% of organizations have a dedicated sustainability leader. But worse, only 26% of leaders think their CEOs support the energy transition (and even operations only gets 53% of leaders thinking it supports the transition as the top scorer). This level of CEO support resembles our pre-COP26 data from 2021.

- Forty-two percent (42%) of the C-level think the CEO is the energy transition leader versus 24% of overall leaders, so the broader organization clearly doesn't agree.
- Functions, by and large, expect to support the energy transition more than the rest of their company thinks.

04 **There is (still) a wide disconnect throughout organizations:** The energy transition and sustainability must cascade from organizational-level strategy throughout all functions. Again, this data has not changed since 2021.

05 **Progress (?) in larger firms:** Bigger firms have more dedicated sustainability teams, unsurprisingly, but it's worrying to see so few CEOs taking the ultimate responsibility for the energy transition.

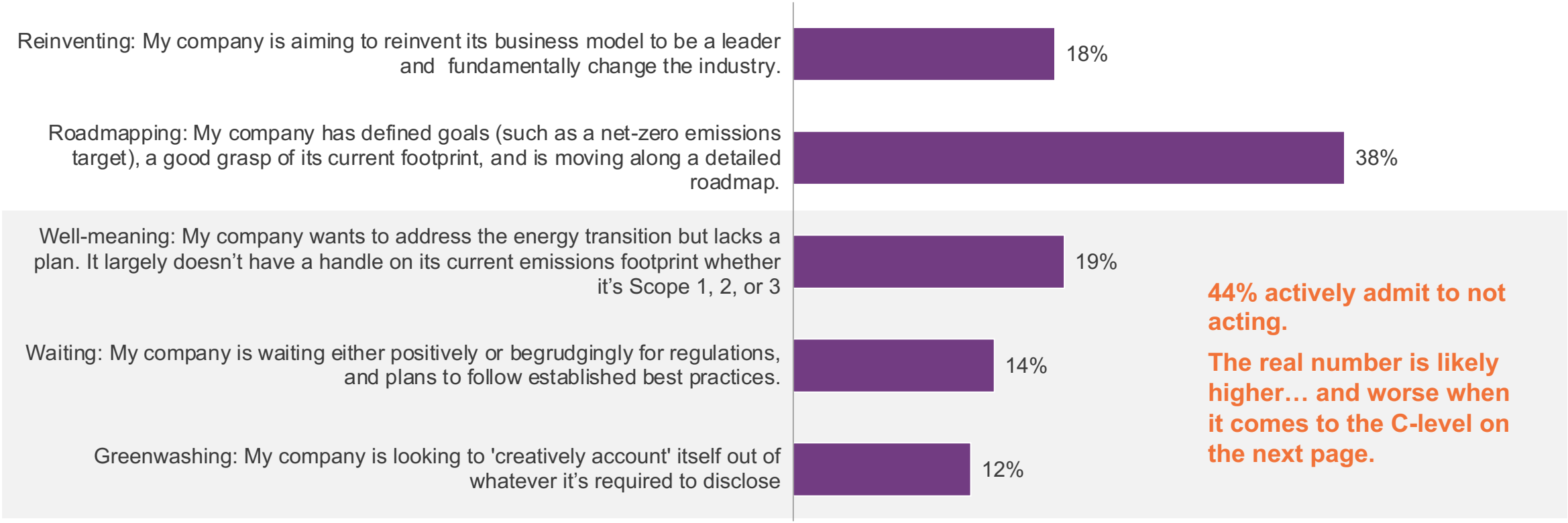
06 **Progress on a range of energy transition efforts** is being made most on buildings and translating strategy to business functions (although we'll see later that this is simultaneously a major barrier). But most organizations are still planning their emissions targets, and reducing Scope 3 emissions lags the most.

- C-level execs are more likely to say the organization is in the "planning" phase across energy transition efforts.

07 **Beyond emissions**, there are signs of progress in translating organizational strategy to functions and transparency in supply chains, but that just shows how dire progress is across other initiatives.

Forty-four percent (44%) say their company isn't pursuing an energy transition—but the actual number is likely higher

How would you classify your company when it comes to the energy transition?



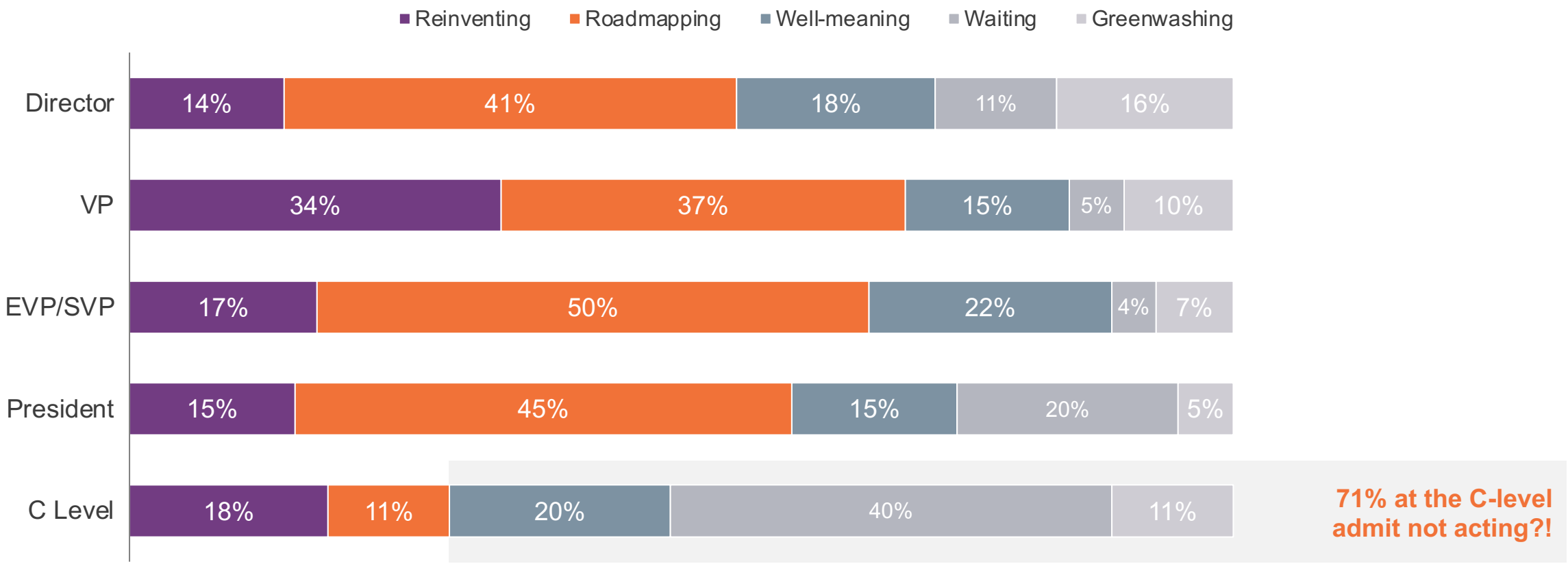
44% actively admit to not acting.

The real number is likely higher… and worse when it comes to the C-level on the next page.

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

What are C-level execs waiting for?! Seventy-one percent (71%) aren't acting, and 40% admit to waiting for others and regulations

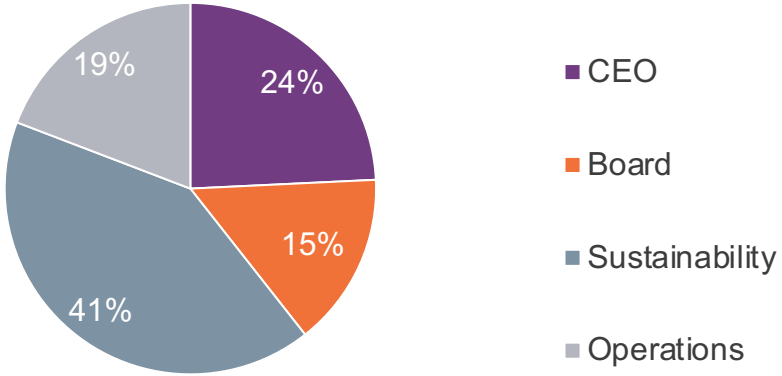
How would you classify your company when it comes to the energy transition?



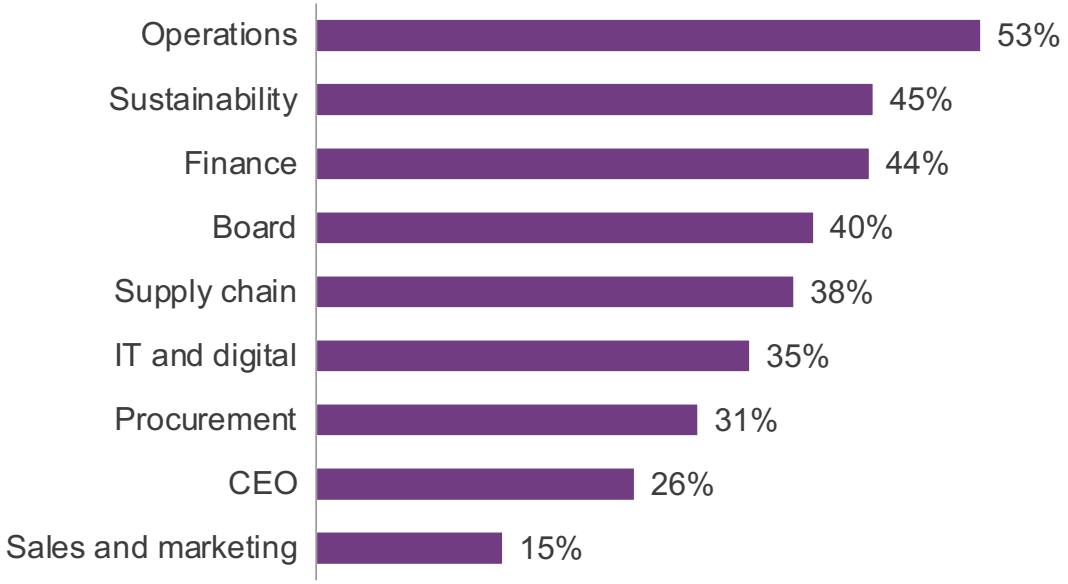
Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

Only 40% have a dedicated sustainability leader, but worse, only 26% think CEOs support the energy transition—even operations only gets 53% at the top

Which role in your organization is ultimately responsible for the energy transition?



What internal roles are expected to support energy transition initiatives?



- When splitting the data, 42% of the C-level think the CEO is the leader versus 24% overall. On the next page, we can clearly see the rest of the organization doesn't agree.

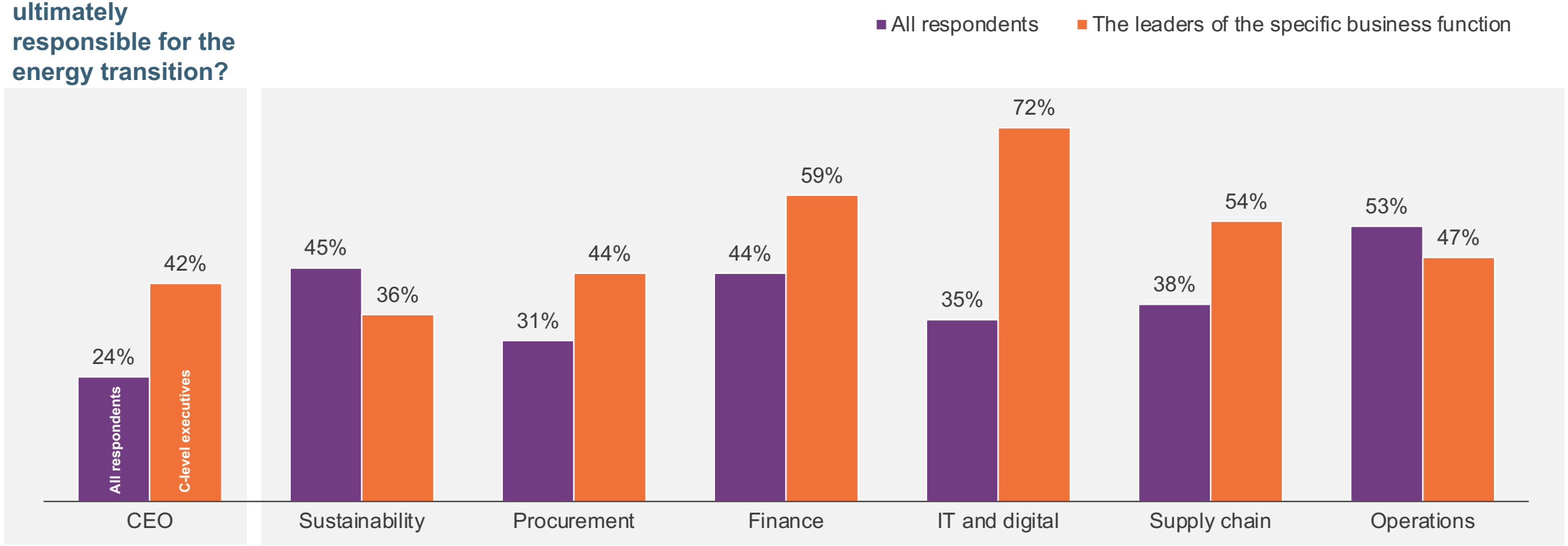
- More than half (54%) of supply chain leaders think they support sustainability versus 38% overall. Finance is similar. In IT/digital, 72% expect to support sustainability versus 35% in the minds of all.
- There's a large continuing disconnect throughout organizations. Top-level strategies are not cascading into the right metrics, targets, accountability, and incentives throughout all functional leaders and teams.

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

To span the wide disconnect throughout organizations, the energy transition and all sustainability must cascade throughout functions via the metrics, targets, accountability, and incentives to execute

Which role in your organization is ultimately responsible for the energy transition?

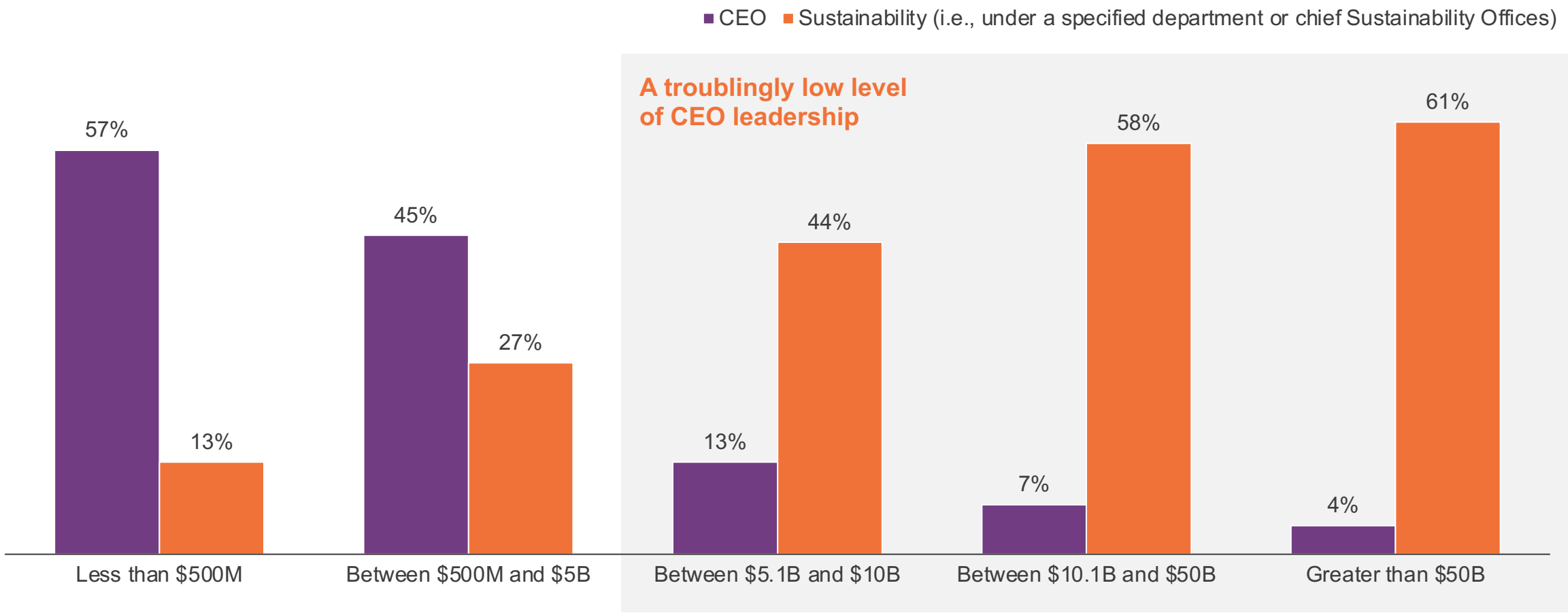
What internal roles are expected to support energy transition initiatives?



Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

Bigger firms more commonly have dedicated sustainability teams, unsurprisingly, but it's worrying to see so few CEOs taking the ultimate responsibility

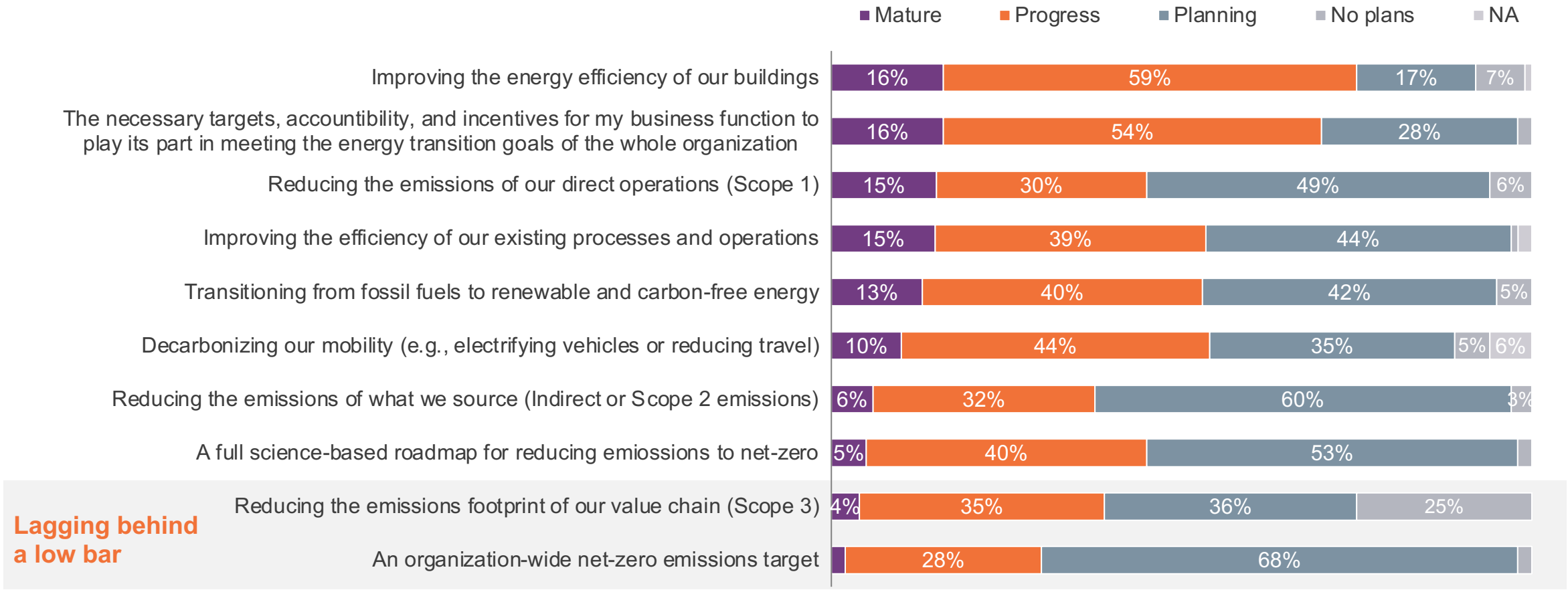
Which role in your organization is ultimately responsible for the energy transition?



Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

Progress is being made most on buildings and translating strategy to business functions, but most are still only planning emissions targets and Scope 3 emissions reductions are lagging (and it's a low bar)

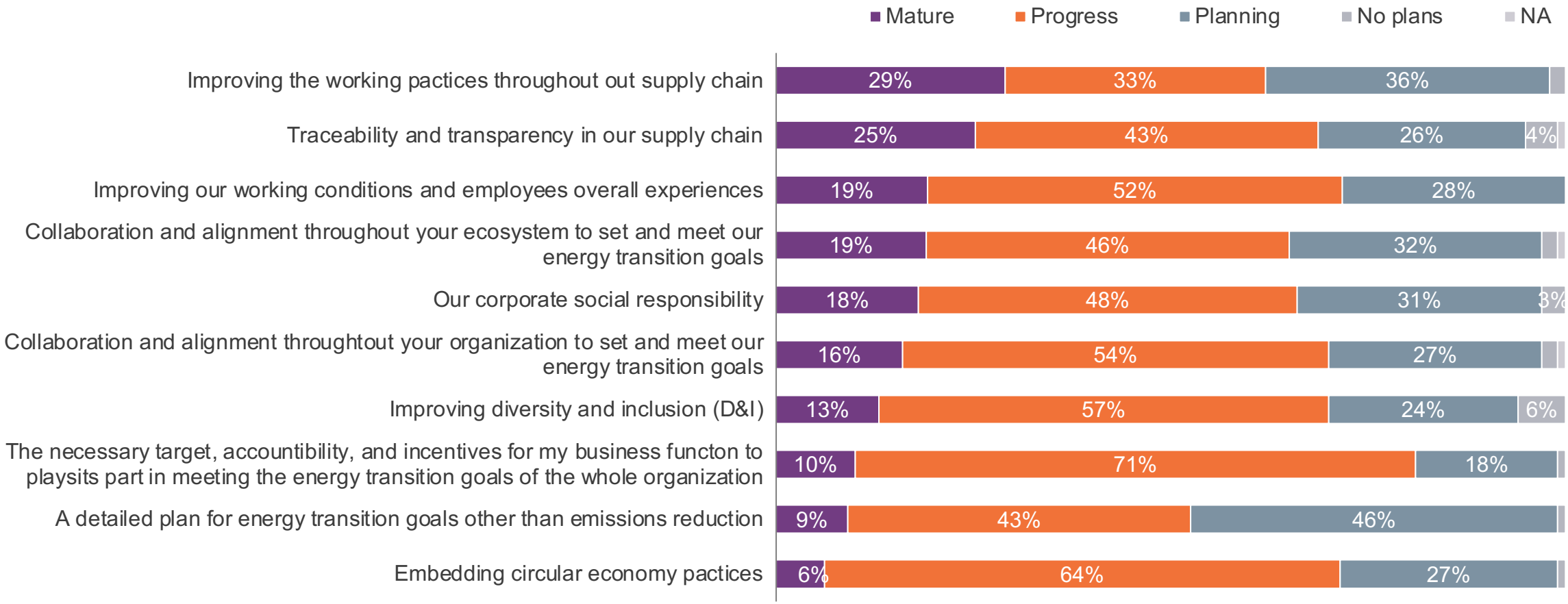
How mature are the following energy transition activities relating to emissions in your organization?



Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

Things look better beyond emissions: There's more progress on translating organizational strategy to functions, transparency, and working conditions in supply chains (but again, it's a low bar)

How mature are the following energy transition activities relating to ESG goals other than emissions in your organization?



Sample size: 313 energy transition leaders
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Note: Percentage value less than 3% are not shown in charts

3

Energy transition motivations

Energy transition drivers

01 **Performance, efficiency, and environmental impact are generating priority for the energy transition:** There are encouraging signs that most view the transition and sustainability positively.

02 **A priority:** Seventy-three percent (73%) see the energy transition as a top-three organizational priority. Bigger firms gave us the most heavily prioritized responses.

03 **The energy transition is accelerating:** Again, the largest firms lead the charge. Most (79%) of the largest ($50 billion+) firms expect a large increase in the importance of the energy transition on the horizon

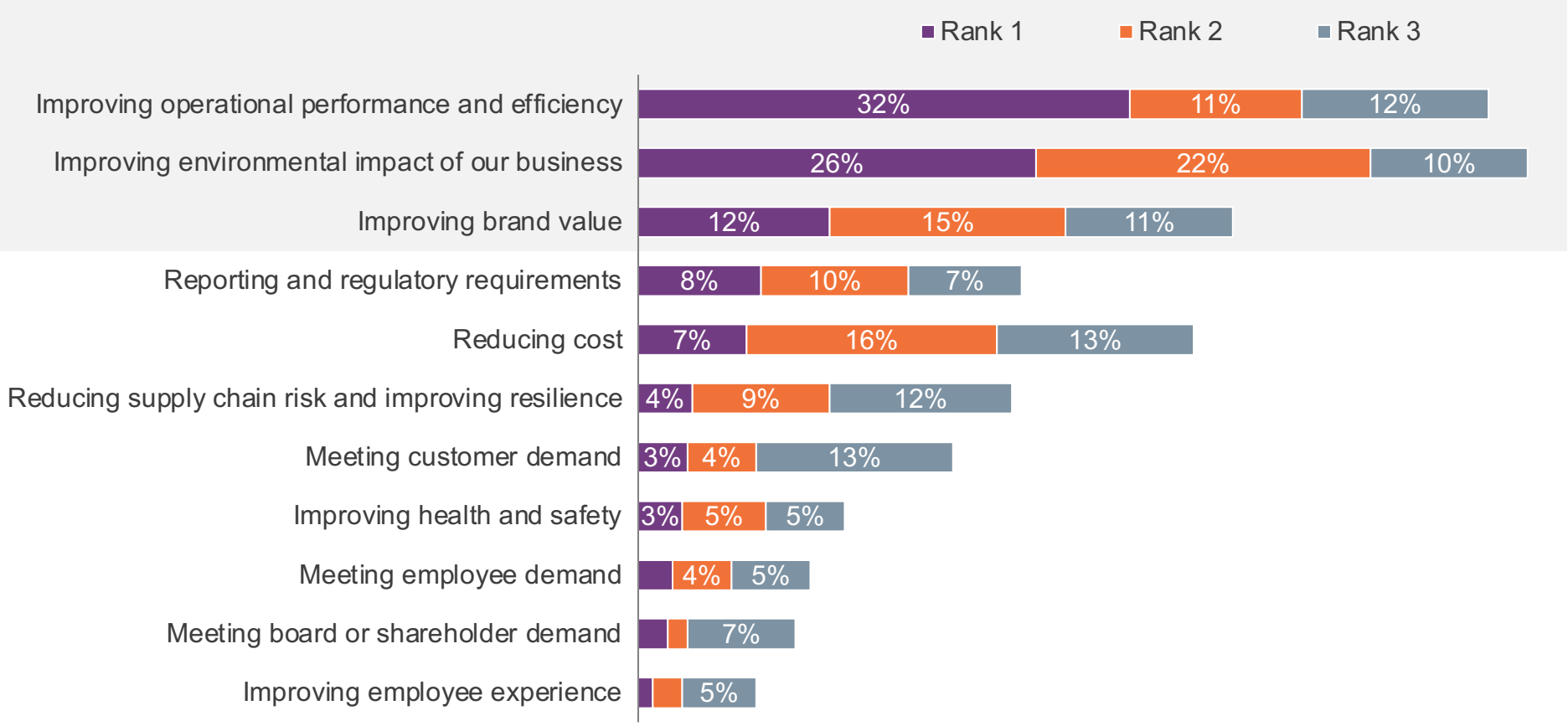
04 **A dawning realization:** The industry dynamic is the main driver of the energy transition, which might be blindingly obvious, but it's good to see that folks realize the transition is happening. The post/evolving pandemic environment also continues to drive sustainability efforts.

05 **Positivity:** Most see the energy transition having a positive effect, especially the largest firms, reinforcing that the barriers we'll see soon are impeding many in their efforts to move out in front and bring systems-level change.
- Fifty-four percent (54%) of the biggest firms expect a large improvement to overall business performance from their energy transition efforts.
- Expected increases in regulation are seen positively by most, especially the largest firms.

Performance, efficiency, and environmental impact drive the energy transition, and it's good to see most realizing the opportunities in sustainability

Why is the energy transition a priority for your organization?

It's good to see more positive drivers of prioritizing the energy transition—rather than it being forced by regulation or cost



Sample size: 313 energy transition leaders
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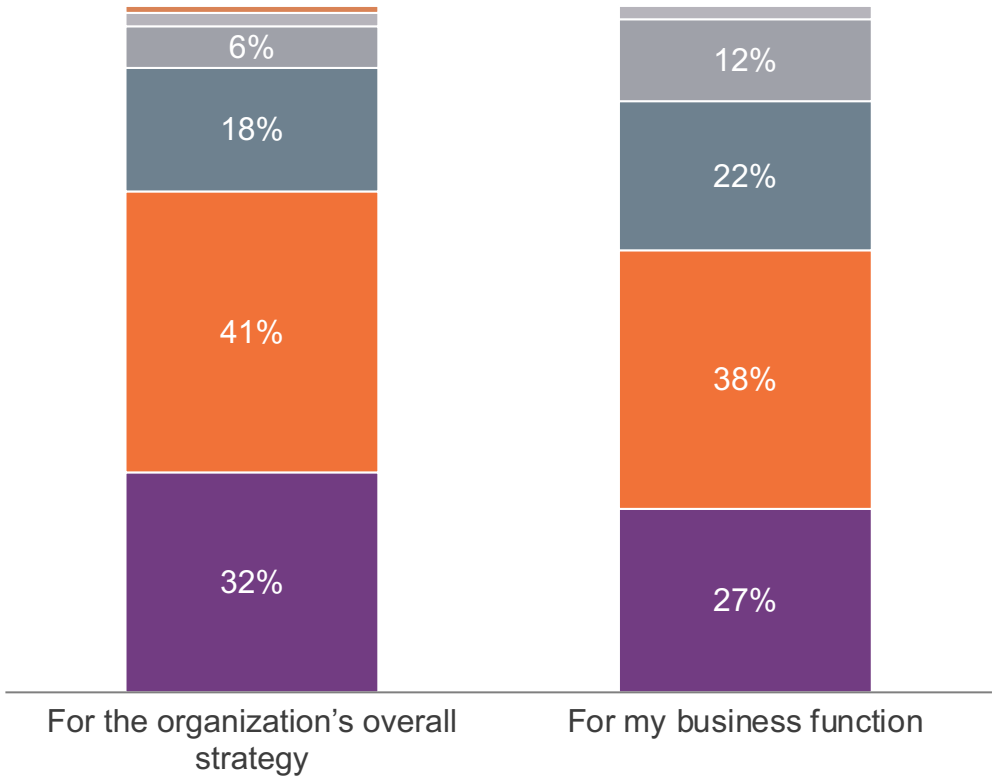
Seventy-three percent (73%) see the energy transition as a top-three organizational priority

How important is the energy transition?

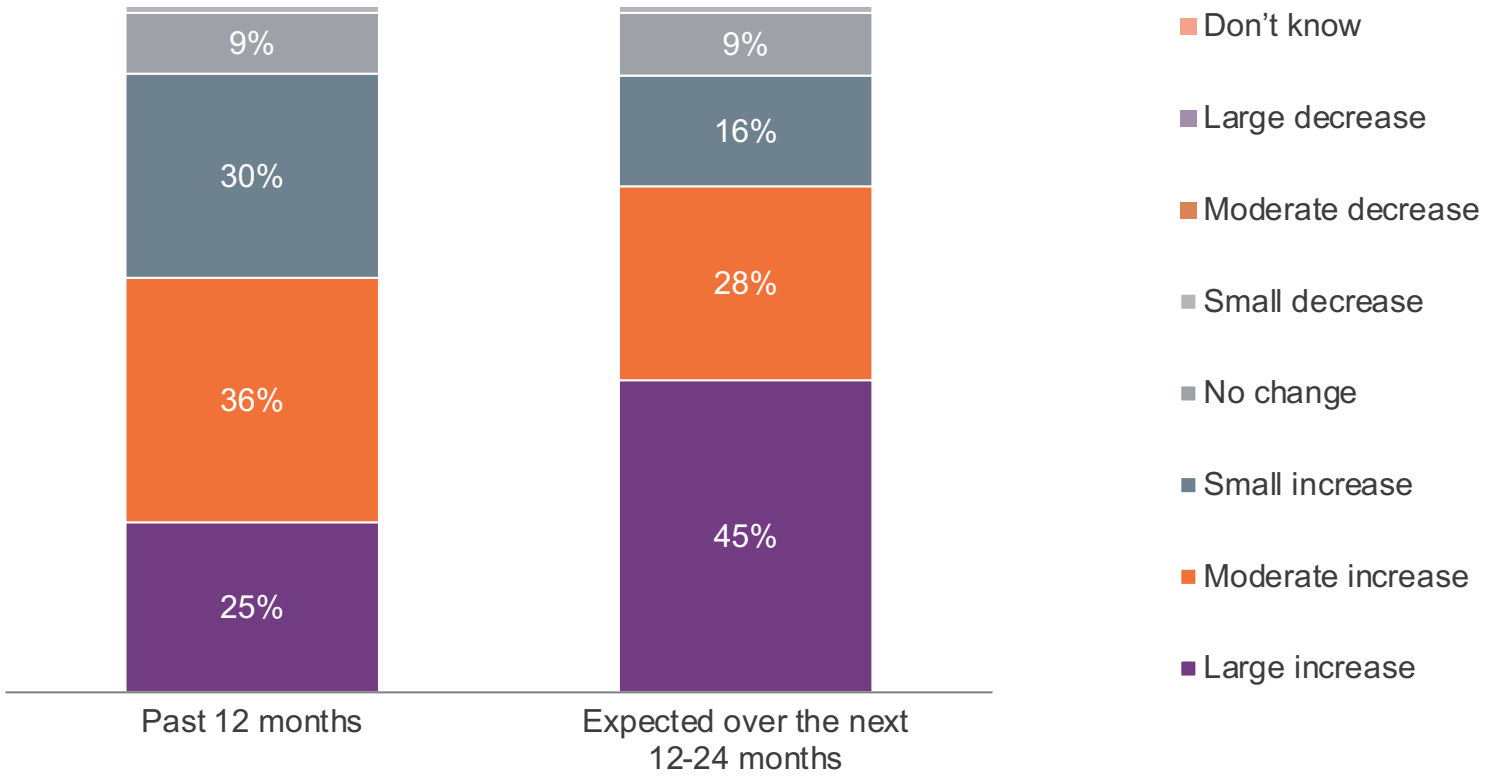


The priority is highest for $50 billion+ firms, where 57% say the energy transition is their number-one priority.

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

The energy transition is accelerating, with big firms, LATAM, and Europe leading the charge

How is the importance of the energy transition changing in your organization?

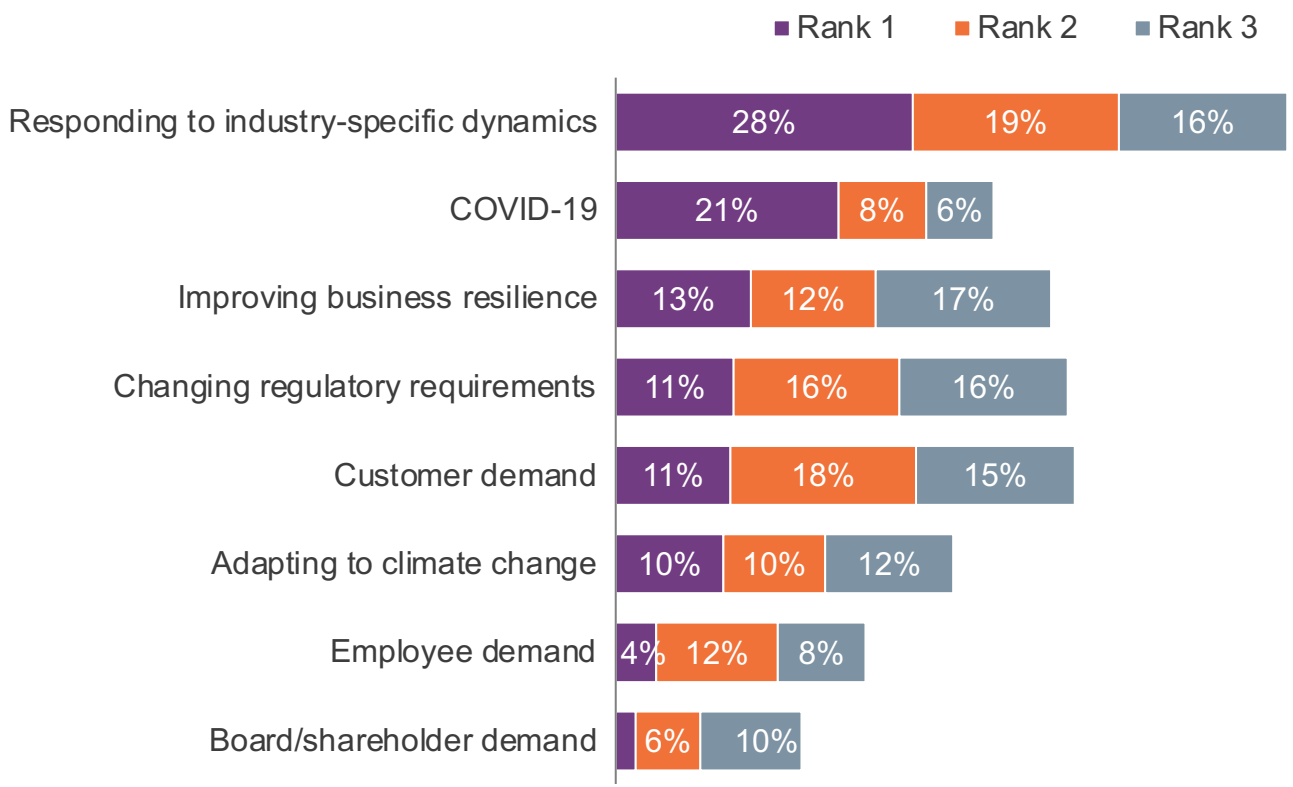


There's a significant increase coming in the importance of the energy transition for $10-50 billion and $50 billion+ firms: 79% say they expect a large increase.

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

The industry dynamic is the main driver—folks realize the transition is happening; the post and evolving pandemic environment also continues to drive sustainability

What has driven this change in the importance of the energy transition for your organization?



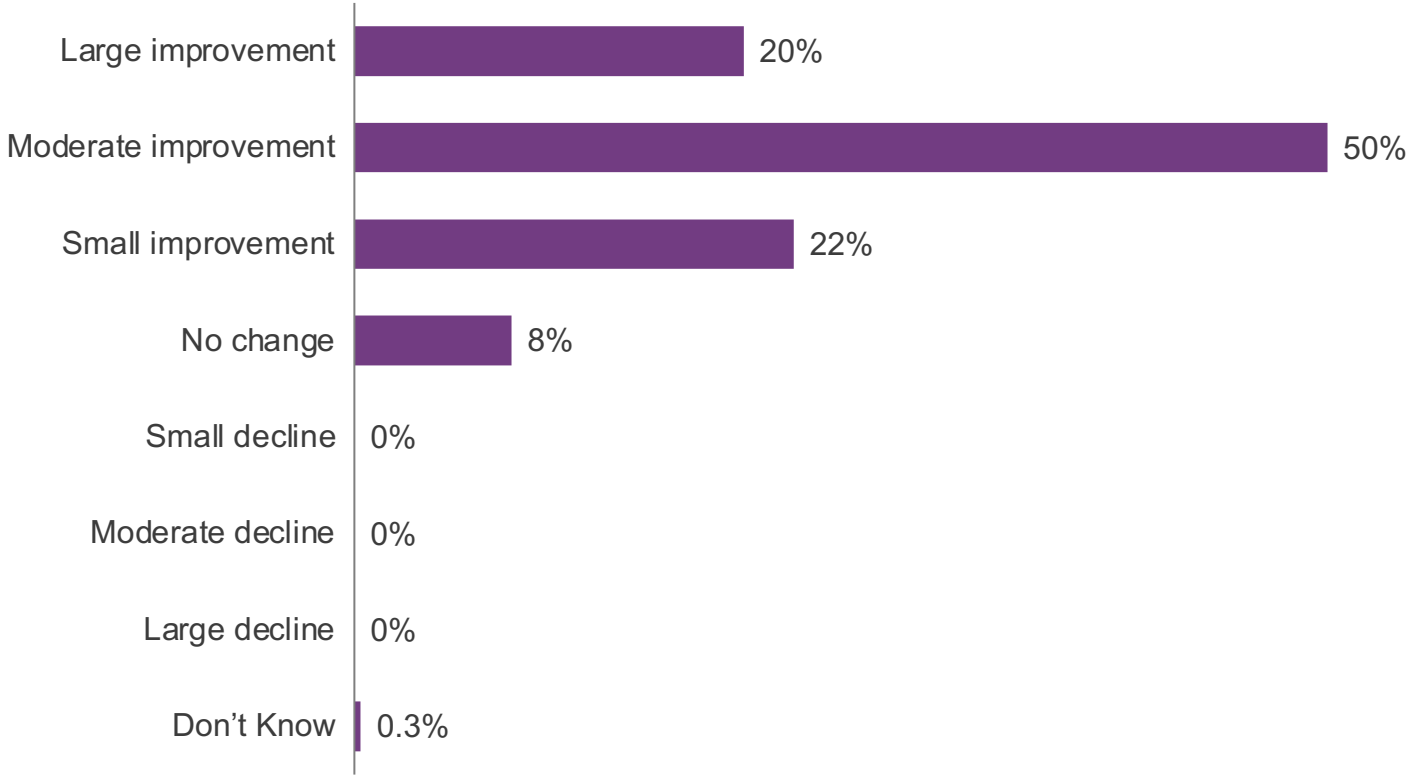
Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

> We have a connected company roadmap and more appetite for risk with confidence built on future markets and business.

– **A large energy and utilities technology firm** | Its Head of Investment for the Americas

Most see the energy transition having a positive effect, especially the largest firms, reinforcing the barriers to organizations realizing these opportunities

What change to overall business performance does your organization expect from its energy transition initiatives?

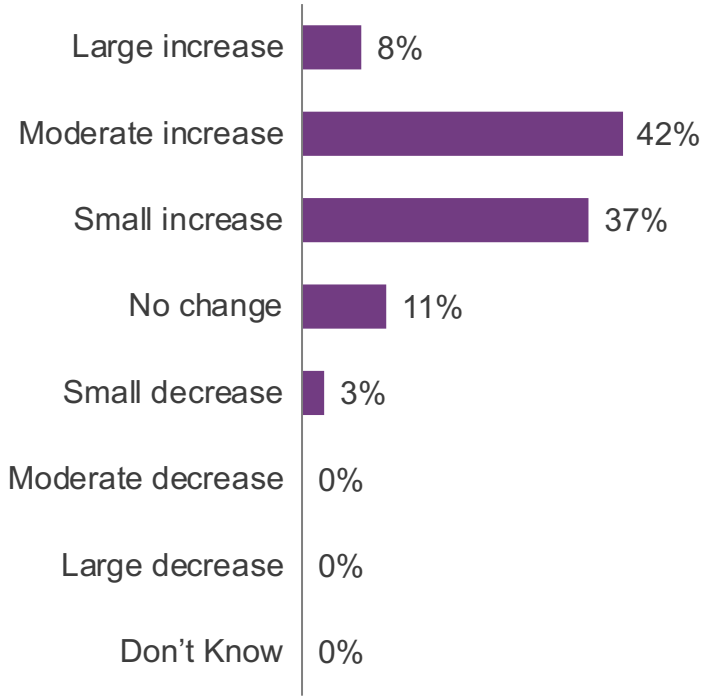


The biggest firms see bigger improvement opportunities. Fifty-four percent (54%) of $50 billion+ firms expect a large improvement.

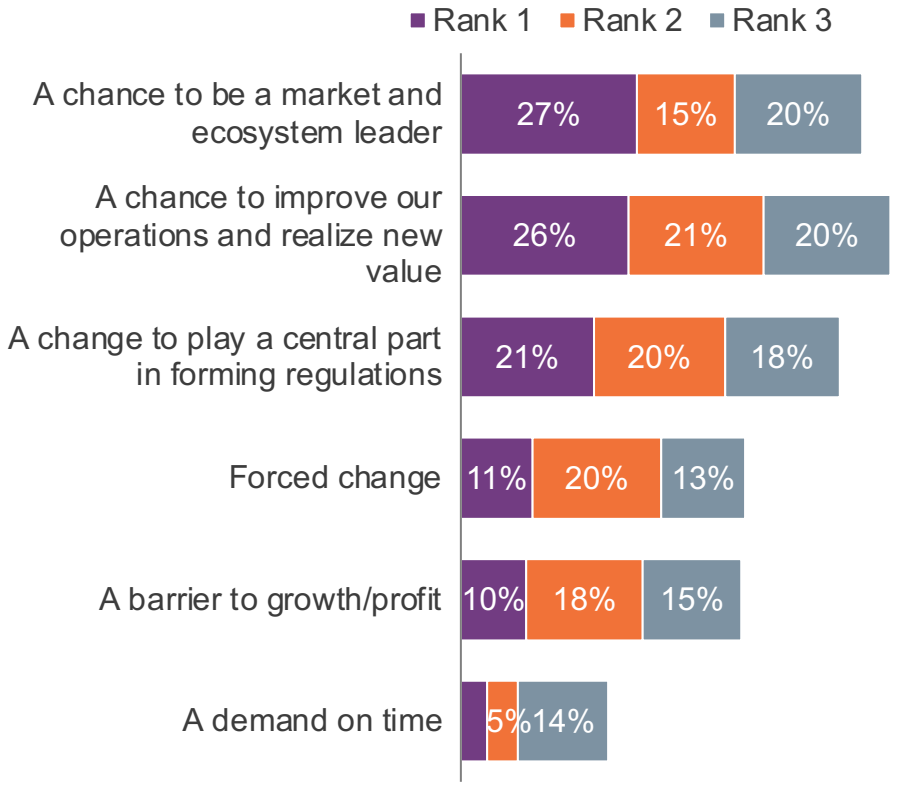
Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

Most see expected increases in regulation as a positive

How do you see energy transition-based regulation changing in next 12-18 months?



What effects will energy transition regulations have on your organization?



> Industry and transition momentum are unlikely to be stopped by politics.
>
> – **A US transmission and distribution utility** | Its CIO

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

4

Barriers to the transition

Barriers to the transition

01 **Collaboration levels are dire internally and throughout ecosystems:** This is made especially worrying given the systems-level nature of the energy transition challenge and its effects throughout all functions of an organization.

- Only 44% collaborate with others in their organization, and those levels are far more dire when considering wider ecosystem collaboration

02 **Too many functional leaders appear to be ignoring the energy transition:** But execs and general management aren't. Strategies must be translated throughout organizations into metrics, targets, accountability, and incentives. Functions must be ready, and they must get ahead of the conversation (call it managing upward rather than waiting for a mandate).

03 **Alignment and collaboration are barriers, whether internal or external:** Culture and customer demands also challenge, as do creating a business case and the continuing lack of regulation.

Collaboration levels are dire internally and throughout ecosystems

Who do you collaborate with to address the energy transition and global sustainability context?

> We have confidence in the direction of European regulation. We closely collaborate with peers, competitors, industry partners, regulators, and local authorities.
>
> – **A top-tier European utility** | Its Vice President for Energy Networks, Digital, and IT

Poor internal collaboration

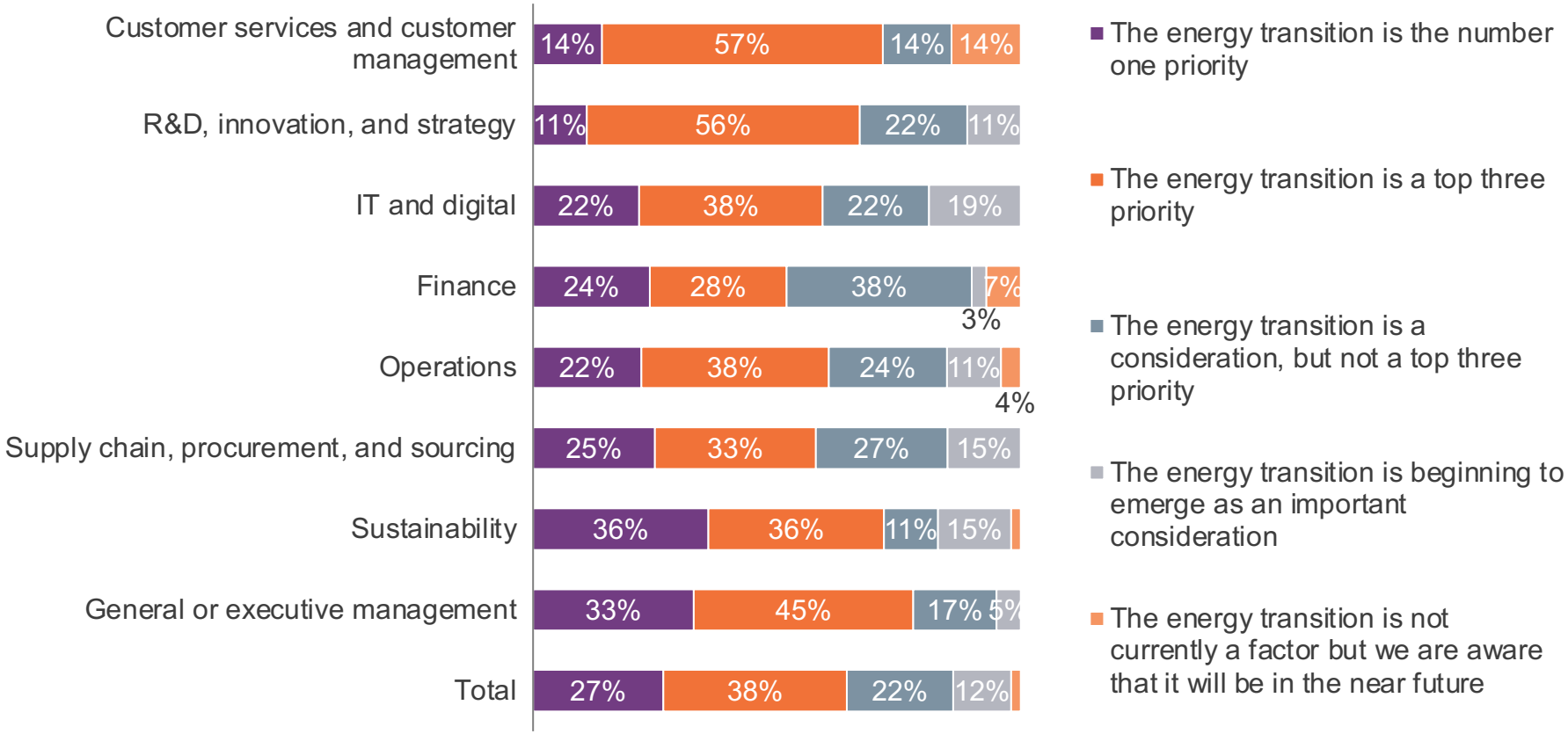
Worse ecosystem collaboration

> Our sustainability role is as a facilitator.
>
> – **A US transmission and distribution utility** | Its CIO

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

Finance, ops, IT, and supply chain are ignoring the transition, but execs aren't; strategy must be translated, and functions must be ready

How important is the energy transition? (for my business function)

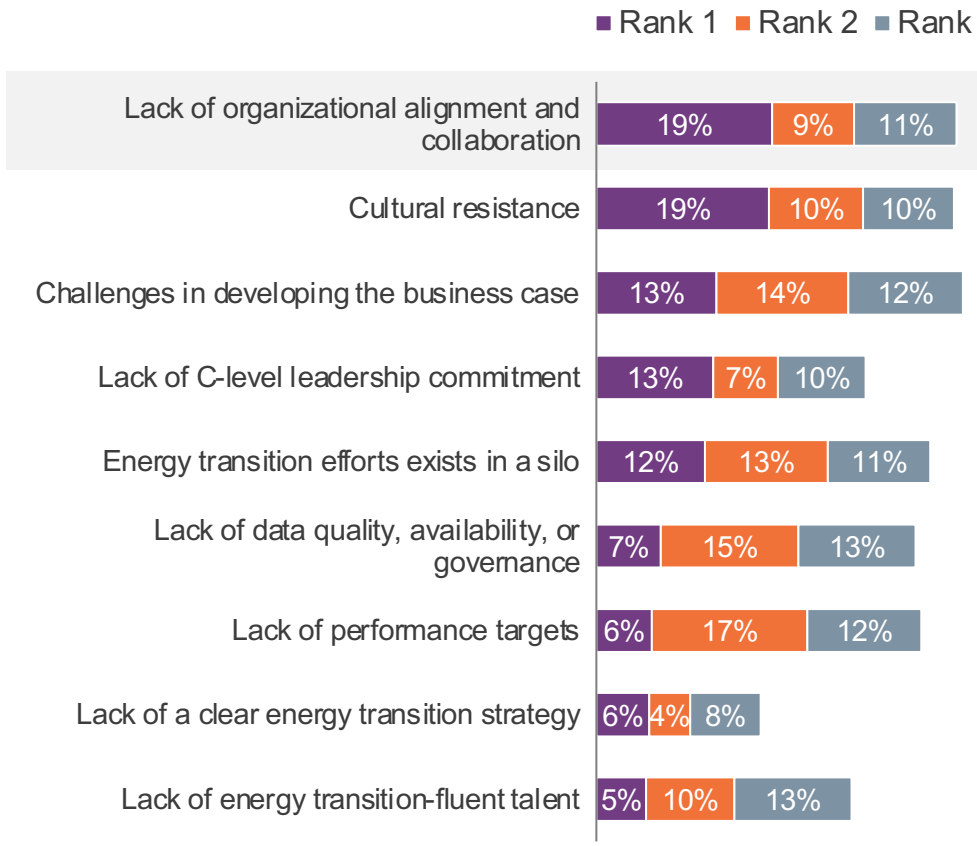


Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

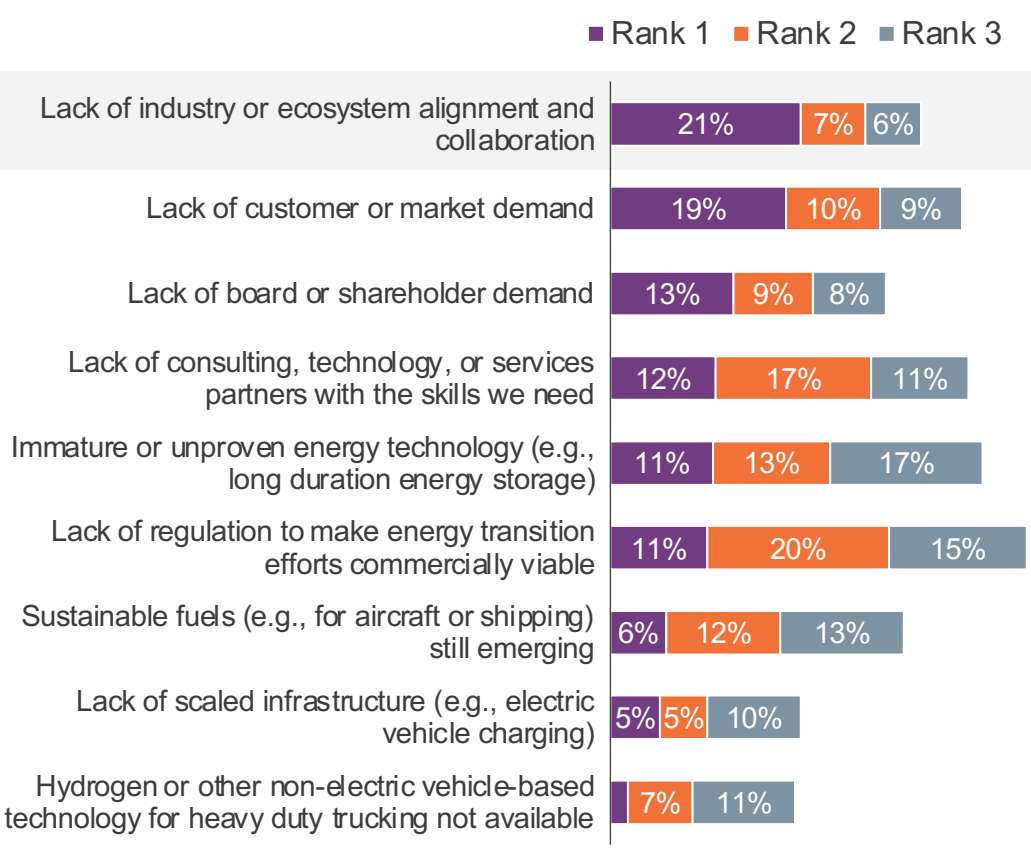
> Disconnects remain throughout the organization and industry—roadmaps don't yet cascade
>
> – **A large US transport firm** | Its Director of Strategy

Alignment and collaboration, whether internal or external, are barriers, as are culture, customer demand, business case challenges, and lacking regulations

What are your company's internal challenges to meeting your energy transition goals?



What are your company's external challenges to meeting your energy transition goals?



Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

5

Investments, technology, and standards across the energy transition

Investments, technology, standards across the energy transition

01 **Our research outside of this study illustrates that the market for sustainability consulting, technology, and business services is expected to soar 240% over the next two years,** soon to approach $200 billion. The link with energy transition efforts goes without saying. See also our specific **energy transition services market analysis.**

02 **Ninety-four percent (94%) of energy and utilities execs are set to increase their IT spending** over the next year.

03 **Eighty-two percent (82%) expect an increase in spending on the energy transition,** led dramatically by the biggest firms.

04 **Investment in IOT technology is a leader** among the digital pack when considering the energy and utilities industry as a whole, agreeing with our deep-dive interviews for this study and in part the specific data below on energy transition digital technology.
- There's lots of upcoming technology investment, but a worrying lack of analytics in the minds of industry leaders.
- Cloud dominates upcoming investment plans on the energy transition specifically, followed by IOT.

05 **SASB, GRI, and Dow Jones** are top of use and mind when considering standards.
- The US is worryingly unaligned to the SEC proposals at 24%. The EU is much the same with the Green Taxonomy at 20%.

06 **A broad mix of technology solutions** are in play and in mind for the energy transition: Firms are hedging their bets across enterprise, in-house, and niche solutions.

The sustainability services market is approaching $200 billion

Sustainability services market size
2020-2024; HFS estimate

As per the HFS 2022 market analysis of the 18 leading firms across the consulting, technology, business, and engineering services firms. See also our specific energy transition services market analysis.

$19 Billion

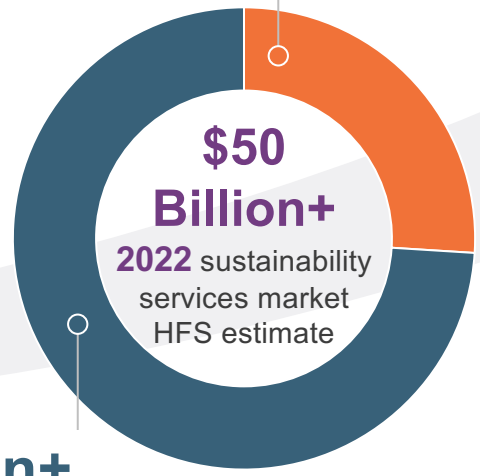
2020 sustainability services market HFS estimate

160%

Estimated growth over the past two years made up of acquiring, hiring, and internal repositioning and upskilling

$13 Billion

Annual sustainability services revenues of the 18 leading firms*



240%

Estimated growth over the next two years, made up of acquiring, hiring, and internal repositioning and upskilling

$170 Billion+

2024 sustainability services market HFS estimate

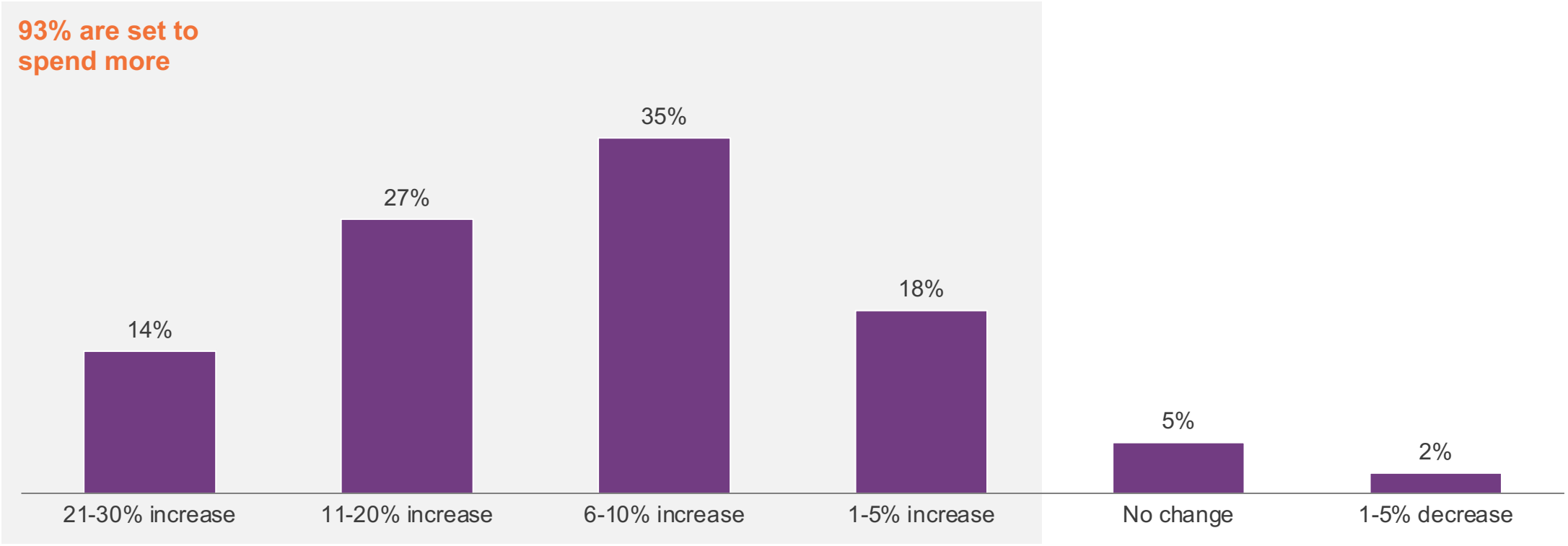
$37 Billion+

HFS estimate of the sustainability services market beyond the leading 18 firms (estimated as 20% of the market)—including pure consultancies, technology and platform giants, engineering powerhouses, all niche players, and broad business services beyond the leading 18

Sample size: 18 leading sustainability services firms
Source: HFS Top 10, Sustainability Services, 2022

Ninety-three percent (93%) of energy and utilities leaders expect an increase in IT spending

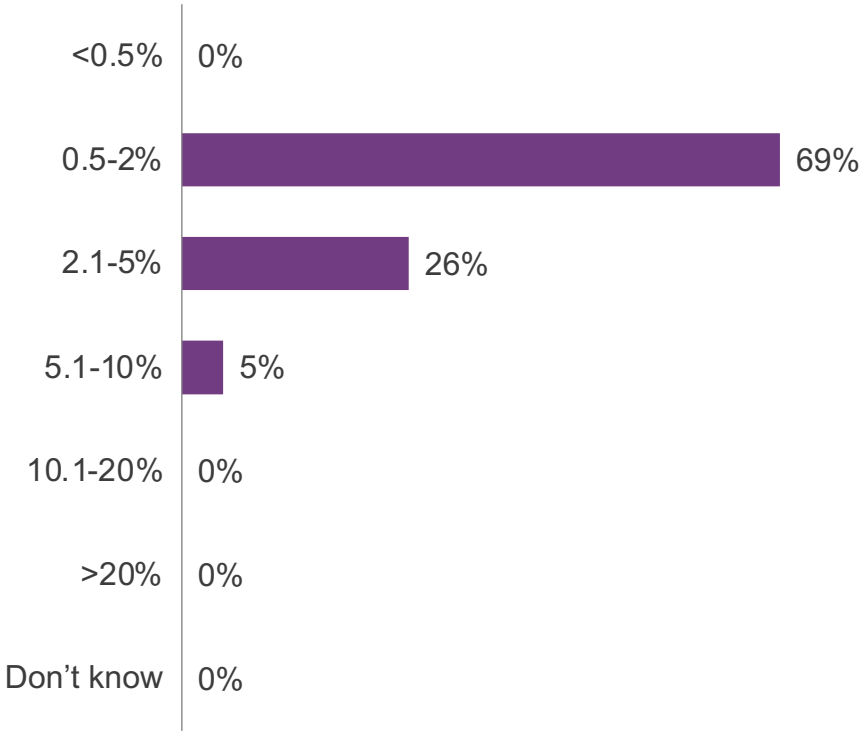
How is your IT budget expected to change in the next 12 months



Sample size: 66 energy and utilities industry executives across Global 2000 companies
Source: HFS Research Pulse Dashboard 2022

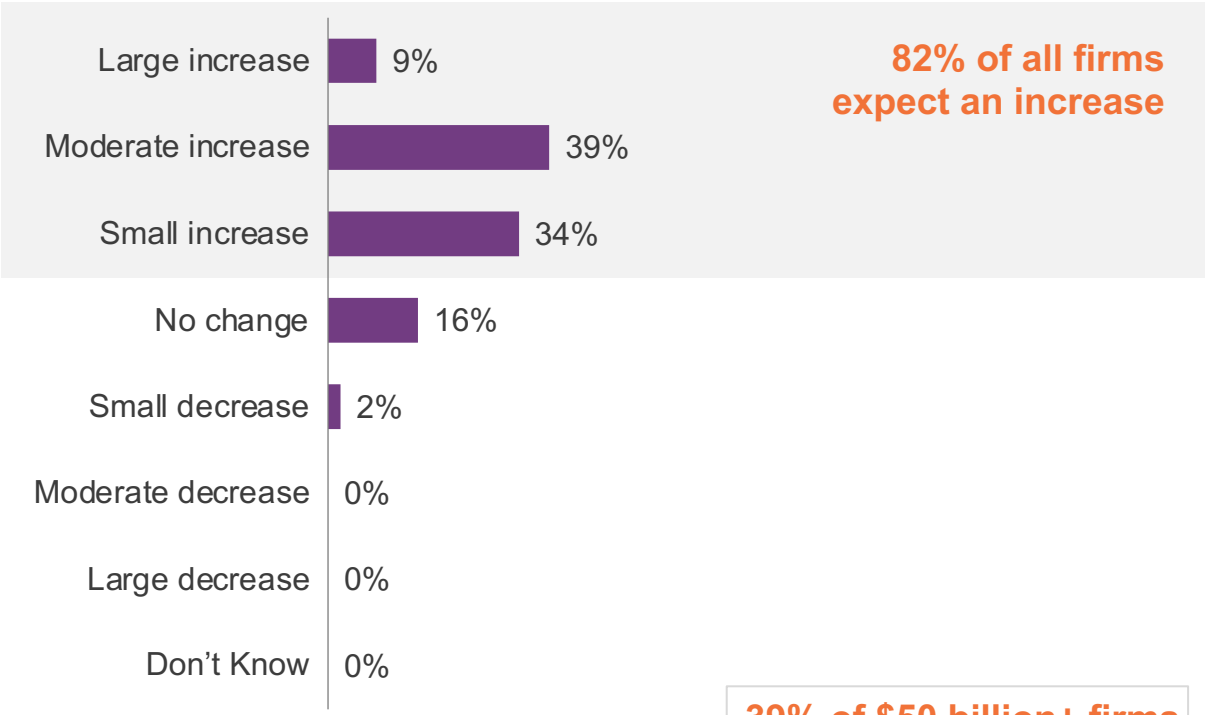
Eighty-two percent (82%) expect an increase in energy transition spending—led dramatically by the biggest firms

What is the organizational spend on the energy transition as a percentage of total organizational revenue?



Mean: 2.14%

What is the planned change in organizational spending on the energy transition over the next year?



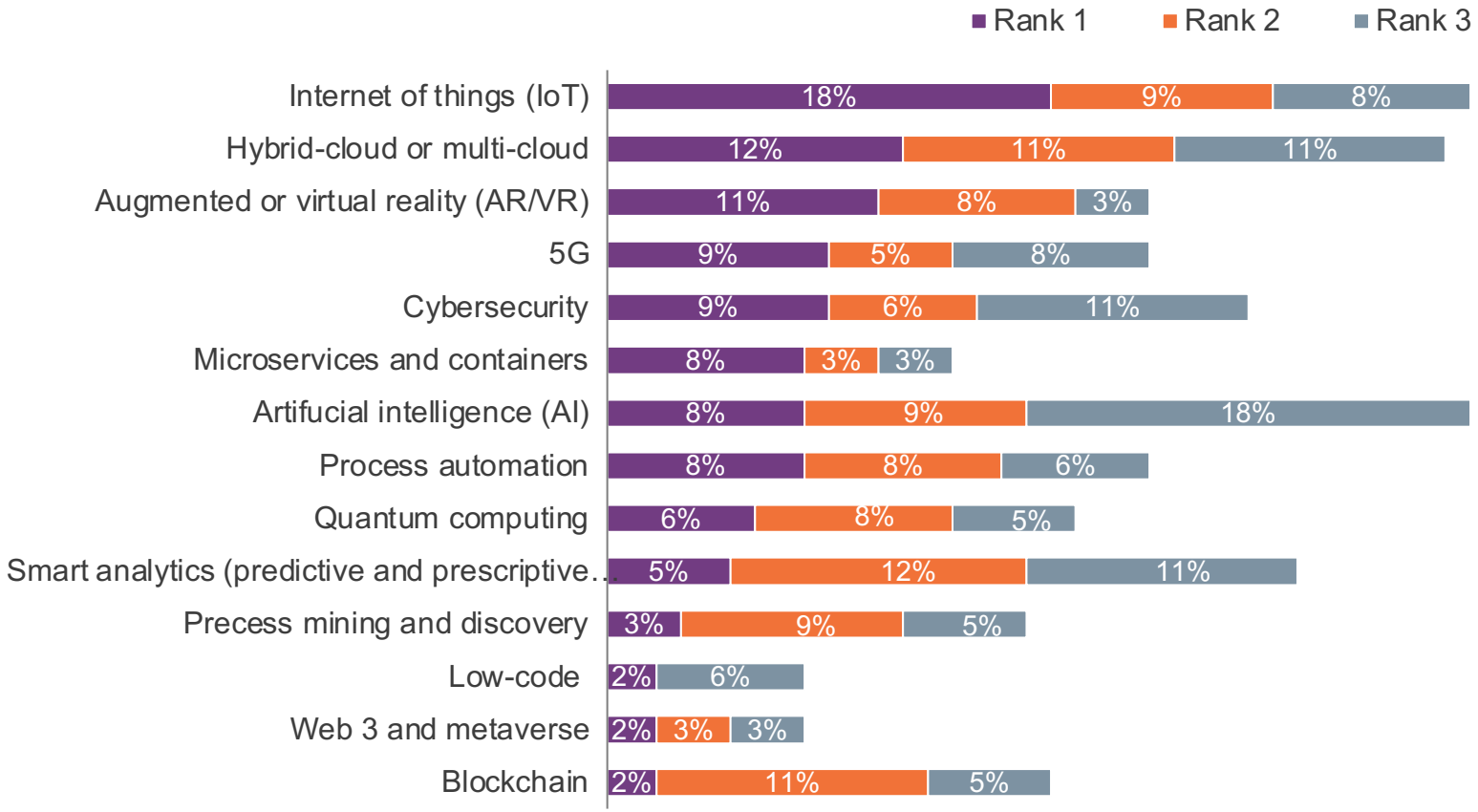
82% of all firms expect an increase

39% of $50 billion+ firms expect a large increase

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

A connected energy and utilities industry beckons

Rank the top three technologies that your organization expects to invest in over the next 12-18 months
Global 2000 energy and utilities executives, percent responding



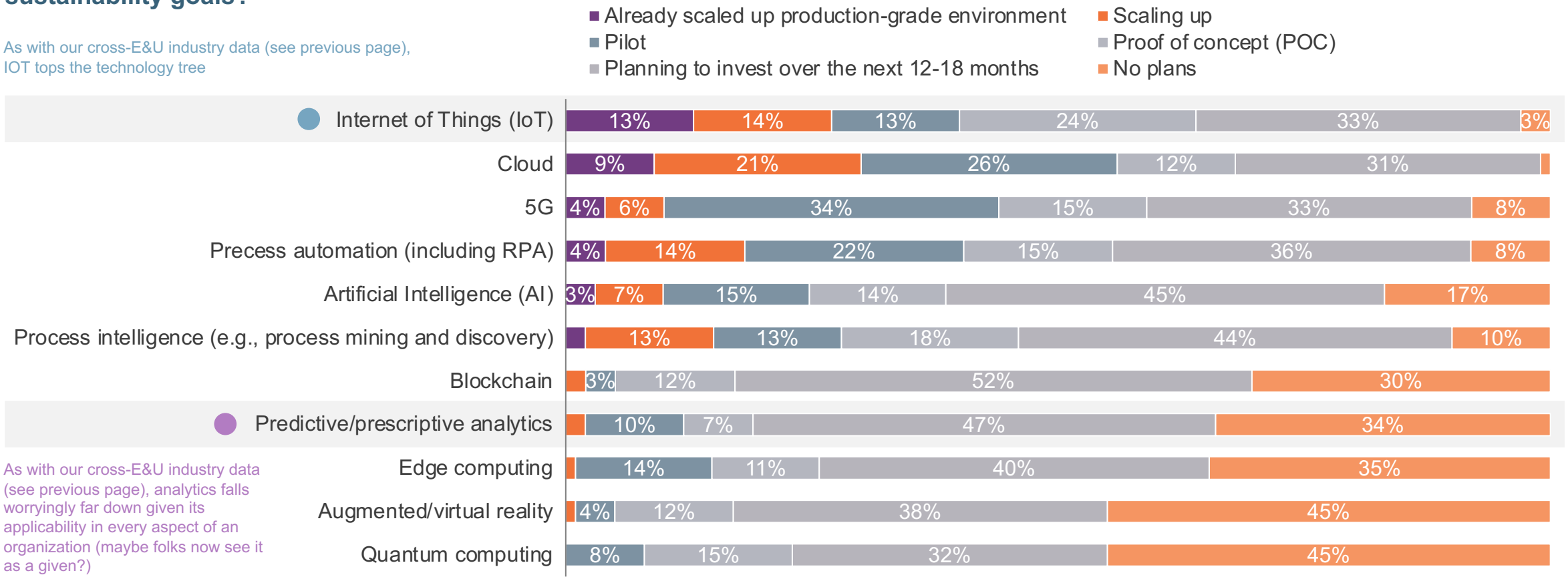
Sample: 66 energy and utilities executives across Global 2000 companies
Source: HFS Pulse Dashboard, 2022

> For digital, the utilities industry is going big on IoT, digital twins, and smart meters, but all digital technology will receive investment.
>
> – **A top-tier European utility** | Its Vice President for Energy Networks, Digital, and IT

There's a spectrum of upcoming technology investment but a worrying lack of analytics in the minds of enterprise leaders

What is the current stage of adoption of the following emerging technologies to meet your energy transition and sustainability goals?

As with our cross-E&U industry data (see previous page), IOT tops the technology tree

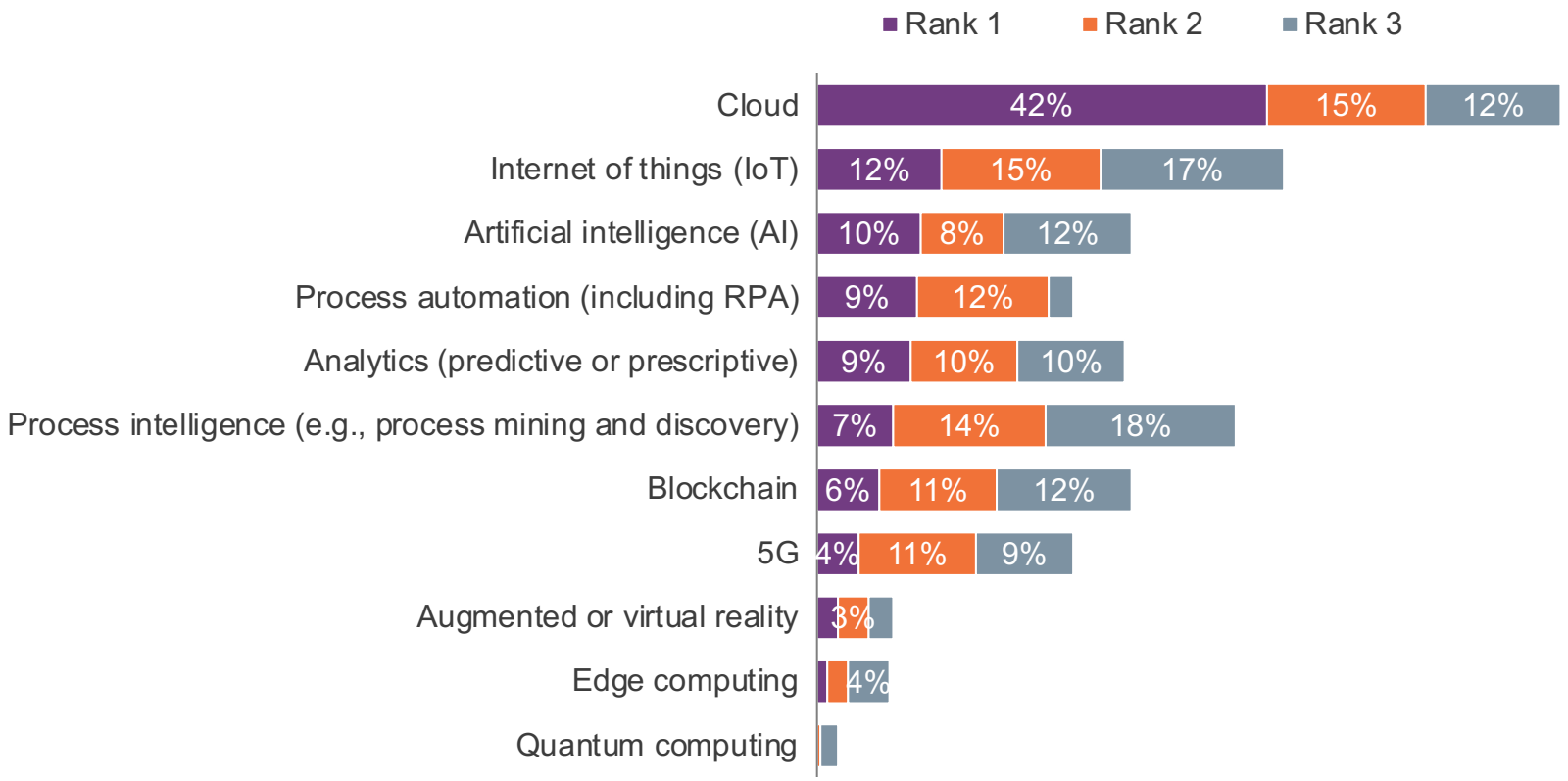


As with our cross-E&U industry data (see previous page), analytics falls worryingly far down given its applicability in every aspect of an organization (maybe folks now see it as a given?)

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

Cloud dominates upcoming investment plans

Which of the following emerging technologies is your organization planning to invest in the most to deliver your energy transition goals?

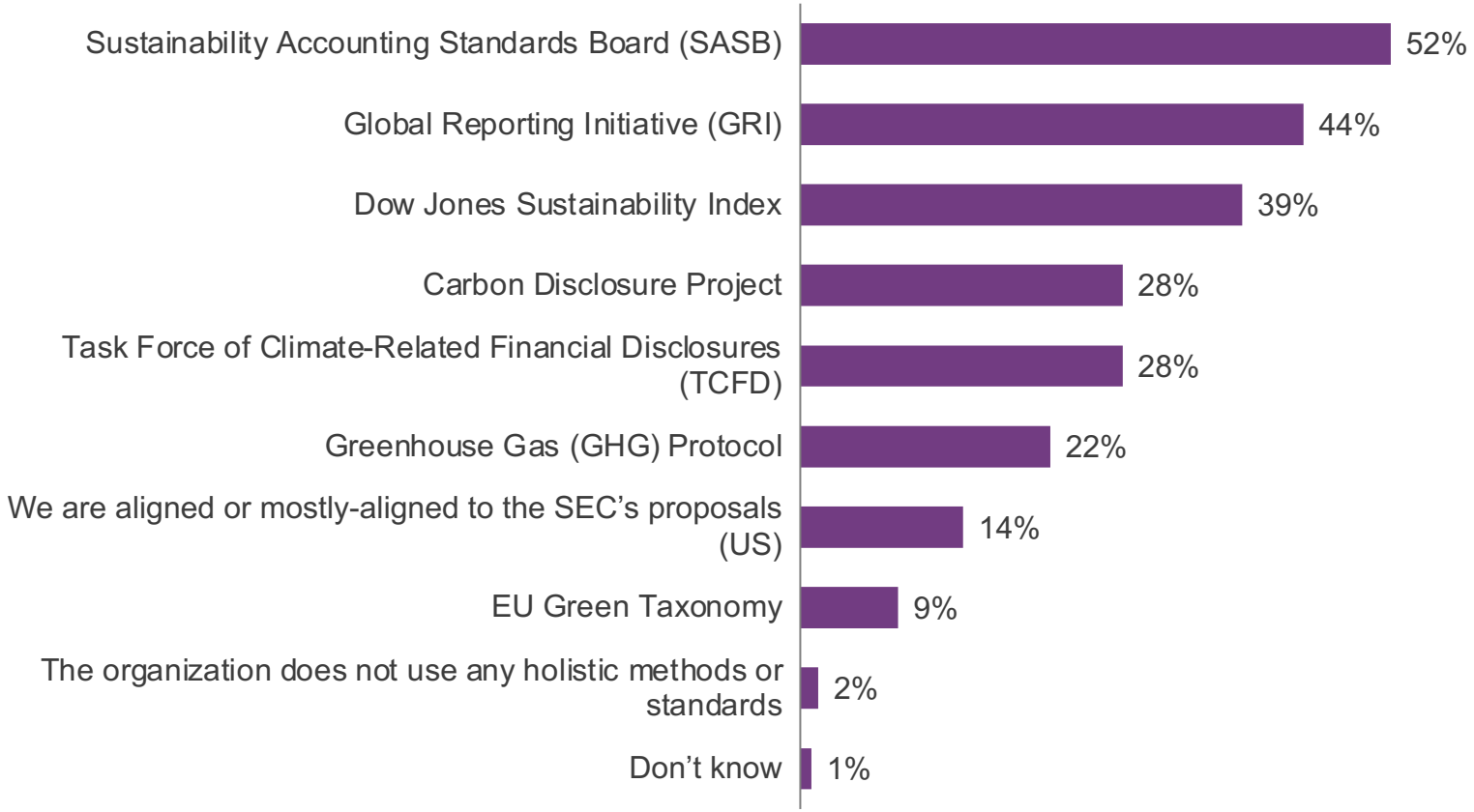


Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

> Digital technology sees an all-of-the-above approach.
>
> – **A global European oil and gas major** | Its General Manager for Digital Innovation and Technology

SASB, GRI, and Dow Jones are top of use and mind, but the US is worryingly unaligned to the SEC's proposals and the EU sees the same with the Green Taxonomy

When it comes to emissions and other sustainability reporting, what reporting methods and/or standards does your company use or have plans to use over the next 12-18 months?



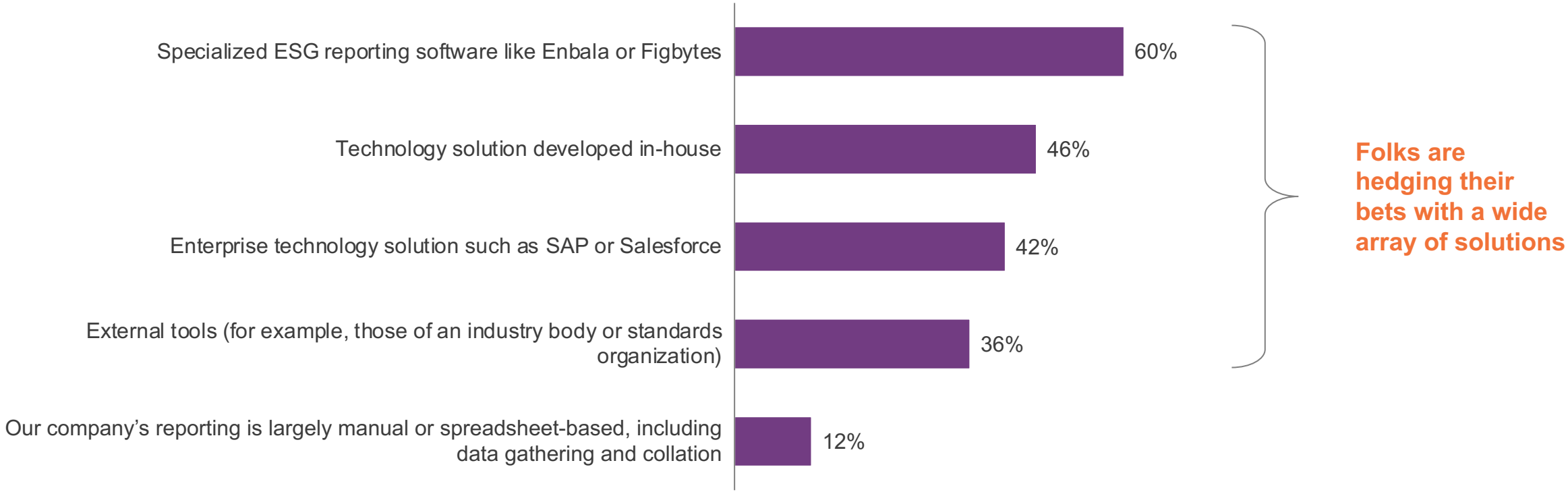
> Opportunities are soaring across a range of geographies—but they're all very different from business and regulatory standpoints.
>
> – **A large energy and utilities technology firm** | Its Head of Investment for the Americas

- Only 24% of US firms are aligned or mostly aligned with the SEC's proposals.
- Only 20% of European firms are using or plan to use the Green Taxonomy standards.

Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

There is a big mix of technology solutions in play and in mind, and firms are hedging their bets given the lack of best practices

When it comes to energy and/or emissions reporting, what type of technology solution does your company use, or have plans to use over the next 12-18 months?



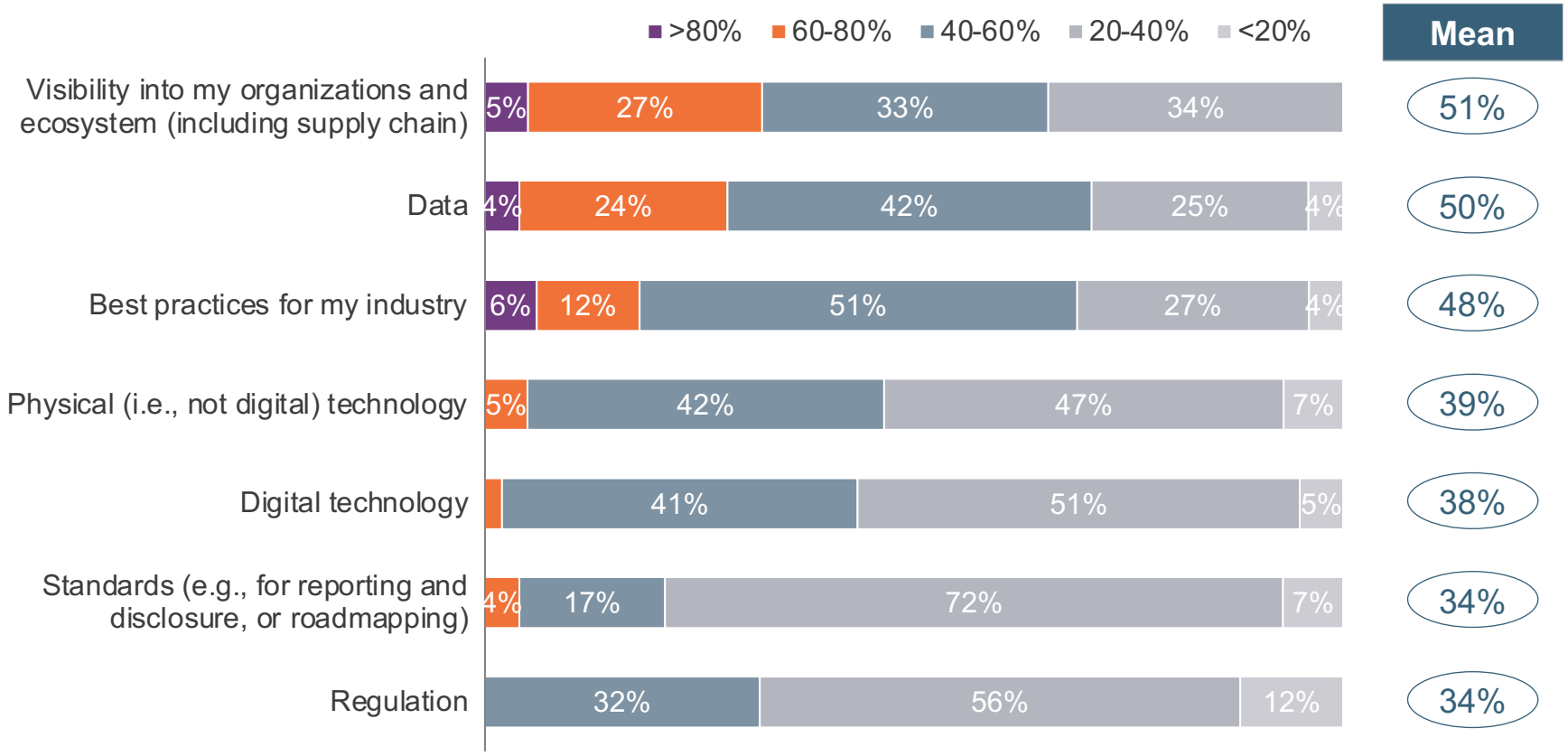
Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023

6

The Bottom Line:
There’s so much work to do

We severely lack technology, regulation, standards, best practices, visibility, and data; the bottom line is that there's so much work to do…

Approximately what percentage of the following do you feel your organization has right now for it to address its energy transition goals?



Sample size: 313 energy transition leaders
Source: HFS Research and Infosys, 2023
Note: Percentage value less than 3% are not shown in charts

> Real-time emissions data is still lacking—it's not about the end platform. Value chain transparency is a real battle. And there's a struggle for a market mandate, regulation, and clarity on future technology roadmaps.
>
> – **A large US energy firm** | Its Principal Advisor for Environmental and Energy Technologies

About the author

Josh Matthews

Chief Sustainability Officer and Practice Leader

joshua@hfsresearch.com

Josh Matthews is a Chief Sustainability Officer and Practice Leader at HFS, based in Cambridge, UK. Josh leads HFS' coverage of sustainability and the energy and utilities industries, built on academic and industry expertise across chemical engineering, management, and sustainability. He spoke at COP26, the 2021 UN climate summit, presenting the latest HFS sustainability research study. Josh also covers supply chain as part of a broader HFS team. Other subjects of interest and coverage include quantum computing, diversity and inclusion (D&I), and manufacturing.

Josh is a former City Councilor in Cambridge, where he held the opposition portfolio for Climate Change, the Environment, and the City Center.

Josh graduated from an "MBA for engineers" master's program at Cambridge University. His research tackled operational and environmental improvements in industry and the implementation and management of sustainable initiatives. On behalf of the university, Josh worked on consulting projects at Unilever, as well as SMEs in the tech and marketing spaces.

Josh had previously graduated from Loughborough University with a first-class master's in Chemical Engineering. Over the course of this degree, he worked in the energy industry, and was a visiting researcher at UC Santa Barbara, publishing designs and analysis of low-CO_2 hydrogen production in the Chemical Engineering and Technology journal.

About HFS Research

Insight. Inspiration. Impact.

HFS is a unique analyst organization that combines deep visionary expertise with rapid demand-side analysis of the Global 2000. Its outlook for the future is admired across the global technology and business operations industries. Its analysts are respected for their no-nonsense insights based on demand-side data and engagements with industry practitioners.

HFS Research introduced the world to terms such as “RPA” (Robotic Process Automation) in 2012 and more recently, Digital OneOffice™ and OneEcosystem™. The HFS mission is to provide visionary insight into the major innovations impacting business operations such as Automation and Process Intelligence, Blockchain, the Metaverse and Web3. HFS has deep business practices across all key industries, IT and business services, sustainability and engineering.

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