State of the U.S. Energy Industry Report

May 2021

COGNITE AXIOS STUDIO The Harris Poll
Harris Insights & Analytics LLC, A Stagwell Company

Why now?

Since the first industrial revolution, industrial operations have powered innovation, improved living standards, and moved humanity forward. But our industrial and economic progress over the last two centuries has not come without grave environmental and climate consequences. The heavy-asset industry and energy sectors today account for roughly 50% of total greenhouse gas emissions, and the onus is on the current generation of industrial leaders and innovators to get that to zero.

The world is changing fast, and their own companies' survival is at stake. In the long run, only those who can become sustainable will remain profitable, attract investments, and retain the support of customers and stakeholders. Industry leaders point to technology, talent, and financials as the right ingredients for future net zero operations and environmental sustainability. But what's the right recipe? What are leaders of industry actually doing and discussing behind closed doors in order to get us there?

Cognite conducted this study in partnership with Axios Studio and Harris Poll to get the unfiltered answers from power players in American industry. In it, we look behind the PR curtain. This study takes stock of how industry leaders see their companies progressing, where they see obstacles & opportunities, and what they see as the most transformative tools for taking on the energy transition to become successfully, profitably sustainable.

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Introduction and methodology

Methodology

Objective of research: To shed light on the state of the U.S. energy industry, exploring the relationship of technology, sustainability, and profitability.

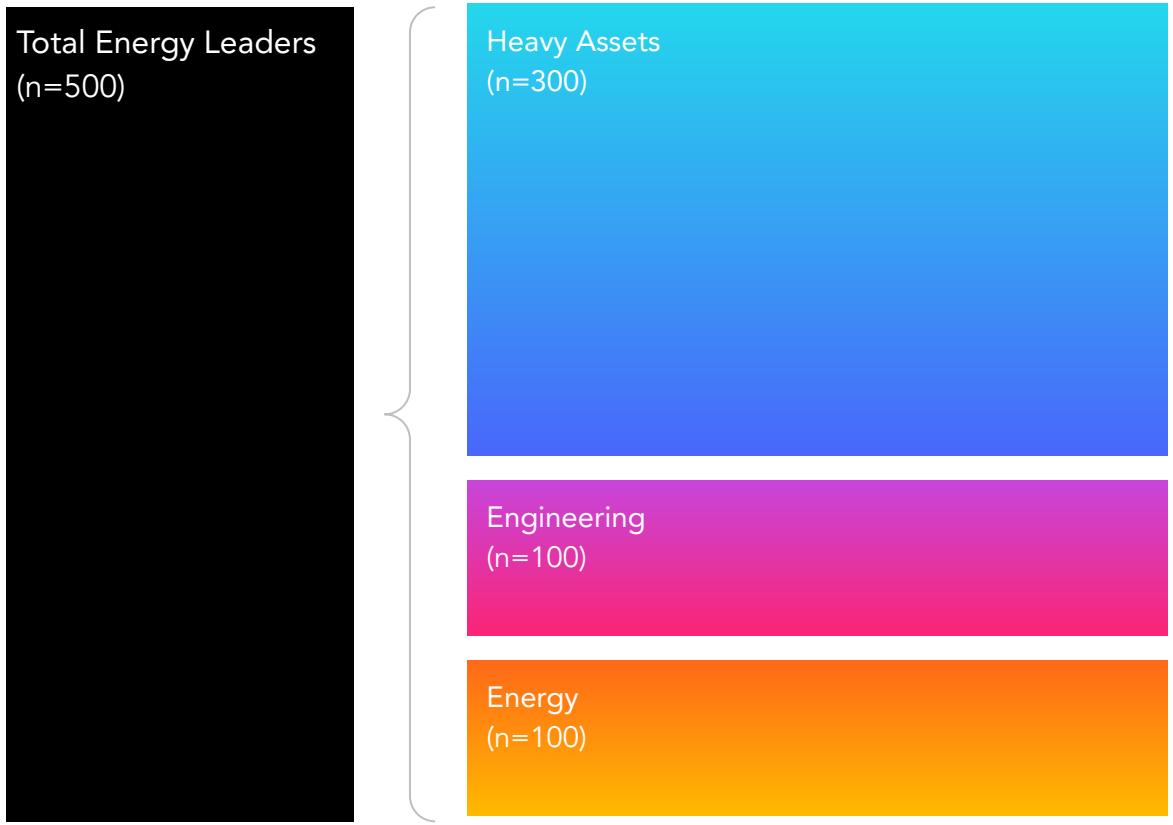
Methodology: This survey was conducted online within the United States by The Harris Poll on behalf of Cognite and Axios.

Fielded: February 15, 2021 – March 12, 2021, among 500 U.S. energy leaders.

This online survey is not based on a probability sample and therefore no estimate of theoretical sampling error can be calculated.

The Axios newsroom was not involved in the creation of this report.

Sample: Across all groups n=500



Executive summary

Corporate politics are preventing the industry from advancing sustainability

Political agendas or posturing are the number one roadblock to achieving sustainability as over two-thirds say companies are “more talk than action” (68%). 3-in-4 also agree, “many companies in this industry say they want to be more environmentally sustainable but aren't willing to actually shoulder the cost of doing so” (76%), and that “the public messaging about what companies in the industry are doing to address environmental sustainability is different than the conversations had behind closed doors” (75%).

Energy leaders are calling for increased transparency to drive meaningful change

Strong majorities believe that “the industry needs to be more open and transparent about the challenges they face in developing environmentally sustainable solutions” (85%) and attest, “if we really want to solve environmental sustainability issues, we need to start taking action, instead of just talking about it” (85%).

Technology is the “#1 most important next step for driving sustainability”

(68%) – surpassing public sentiment (48%), politics (46%), and profits (31%). Energy leaders agree that “technology is “critical to making their company more environmentally sustainable” (84%) and that they “can't achieve their environmental sustainability goals without technology” (81%). In addition to long-term progress, 77% say, “technology is an immediate solution to address environmental sustainability.”

Technology is also critical for operational optimization

The #1 reason energy leaders prioritize environmental sustainability is improving operational efficiency, citing top goals as making operations more environmentally sustainable (88%) and becoming more data-driven (86%). Energy leaders also say technology and data can help reduce waste and drive informed decisions.

The drive to net zero

68% of energy leaders believe the industry can reach net zero emissions by 2050 – and a majority believe decarbonization would ultimately decrease or maintain their operating costs (62%). A similar percentage say that having perfectly integrated data to understand emission reduction would have an impact on advancing their efforts toward net zero (64%).

02

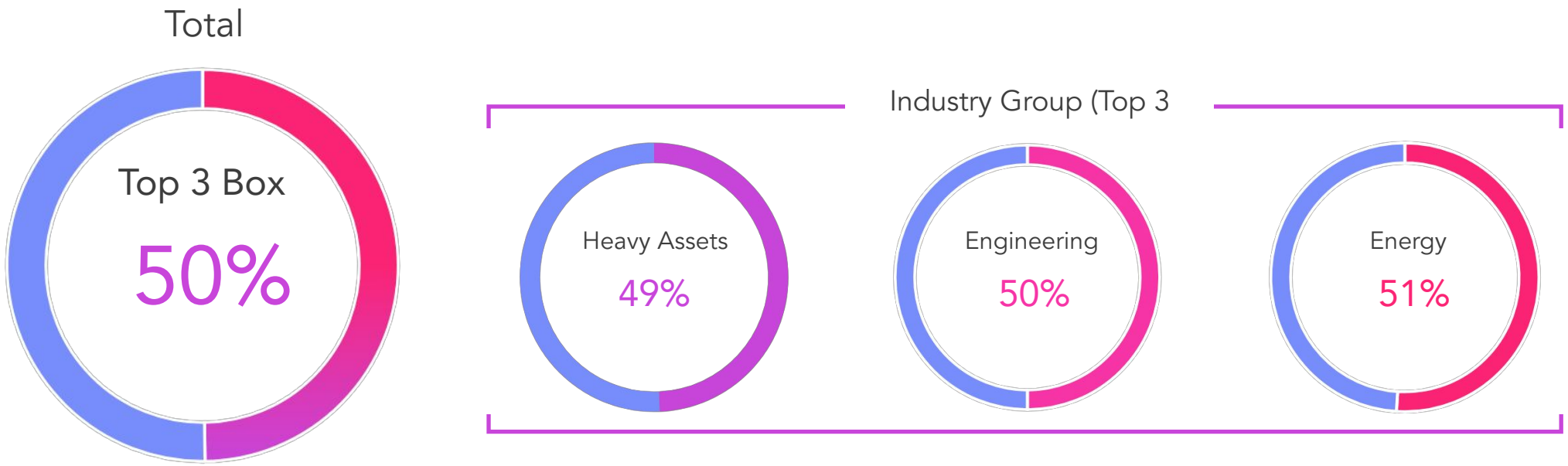
Industry outlook

State of sustainability in the energy sector

Energy leaders are divided on the industry's current efforts to address sustainability as only half feel satisfied today

Rating the industry's efforts to genuinely address environmental sustainability

Top 3 Box (8-10 out of 10, where 1 is very poor and 10 is very good)



B2B Q100: Overall, how would you rate the industry's efforts to genuinely address environmental sustainability?
(Base size: Total n=500) (Heavy Assets n=300, Engineering n=100, Energy n=100)

Political agendas are the number one roadblock to achieving sustainability as over two-thirds say companies are "more talk than action" (68%)

Top barriers preventing the energy industry from achieving true environmental sustainability

Energy leaders say…

01	Politics / Posturing (i.e., saying one thing and doing another)	41%
02	Lack of investment in the right technology	39%
03	Lack of regulatory incentives / political will	39%
04	Greed	30%
05	Lack of budget / cost	29%
06	Lack of understanding or education on the issue	28%
07	Lack of talent / knowledge	19%

Those in Engineering feel lack of understanding / education is a larger barrier (38%) compared to those in Heavy Assets (26%) and Energy (25%)

68%

energy leaders

"More often than not, companies that announce environmental sustainability initiatives in the U.S. are not taking the steps to actually back them up (i.e., more talk than action)."

"This is more of a political issue than a practical problem."

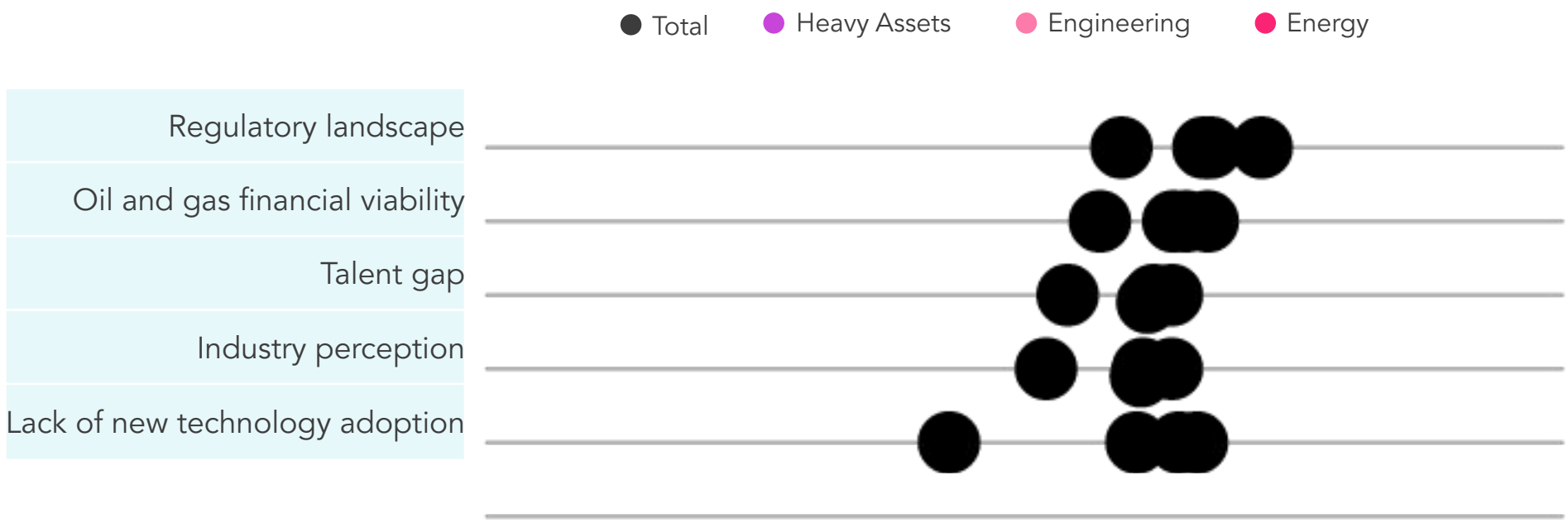
B2B Q103: Which of the following do you believe are the biggest barriers, if any, that are preventing the energy industry from achieving true environmental sustainability? Please select up to 3.
B2B Q108: Please indicate how much you agree or disagree with the following statements.
(Base size: Total n=500)

Shifting regulatory and economic realities are also cause for concern when it comes to advancing sustainability

Leading concerns about environmental sustainability efforts

Top 2 Box (3-4 out of 4, where 1 not at all concerned and 4 is very concerned)

77% of energy leaders are "very concerned" about 3 issues or more



"Regulators do not want to change how they regulate. They are a key part of the equation and will need to approve of the costs necessary for utilities to meet net zero. So far, they are more of an impediment than the industry. Also, legislators do not fully understand the industry or its challenges and pass laws by sound bite rather than thoughtful policy."

B2B Q202: How concerned are you about the following areas related to your company's environmental sustainability efforts?
(Base size: Total n=500) (Heavy Assets n=300, Engineering n=100, Energy n=100)

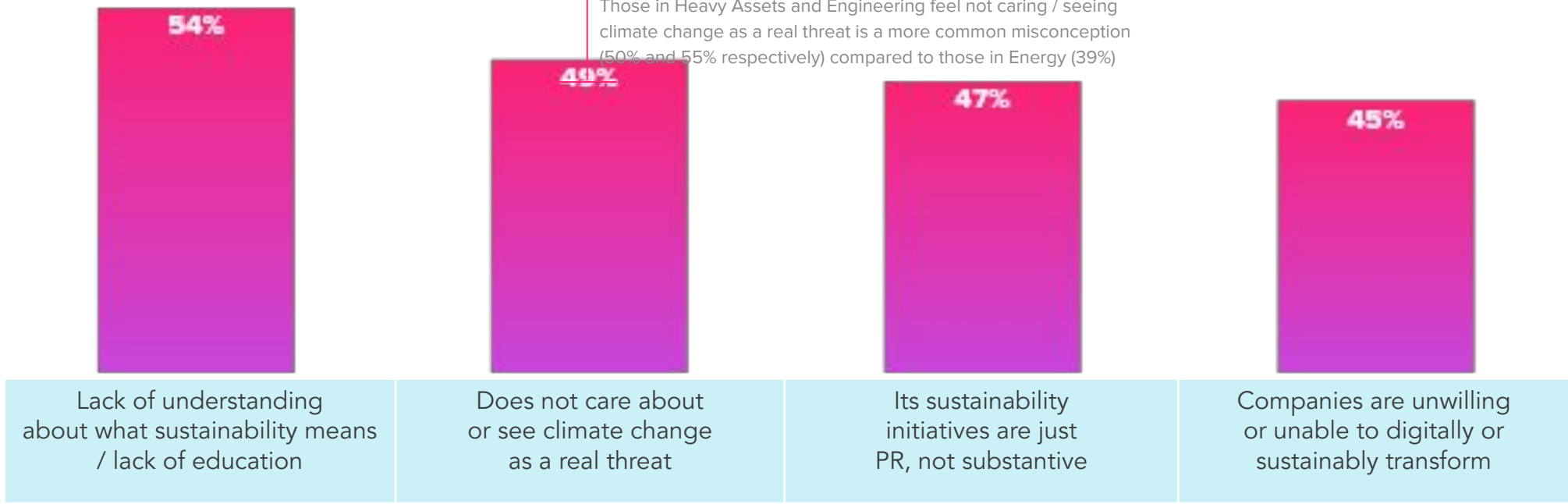
Lack of public understanding is another hurdle industry leaders face in advancing environmental sustainability

Common misconceptions the general public has about the U.S. energy industry and environmental sustainability

Top 3 misconceptions

"More publicity would help a great deal."

Those in Heavy Assets and Engineering feel not caring / seeing climate change as a real threat is a more common misconception (50% and 55% respectively) compared to those in Energy (39%)



B2B Q104: Which of the following, if any, is a common misperception the general public has about the U.S. energy industry and environmental sustainability? Please select up to 3
(Base size: Total n=500)

Energy leaders are calling for increased transparency around the real resources needed to create meaningful change

85%

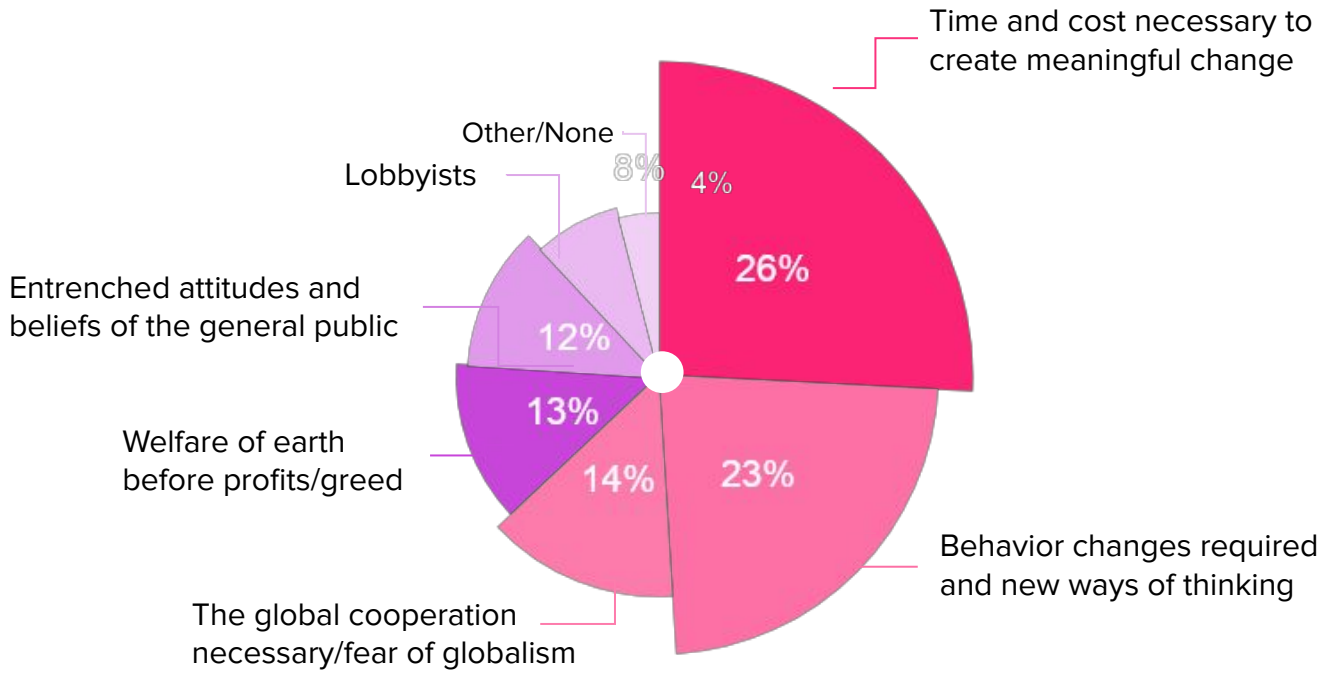
energy leaders

"The industry needs to be more open and transparent about the challenges they face in developing environmentally sustainable solutions (e.g., costs, talent gap, etc.)."

"Initial cost of startup and retooling of current equipment."

"Inability to change attitudes."

What is the industry reticent to publicly address?



B2B Q105: In your opinion, what is the most important part of the environmental sustainability issue in the U.S. that the industry is reticent to publicly address?
B2B Q109: Please indicate how much you agree or disagree with the following statements.
(Base size: Total n=500)

Energy leaders agree it's time to "start taking action, instead of just talking about it" (85%)

75%

energy leaders

Heavy Assets 80% | Engineering 74% | Energy 62%

"The public messaging about what companies in the industry are doing to address environmental sustainability is different than the conversations had behind closed doors."

82%

energy leaders

Heavy Assets 85% | Engineering 82% | Energy 72%

"If the industry can be more honest about the issues we face with becoming more environmentally sustainable, I genuinely believe we can make meaningful progress."

85%

energy leaders

Heavy Assets 86% | Engineering 87% | Energy 80%

"If we really want to solve environmental sustainability issues, we need to start taking action, instead of just talking about it."

B2B Q109: Please indicate how much you agree or disagree with the following statements.
(Base size: Total n=500)

03

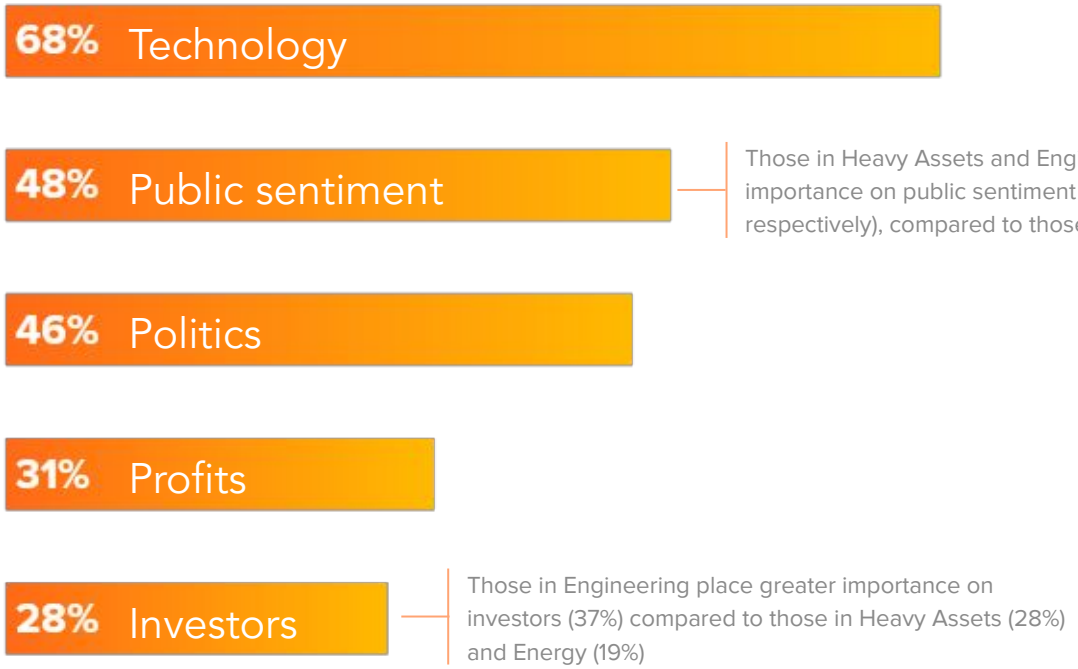
Transformative tech

Rising prioritization of technology to optimize sustainable operations

Energy leaders say technology is the #1 thing that can drive meaningful impact in advancing sustainability

Moving the needle on sustainability

Top 3 most important next steps for driving the industry's environmental sustainability in the U.S.



84%

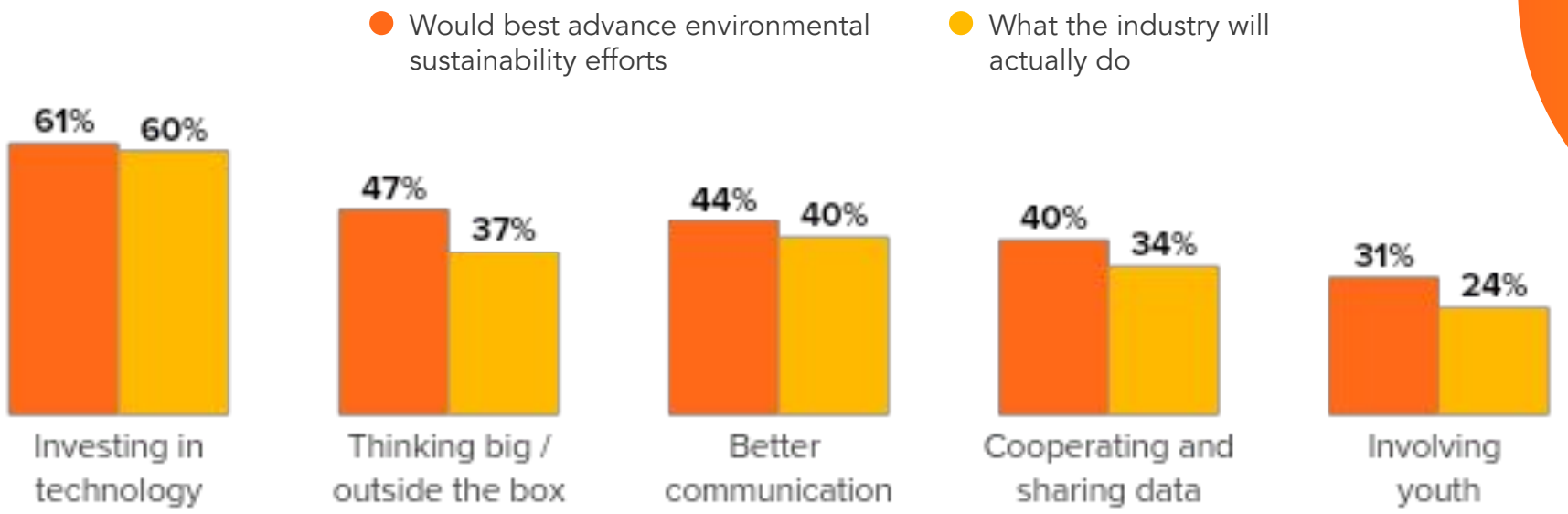
energy leaders

"Technology is critical to making my company more environmentally sustainable."

B2B Q101: In your opinion, what do you believe will be most important for driving the industry's next steps to address environmental sustainability in the U.S.? Please select up to 3.
B2B Q108: Please indicate how much you agree or disagree with the following statements.
(Base size: Total n=500)

A majority say technology is critical to achieving sustainability goals and the most promising area of investment

How the industry can advance environmental sustainability efforts vs. what they will actually do to change the conversation about environmental sustainability



Percentage gap:	2%	10%	4%	6%	7%

81%
energy leaders

"We can't achieve our environmental sustainability goals without technology."

"We need new technology to use in the industry."

B2B Q106: Which of the following actions by the industry, if any, would best advance environmental sustainability efforts? Please select all that apply.
B2B Q107: What do you believe the energy industry will actually do to change the conversation about environmental sustainability? Please select all that apply.
B2B Q108: Please indicate how much you agree or disagree with the following statements.
(Base size: Total n=500)

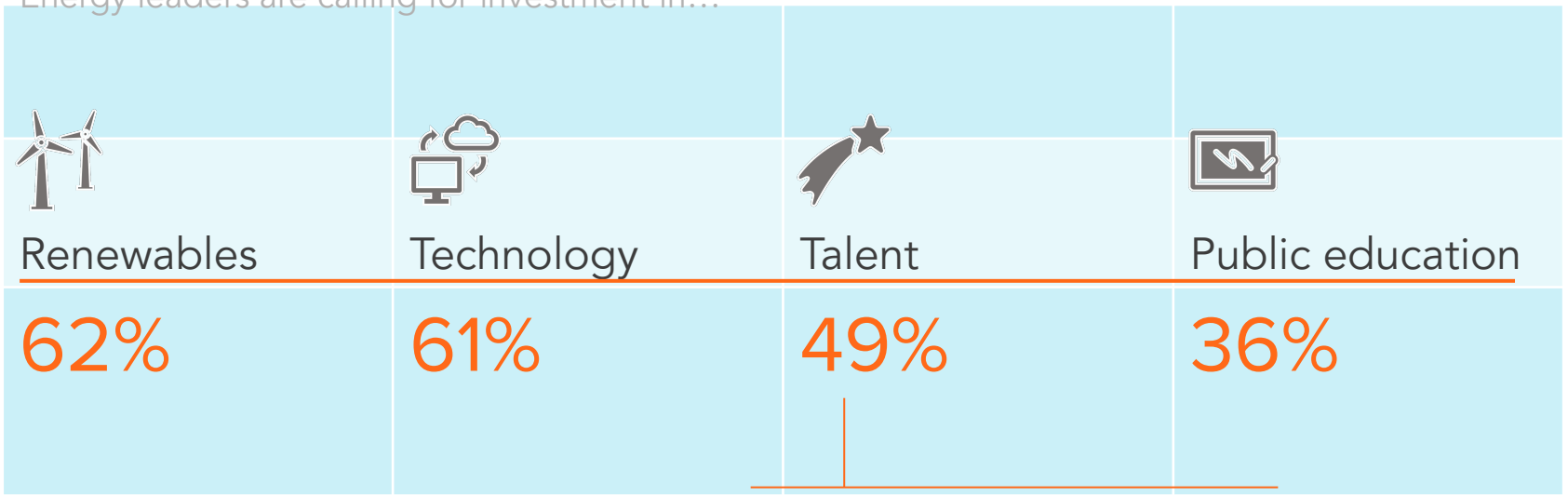
Over 3 in 4 also say "technology is an immediate solution" to jumpstart change when it comes to sustainability (77%)

77%
energy leaders

"Technology is an immediate solution to address environmental sustainability."

Most immediate strategies to address environmental sustainability issues

Energy leaders are calling for investment in…



"Balanced approach between renewable, thermal (natural gas) and nuclear."

"Preparedness for all energy types to work together."

"Invest in new technology and upcoming talent."

Those in Heavy Assets and Engineering feel **talent** is a more immediate strategy (50% and 58% respectively) compared to those in Energy (37%)

B2B Q102: What do you see as the most immediate strategy for energy leaders to address environmental sustainability issues (i.e., could make the biggest difference if implemented tomorrow)? Please select up to 3.
B2B Q108: Please indicate how much you agree or disagree with the following statements.
(Base size: Total n=500)

Energy leaders are prioritizing sustainability in their own organizations, driven by operational efficiency

Prioritizing environmental sustainability

Top 3 most important reasons for prioritizing environmental sustainability at your company

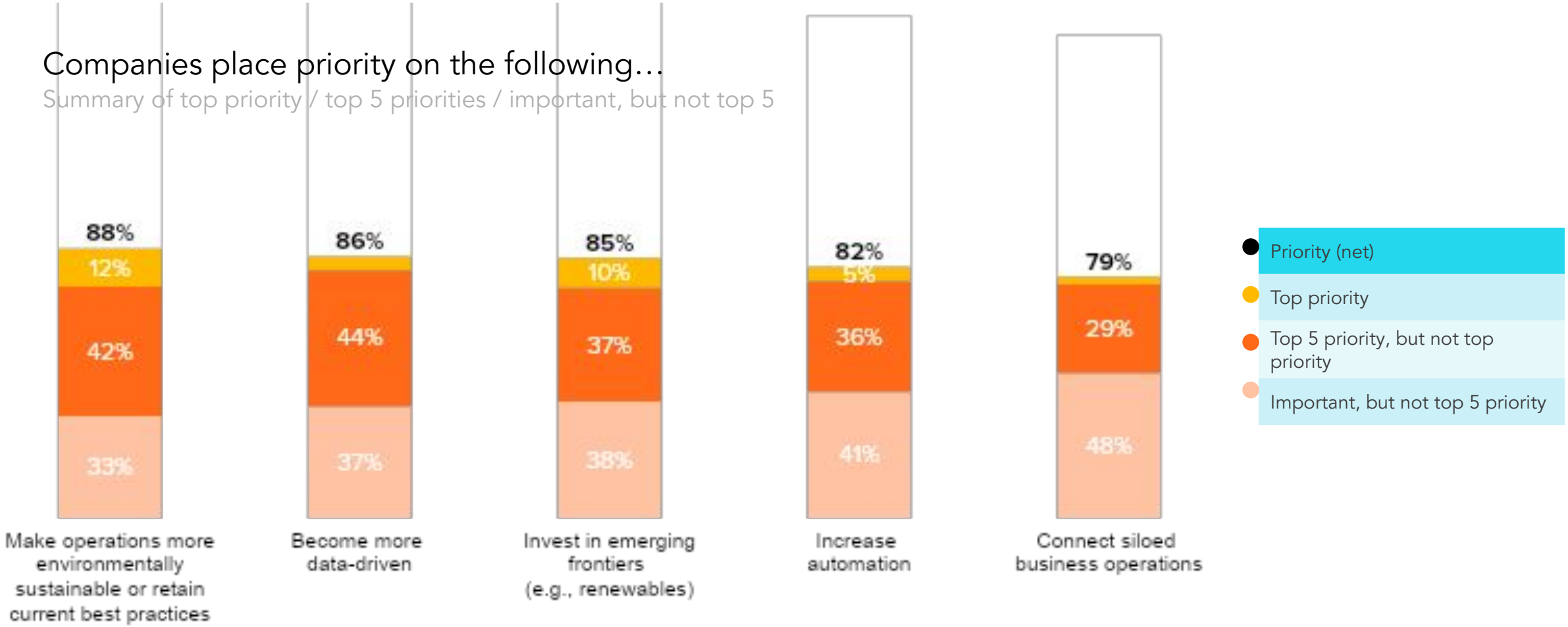
01	Improving operational efficiency	42%
02	Climate change	37%
03	Viability as a company (i.e., we must in order to survive)	27%
04	Cost	27%
05	Government transparency and regulations	26%
06	Increasing profitability	26%
07	Public Pressure	23%
08	Competition	22%
09	Investor relations	19%

B2B Q201: Which of the following, if any, are the top reasons for prioritizing environmental sustainability in your company? Please select up to 3.
(Base size: Energy leaders with sustainability on agenda n=441)

Nearly 9 in 10 say making operations more environmentally sustainable is a priority, with over half saying it is a priority

Companies place priority on the following…

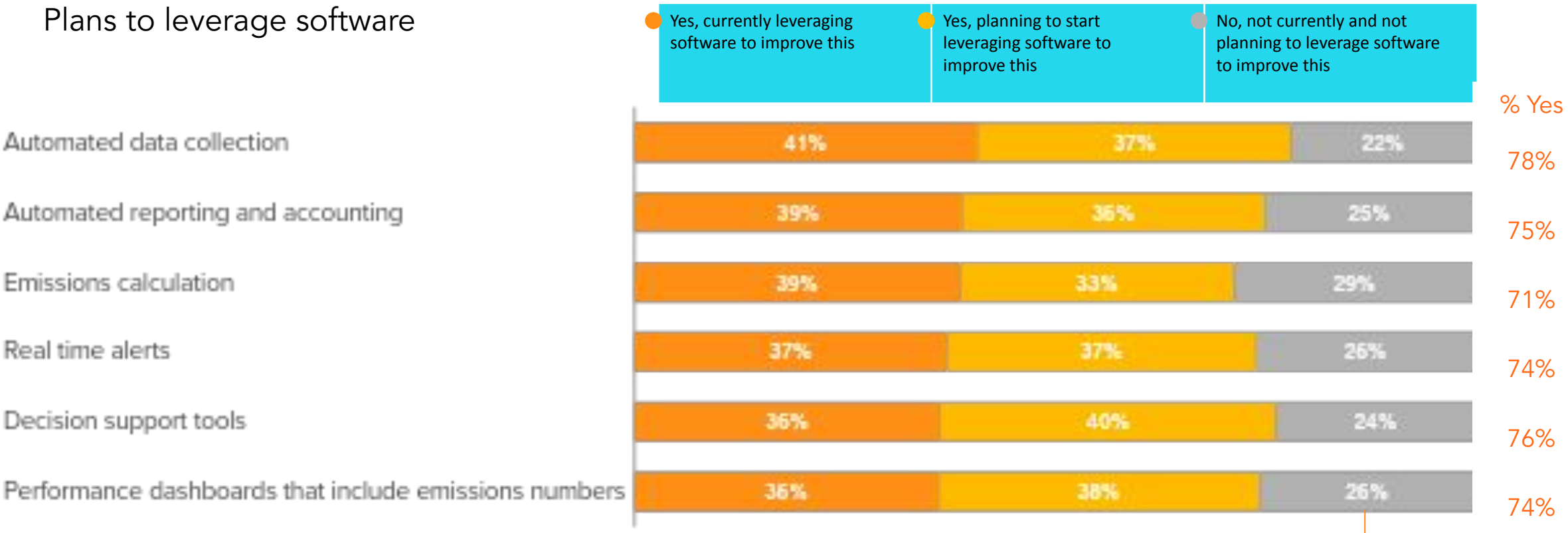
Summary of top priority / top 5 priorities / important, but not top 5



B2B Q200: How much priority does your company place on the following?
(Base size: Total n=500)
See appendix for breakdown by priority

A majority are leveraging or planning to leverage software to automate processes and monitor performance

Plans to leverage software



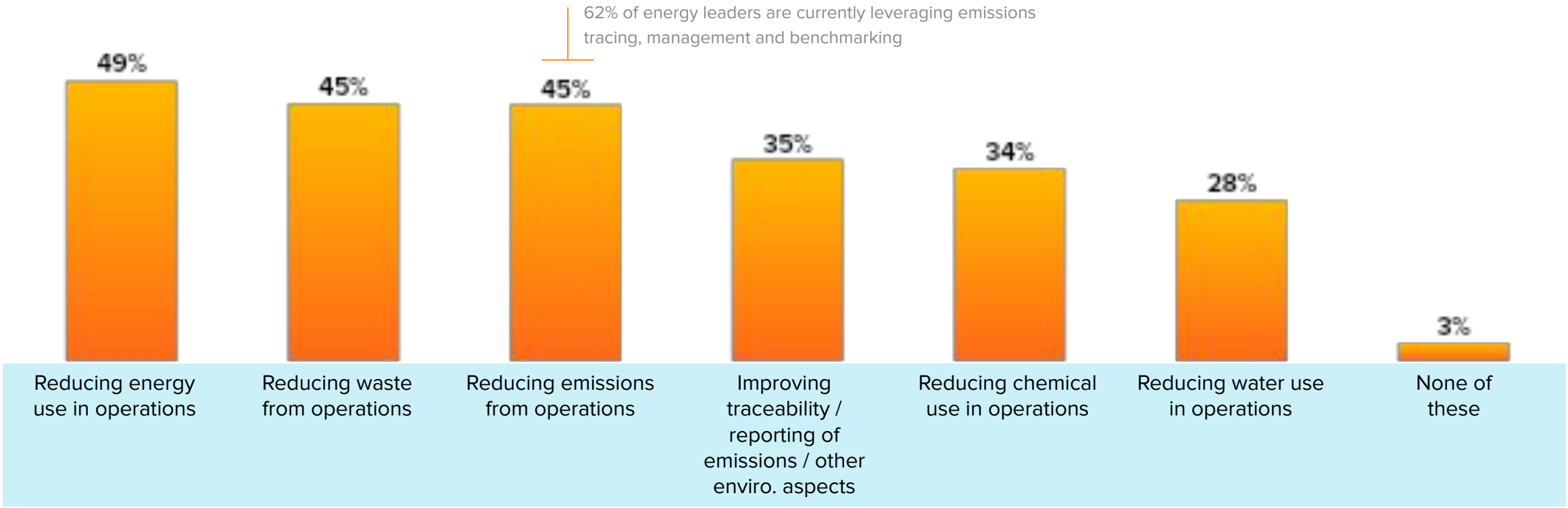
30% for those in Heavy Assets compared to Engineers and Energy groups (18% and 19% respectively)

B2B Q207: Is your company leveraging or planning to start leveraging software to improve environmental sustainability of operations in any of the following areas?
(Base size: Total n=500)

97% of energy leaders say technology can improve environmental sustainability operations in some way

How technology can improve environmental sustainability operations

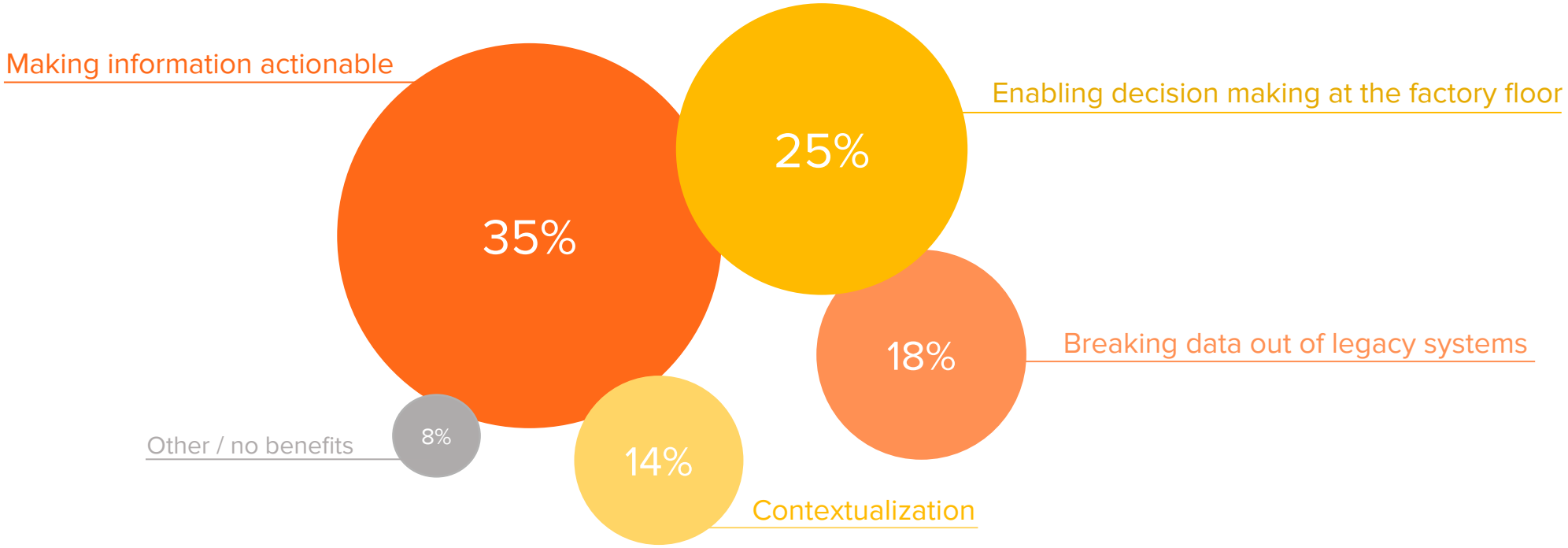
Top 3 areas tech will play a role



B2B Q209: Where do you see technology playing the biggest role in improving the environmental sustainability of your operations? Please select up to 3.
(Base size: Total n=500)

Using data to inform sustainability efforts drives more meaningful action and decision-making

Biggest benefit of using data to address environment sustainability in operations



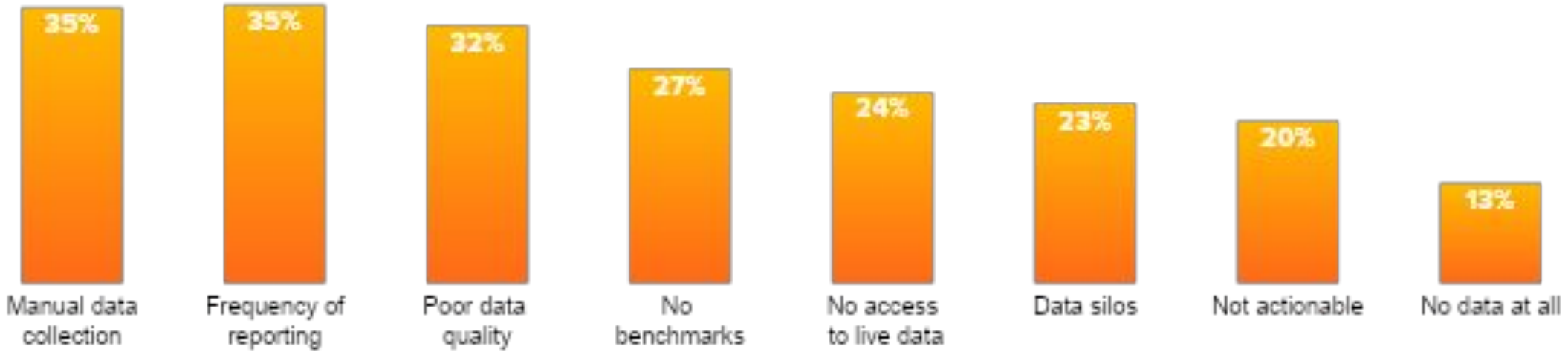
B2B Q208: Which of the following, if any, is the biggest benefit of using data to address environmental sustainability in your operations? Please select one.
(Base size: Total n=500)

Manual data collection is a top challenge, as is reporting frequency and data quality

Biggest challenges using data to address environmental sustainability

Top 3 leading challenges

Those in Engineering feel frequency of reporting is a bigger challenge (46%) compared to those in Heavy Assets and Energy (35% and 24% respectively)



B2B Q212: What are the biggest challenges related to using data to address environmental sustainability in your company? Please select up to 3.
(Base size: Total n=500)

04

The journey to net zero

A path forward for the industry long-term

A majority of energy leaders feel the industry can reach net zero by 2050

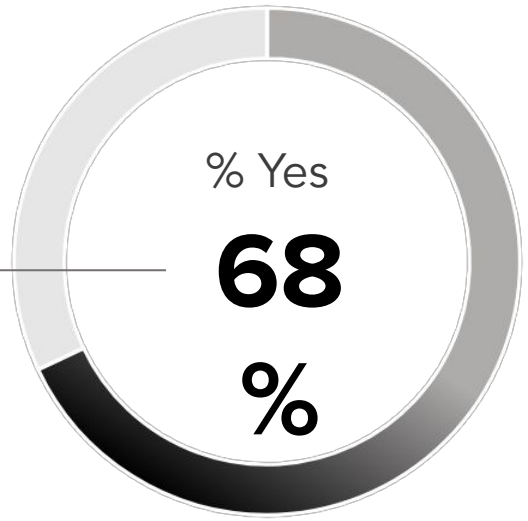
81%

energy leaders

"Environmental sustainability needs to be at the forefront for all companies in the industry - not just some - in order to make an impact."

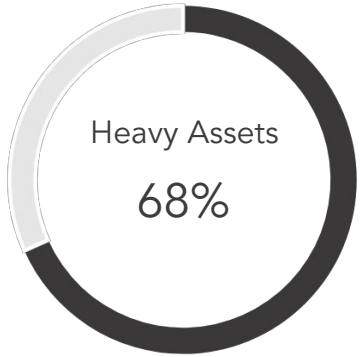
Believe the industry can reach net zero emissions by 2050

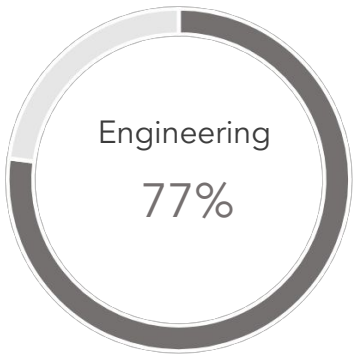
Total

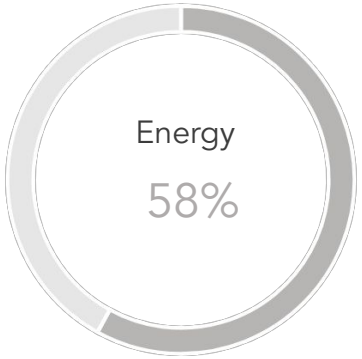


This number jumps to **76%** when looking at sustainability decision makers with final say

Industry Group (% yes)







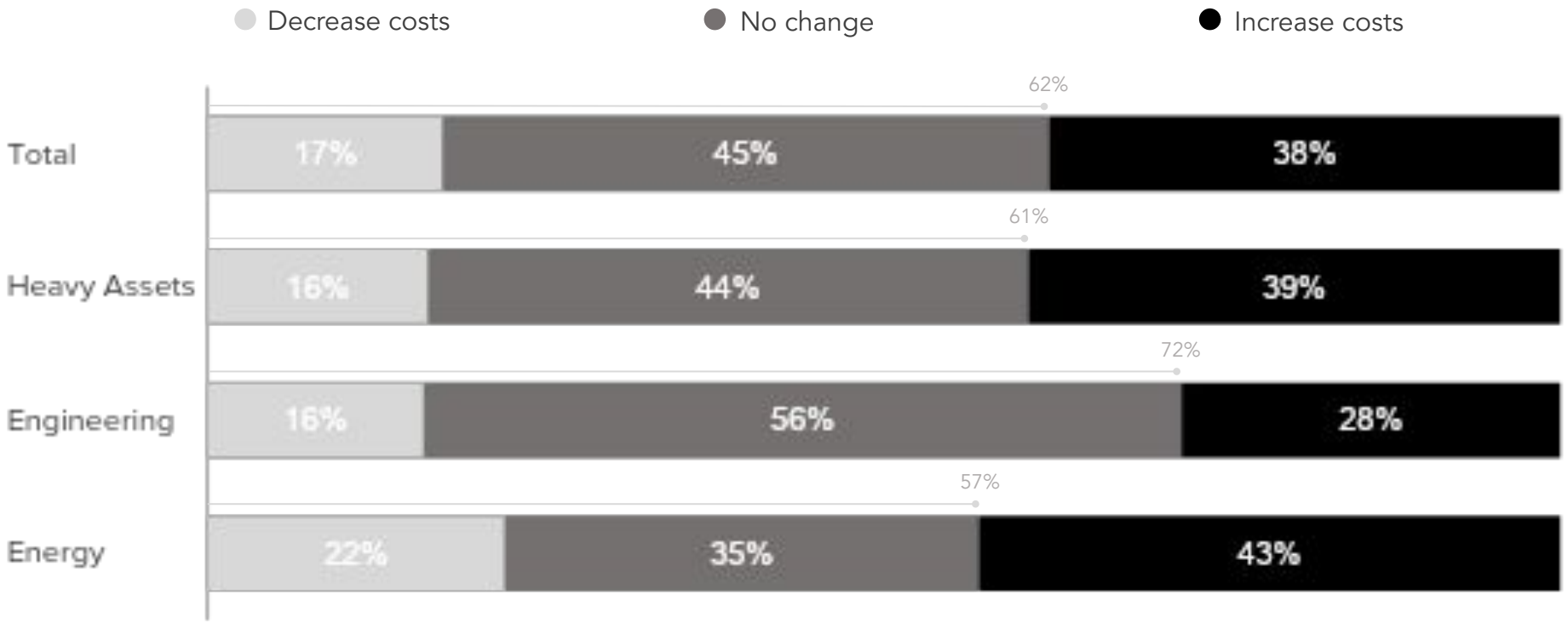
"It has to be a value, not an initiative."

B2B Q108: Please indicate how much you agree or disagree with the following statements.
B2B Q301: Do you believe that the industry can successfully navigate its energy transition and achieve net zero emissions by 2050?
(Base size: Total n=500) (Heavy Assets n=300, Engineering n=100, Energy n=100)

A majority believe decarbonization would ultimately decrease or maintain their operating costs (62%)

"The net zero is a problem in terms of initial outlay versus the loss of profits. Tough balancing act."

Impact of decarbonization on company's operating costs



B2B Q210: Do you see decarbonization of your company's operations as something that will increase or decrease your operating costs?
(Base size: Total n=500) (Heavy Assets n=300, Engineering n=100, Energy n=100)

In order to move the needle, financial and regulatory incentives are necessary, followed by lower costs

Moving the needle on net zero

Top 3 most important next steps for navigating energy transition toward net zero

Those in Heavy Assets and Engineering place greater importance on digital solution (54% and 55% respectively) compared to those in Energy (42%)

Those in Heavy Assets and Engineering place greater importance on new talent (47% and 46% respectively) compared to those in Energy (32%)

76%

energy leaders

"Many companies in this industry say they want to be more environmentally sustainable, but aren't willing to actually shoulder the cost of doing so."

"Better regulations and incentives for utilizing renewable energy."

B2B Q109: Please indicate how much you agree or disagree with the following statements.
B2B Q302: Which of the following, if any, are the most important factors for the US oil and gas industry to successfully navigate its energy transition toward net zero emissions? Please select up to 3.
(Base size: Total n=500)

Key challenges differ by industry leaders

Additional challenges when operationalizing sustainability (group themes)

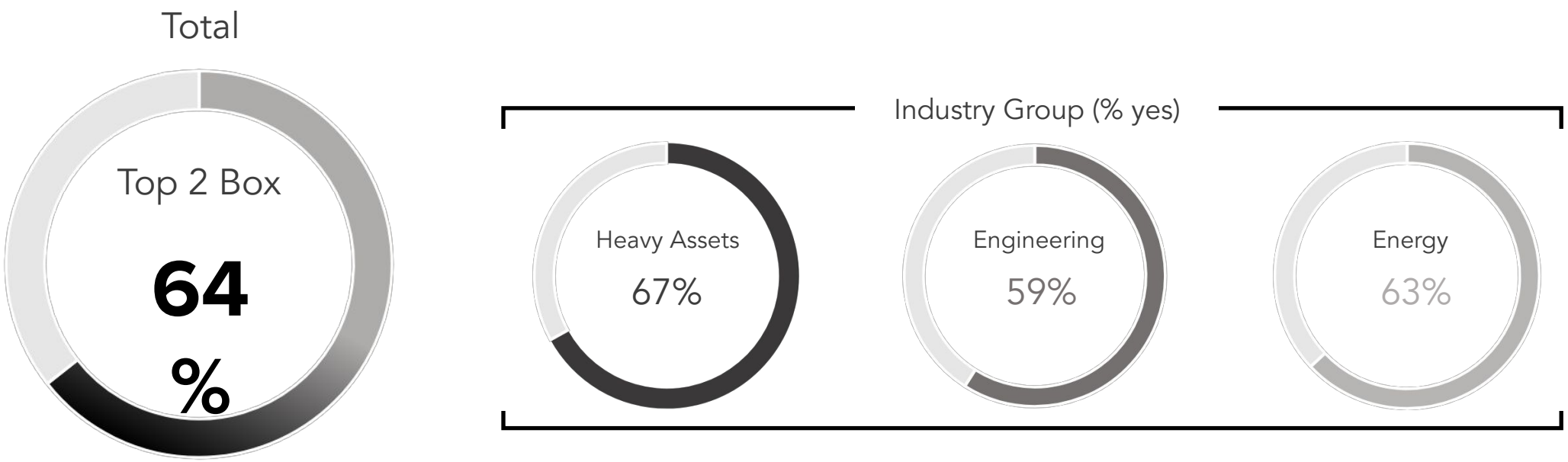
The Deniers	The Educators/ The Evangelists	The Cost-Benefit Analysts	The Technologists	The Regulators (and the De-Regulators)	The Sociologists
"Just look at what is happening in the states during the winter months, green energy is frozen. When fuel prices go up, food and cost to heat and cool your home follow. I guess when 1/2 of the country is starving people will wake up and see it made a few people really rich and the rest of the country got screwed." "You can't heat your homes or fuel your cars with rainbows, hopes and dreams. Solar, wind and battery power has limitations and are only supplemental resources at best." "Quit dealing with false data and information." "Science is a misnomer. It's all politically based. Those that claim science are looking for political / financial remuneration." "This whole global warming or climate change is a big waste of time and money and only lines the pockets of lobbyists and climate activists."	"Lack of trust in data… half the world doesn't believe global warming exists. Make people aware of science and facts about sustainability." "Getting people to believe in this and take it seriously. Many people simply don't believe in it." "Time to get more technical and engineering talent elected to all levels federal state and local to allow common sense policy and law creation." "Changing mindsets."	"If we spend more on this than we save - either as a company or as a society - then it is kind of pointless. Also just shifting environmental misuse from one area to another area doesn't really help overall either." "The industry as a whole needs huge motivation to change their current path towards sustainable resources. At the moment, margins and profits are dwindling and that's the huge focus to mitigate that loss of income." "The cost and the payback are at times prohibitive." "If it gets in the way of profits, it won't be successful."	"Methods of production and process of technology implementation." "Work environment changes to be supported by technologies." "Incentivize methane capture technologies to reduce release and add to natural gas supply until newer more sustainable energy technologies can reduce methane use." "It is necessary to generate alternative and environmentally sustainable energy sources." "Acknowledge that change is hard, and jobs will be retained as operations / technology changes toward what is needed for zero emissions."	"As long as the fines for breaking environmental laws are lower than the implementation of permanent processes to eliminate the pollution there will never be swift change in the industry." "Regulatory support is going to be critical to be successful in our sustainability efforts." "Get the government out of our industry." "Lacking of strong regulations." "None; keep the government regulators out of it." "We need a stable government to set standers."	"I think the biggest challenge is overcoming political agendas and corporate greed and just do what is right for the environment and the planet as a whole." "Culture of machismo deflects from profit driven green initiatives." "I think greed is the biggest inhibitor of sustainability and success." "A change in the culture of the staff is needed – sustainability policies must be more aggressive be present in the mission and objectives of the company."

(Base size: Total n=500)

Ultimately, two-thirds say having perfectly integrated data to understand emission reduction would have an impact

Impact of perfectly integrated / contextualized data to understand emission reduction

Top 2 Box (3-4 out of 4, where 1 is no impact and 4 is large impact)



B2B Q213: If you had a magic wand which could enable all data to be perfectly integrated and contextualized for better understanding of emission reduction potential tomorrow, how much would it impact your company's bottom line?
(Base size: Total n=500) (Heavy Assets n=300, Engineering n=100, Energy n=100)

05

Appendix

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Energy leaders agree, the industry is making an effort to address its role in climate change

72%
energy leaders

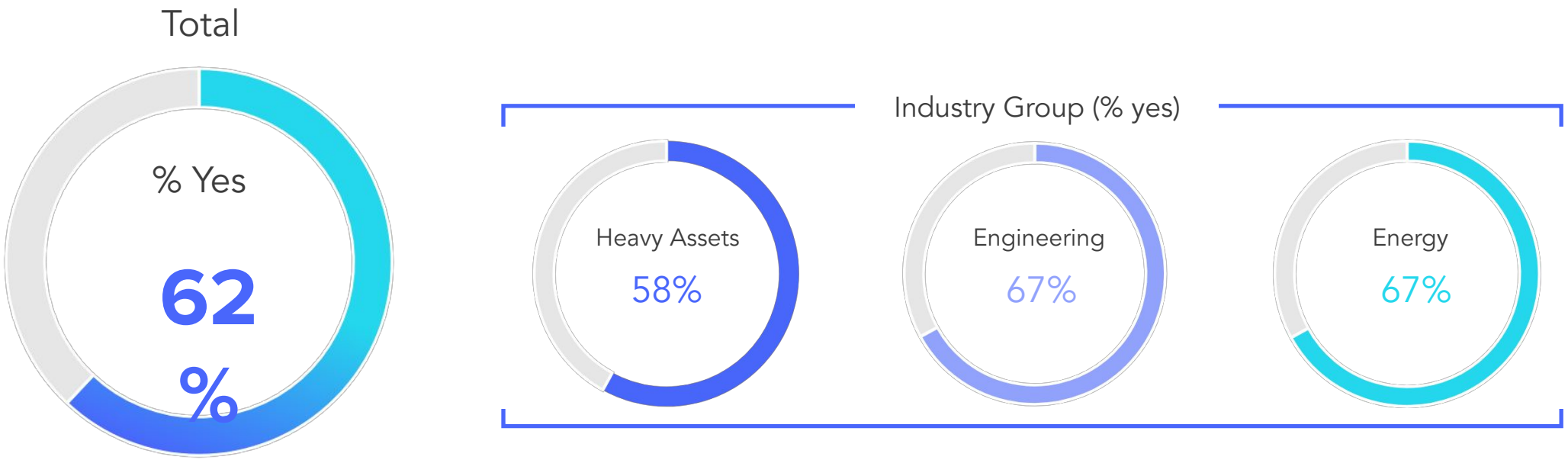
"I believe the industry is making a genuine effort to address its role in climate change (i.e., find meaningful solutions that sustainably, safely and securely will guide them through the necessary energy transition)."

B2B Q108: Please indicate how much you agree or disagree with the following statements
(Base size: Total n=500)

Over half of energy leaders say they are currently leveraging technology to track sustainability efforts

Currently leveraging technology for emissions tracing, management and benchmarking

Energy leaders say…

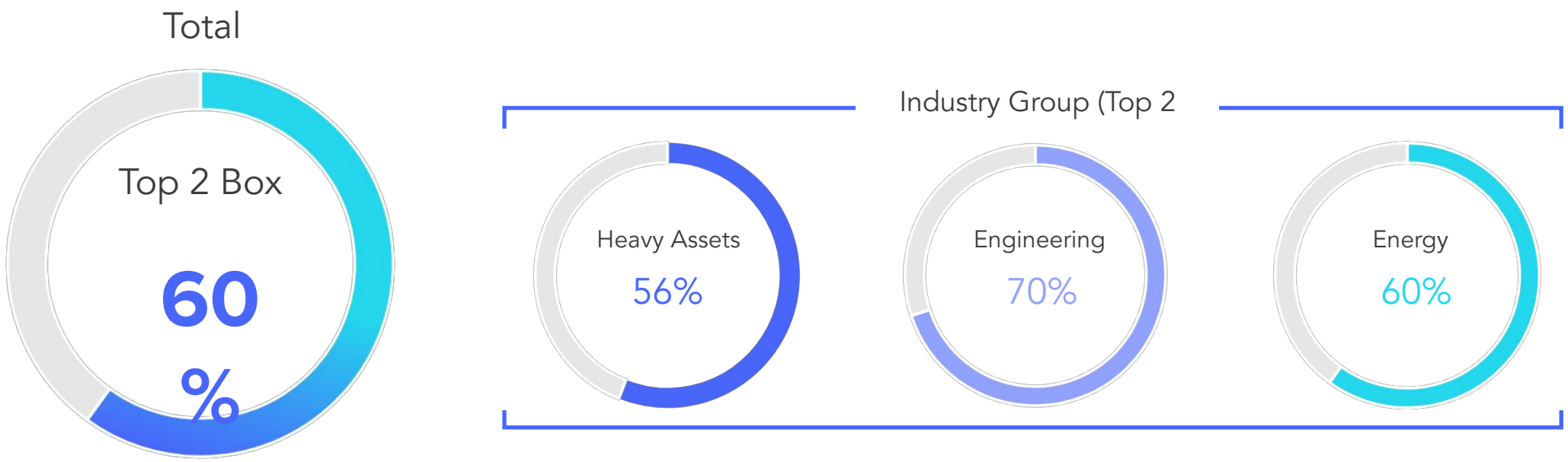


B2B Q204: Does your company currently leverage technology for emissions tracing, management and benchmarking (e.g., live analytics dashboards, using machine learning for forecasting of emissions, integrating emissions data to production forecasting)?
(Base size: Total n=500) (Heavy Assets n=300, Engineering n=100, Energy n=100)

Most believe their technology and sustainability agendas are aligned today, especially those in engineering

Overall alignment of company's environmental sustainability & digitalization agendas

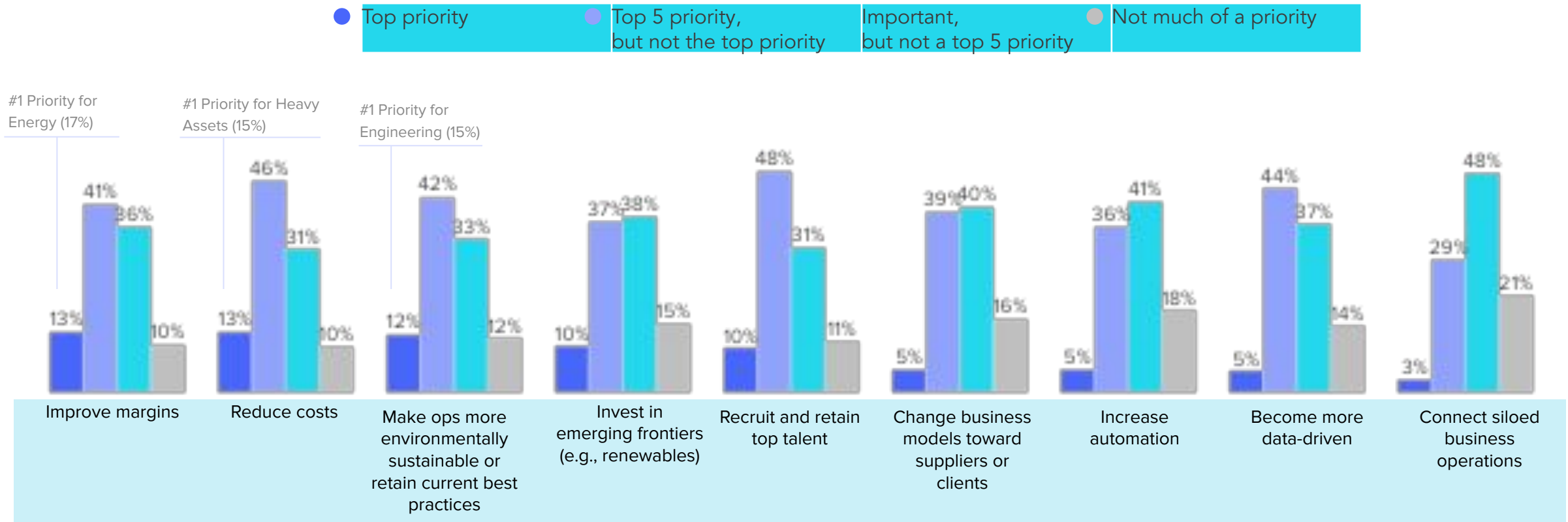
Top 2 Box (4-5 out of 5, where 1 is not aligned and 5 is fully integrated)



B2B Q206: Overall, how aligned are your company's environmental sustainability and digitalization agendas (i.e., use of technology to advance sustainability initiatives)?
(Base size: Total n=500) (Heavy Assets n=300, Engineering n=100, Energy n=100)

Breakdown of company priorities

Companies place priority on the following…



B2B Q200: How much priority does your company place on the following?
(Base size: Total n=500)

Firmographics

Company Type				
	Total (n=500)	Heavy Assets (n=100)	Engineering (n=100)	Energy (n=100)
Private company	70%	71%	77%	59%
Public company	26%	26%	18%	34%
Nonprofit or governmental agency	4%	3%	5%	6%
Not Sure	1%	1%	0%	1%

2020 Revenue				
	Total (n=500)	Heavy Assets (n=100)	Engineering (n=100)	Energy (n=100)
<500 million	40%	44%	33%	36%
500 million to <1 billion	19%	19%	27%	10%
1 billion to <5 billion	20%	20%	23%	19%
5 billion +	17%	15%	12%	25%
Nonprofit or governmental agency	0%	0%	1%	1%
Decline to answer	4%	2%	4%	9%

Firmographics

Total Employees

	Total (n=500)	Heavy Assets (n=100)	Engineering (n=100)	Energy (n=100)
1 to 249	40%	40%	46%	33%
250 to 999	20%	17%	29%	18%
1,000 to 4,999	24%	26%	15%	29%
5,000 to 14,999	9%	10%	7%	8%
15,000 +	7%	7%	3%	12%

Company Location

	Total (n=500)	Heavy Assets (n=100)	Engineering (n=100)	Energy (n=100)
Urban (e.g., in an office)	74%	72%	82%	73%
Non-urban (e.g., at a job site)	26%	28%	18%	27%

Company Work Environment

	Total (n=500)	Heavy Assets (n=100)	Engineering (n=100)	Energy (n=100)
Most employees work from home	11%	7%	17%	15%
More employees work from home than on-site or in an office	19%	18%	24%	16%
Equal mix of at home versus on-site or in an office	22%	18%	32%	25%
More employees work on-site or in an office than from home	28%	29%	22%	31%
Most employees work on-site	20%	27%	5%	13%