BCG + CO2 AI

Boosting Your Bottom Line Through Decarbonization

Carbon Emissions Survey Report 2024

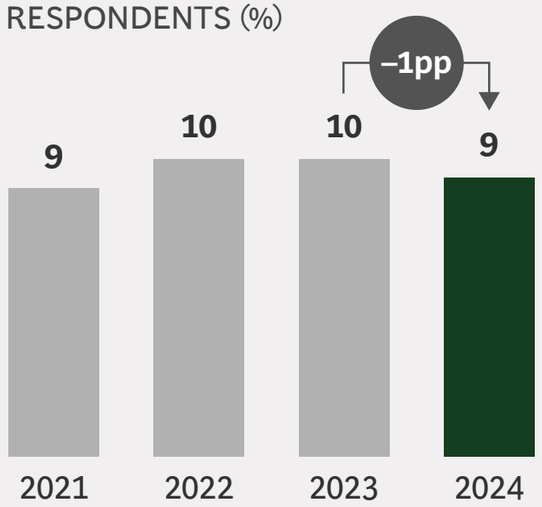
SEPTEMBER 2024

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Progress on climate issues has stagnated

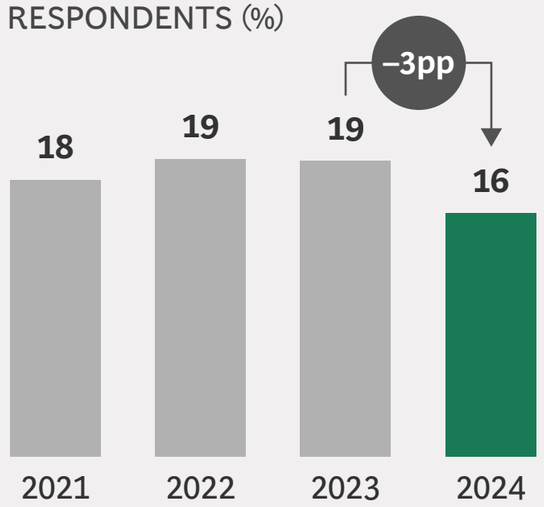
Only 9%

of companies comprehensively report Scope 1, 2, and 3 emissions



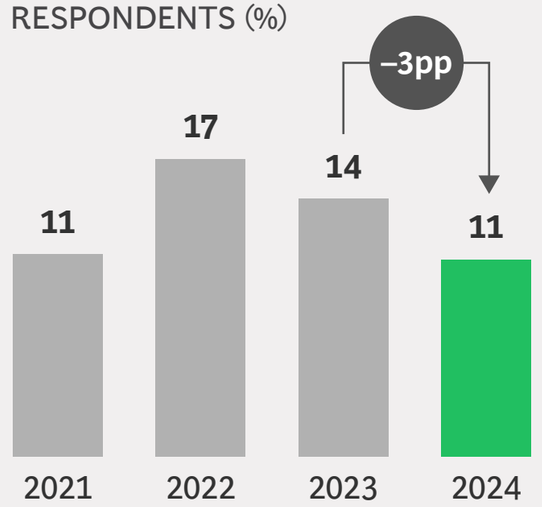
Only 16%

have set targets across all scopes[1]



Only 11%

have reduced their emissions in line with their ambitions

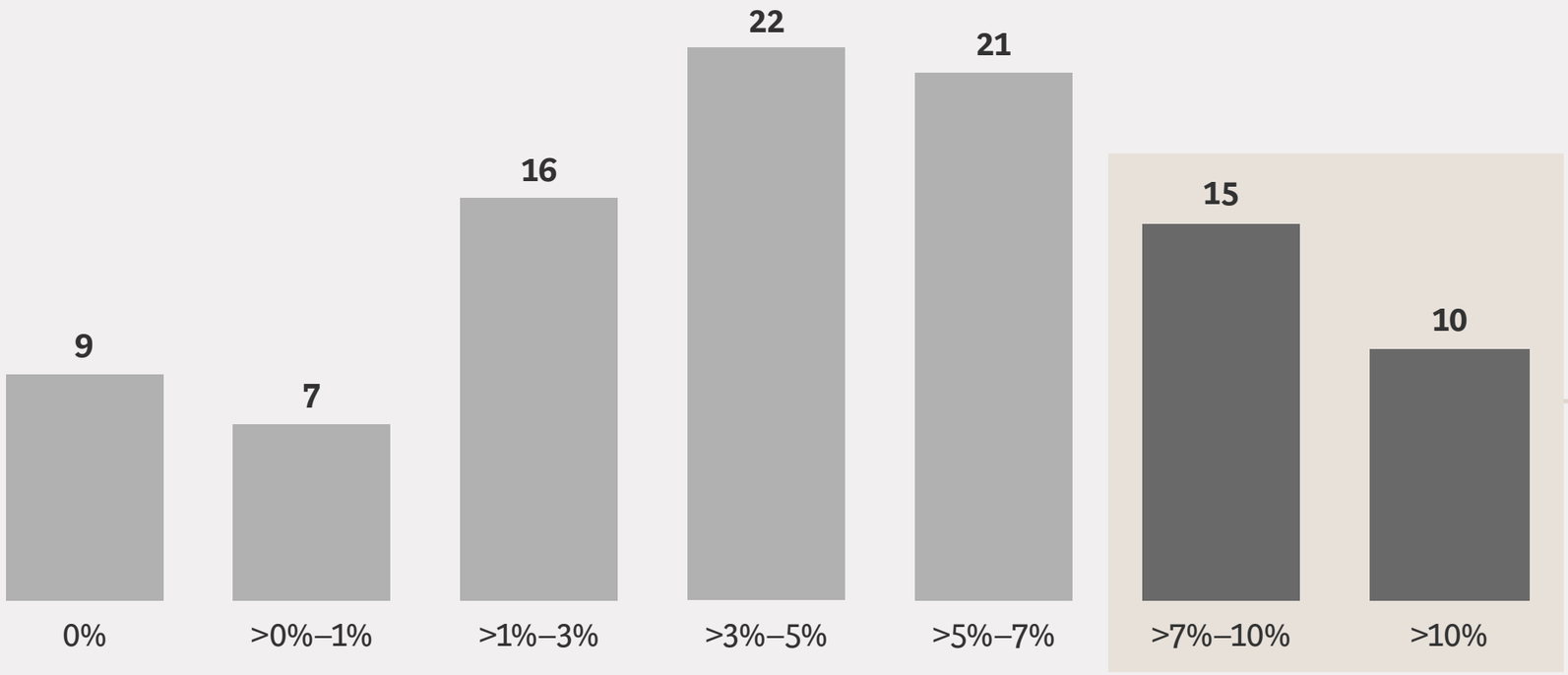


Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
[1]Inclusive of Science Based Targets initiative (SBTi) and non-SBTi targets.

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Climate leaders report approximately $200 million in net benefits from their decarbonization efforts

REPORTED ANNUAL DECARBONIZATION BENEFITS (% OF RESPONDENTS)



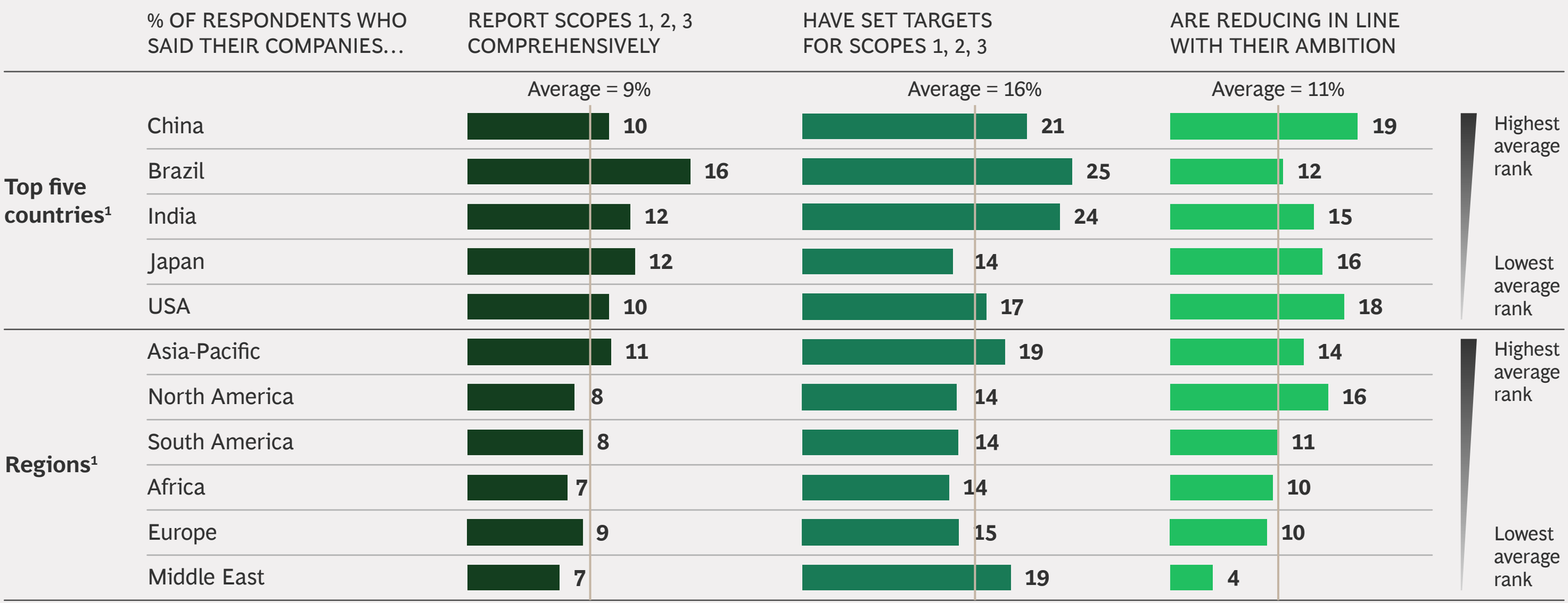
25% of companies reported annual decarbonization benefits worth at least **7% of sales**

This equates to about **$200 million** in net benefits after investments

Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

China, Brazil, and India are among the leaders in reporting, target setting, and reducing emissions in line with ambitions



Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.

[1]Top countries/regions based on average ranking across reporting, target setting, and reducing emissions in line with their ambitions. For countries, average rank determined among countries with 80 or more respondents; the top five countries shown are those with the highest average rank across the three categories. Percentages are rounded.

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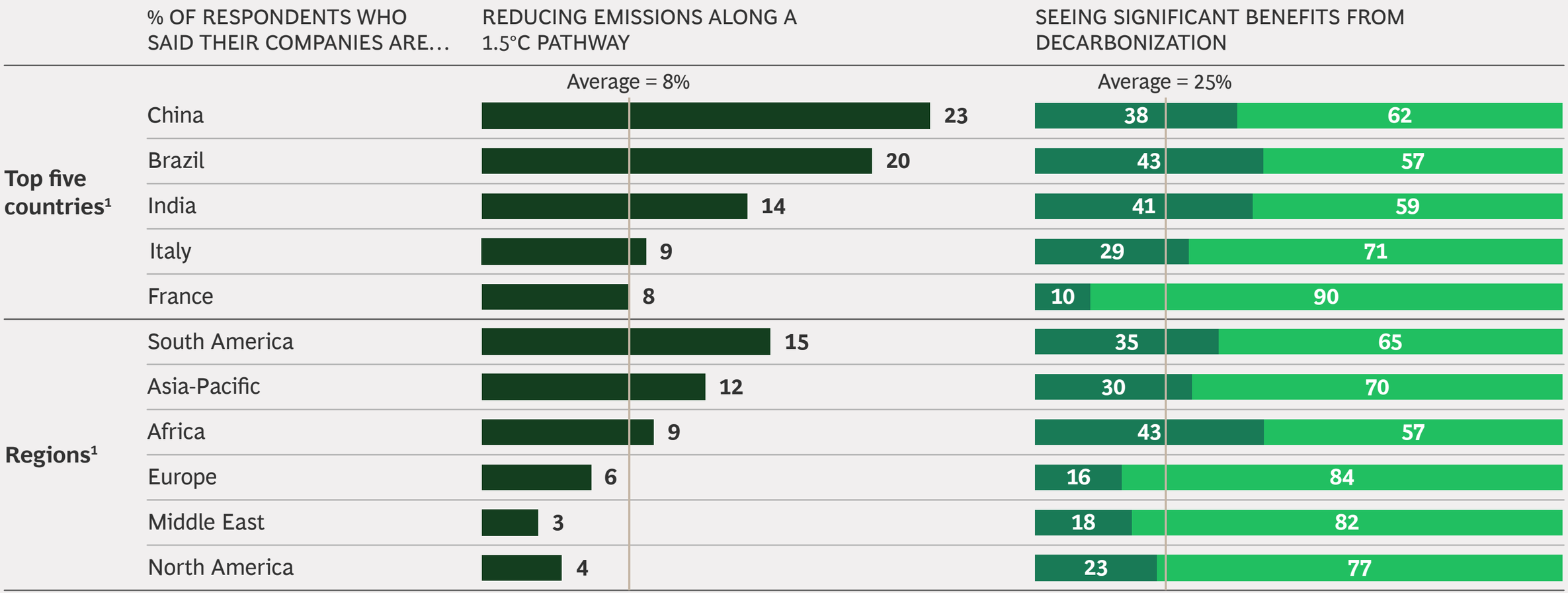
China, Brazil, and India also lead in reducing emissions and securing value from decarbonization

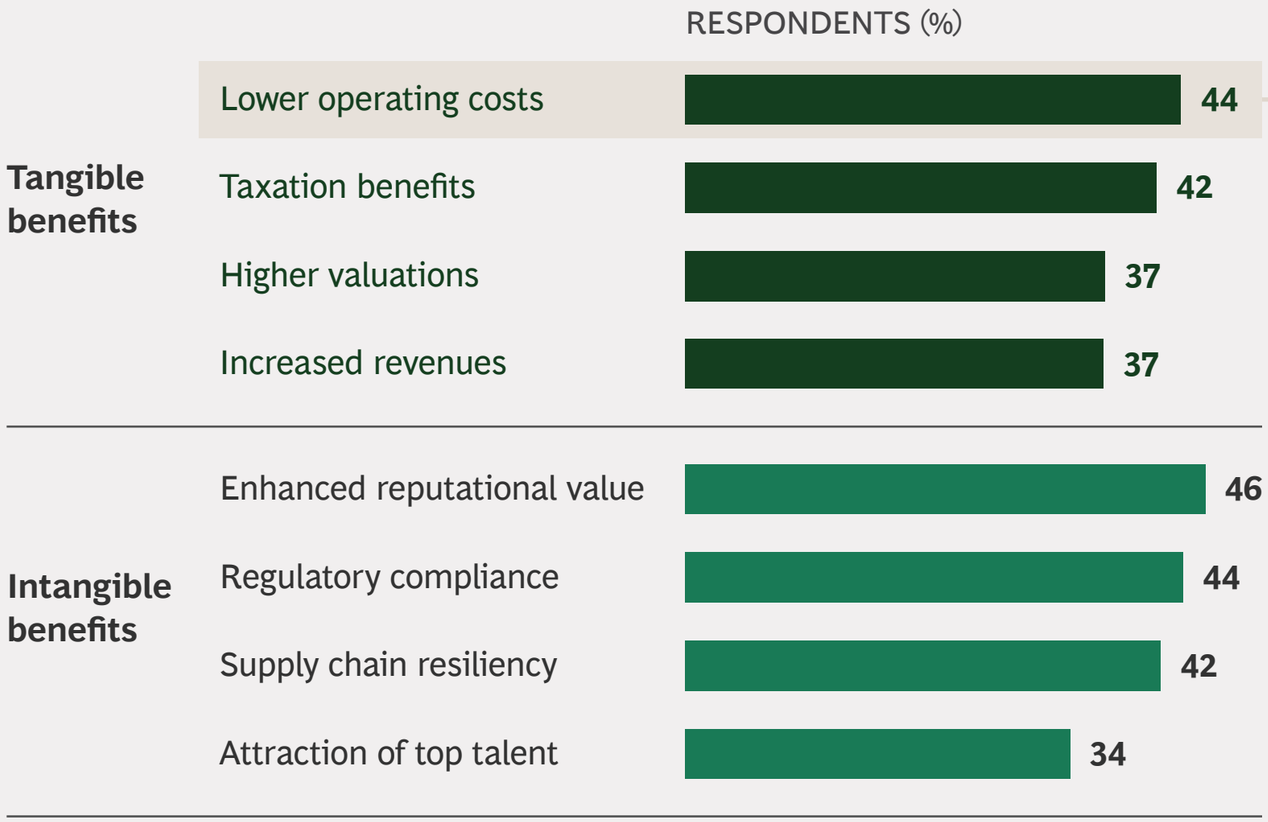


Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
Note: Companies reducing along a 1.5°C pathway are those reducing Scopes 1 and 2 emissions more than 15% and Scope 3 emissions more than 10% annually; companies reporting significant benefits from decarbonization see benefits equal to more than 7% of revenues annually.
[1]Countries and regions ranked by percentage of companies reducing along a 1.5ºC pathway; country rankings only include countries with 80 or more respondents. Percentages are rounded.

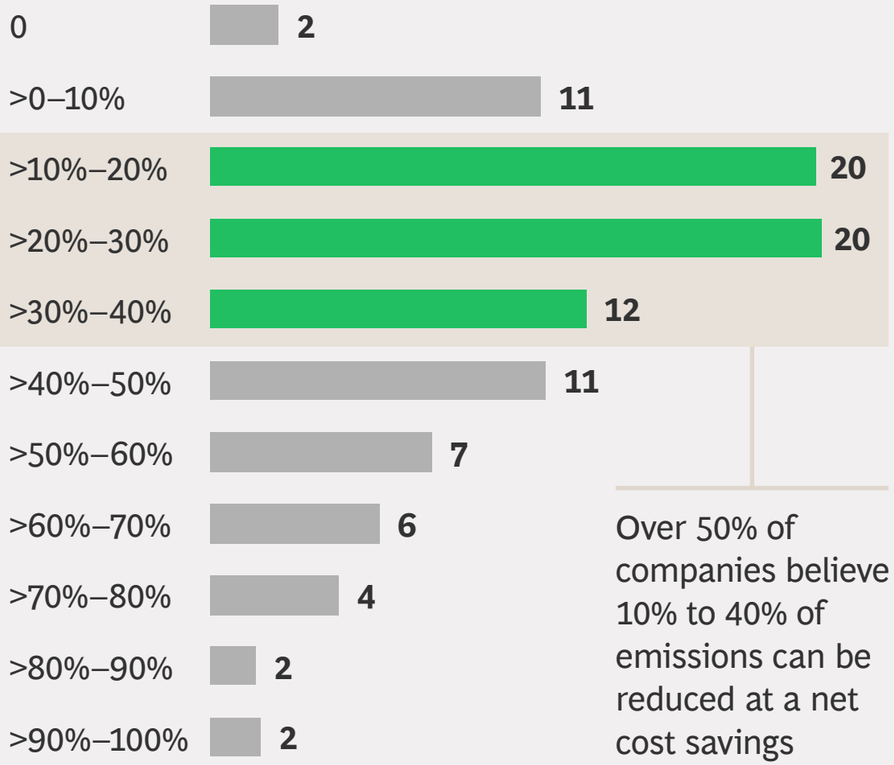
BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Value from decarbonization comes from many sources, including cost savings

Areas where companies are seeing benefits



Portion of companies' footprints that can be decarbonized at a net cost savings[1]



Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
Note: Respondent percentages do not add to 100 due to rounding.
[1]Net cost savings = when a decarbonization project yields greater financial value than the cost of the project, leading to an ultimate cost savings for the organization.

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Companies taking advanced actions are earning the most benefits

Foundational actions

Advanced actions

TIMES MORE LIKELY TO REAP SIGNIFICANT BENEFITS[1]

1.6x

Measurement

Comprehensive measurement of all significant and material GHG scopes for all regions and business units

1.5x

Reporting

Publicly reporting all significant and material GHG scopes for all regions and business units

1.9x

Target setting

Setting validated[2] targets across all GHG scopes to align ambitions with the goal of limiting warming to 1.5°C

2.9x

Climate transition plans

A company-wide plan that creates a sustainability vision supporting emissions reductions and value capture

4.0x

Product-level emissions

A carbon measurement approach quantifying emissions at the product level to increase accuracy

4.5x

AI

The use of artificial intelligence tools to improve the accuracy and efficiency of the sustainability processes

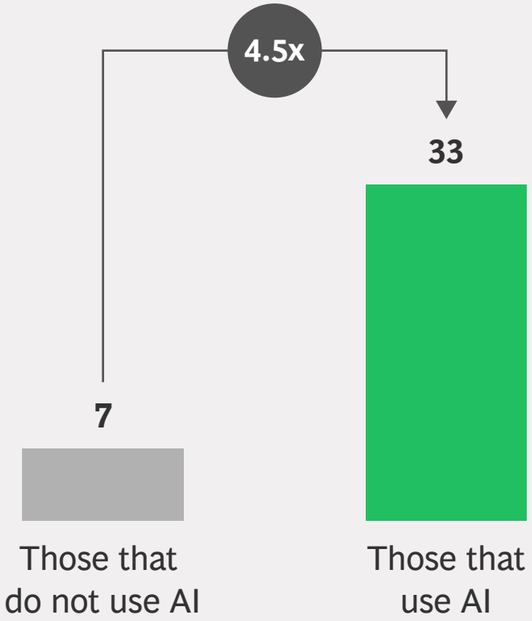
Climate maturity

Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
Note: GHG = greenhouse gas.
[1]Comparing organizations that see significant financial benefit (>7% of sales, i.e., the top quartile of companies achieving value) vs. those that do not see that same level of benefit.
[2]Validation can be done by third-party organizations such as the Science Based Targets initiative.

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Companies using AI are far more likely to experience significant decarbonization benefits, including efficiency gains

SHARE OF COMPANIES THAT EXPERIENCED SIGNIFICANT BENEFITS[1] (%)



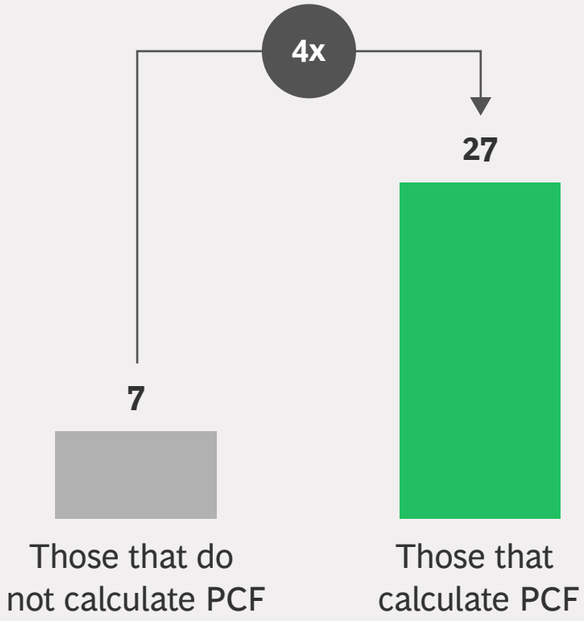
AVERAGE AMOUNT OF EFFICIENCY IMPACT FROM USING AI IN SUSTAINABILITY PROCESSES[2] (HOURS/WEEK)

Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
[1]Refers to organizations that saw significant financial benefits from decarbonization (>7% of sales).
[2]Estimates based on survey responses about the impact on efficiency of using AI in sustainability efforts, measured in terms of full-time equivalents at 40 hours/week.

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Companies calculating emissions at the product level are four times more likely to see significant decarbonization benefits

SHARE OF COMPANIES THAT EXPERIENCED SIGNIFICANT BENEFITS[1] (%)



REASONS COMPANIES CALCULATE PRODUCT-LEVEL EMISSIONS (% OF RESPONDENTS)

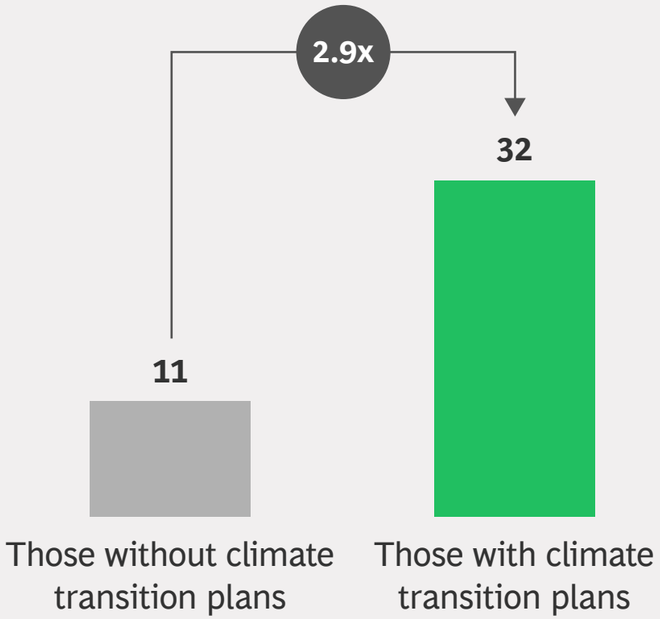
Other options selected by <30% of respondents

Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
Note: PCF = product carbon footprint. Percentages for companies that do/do not calculate PCF were rounded.
[1]Refers to organizations that saw significant financial benefits from decarbonization (>7% of sales). Percentages are rounded.

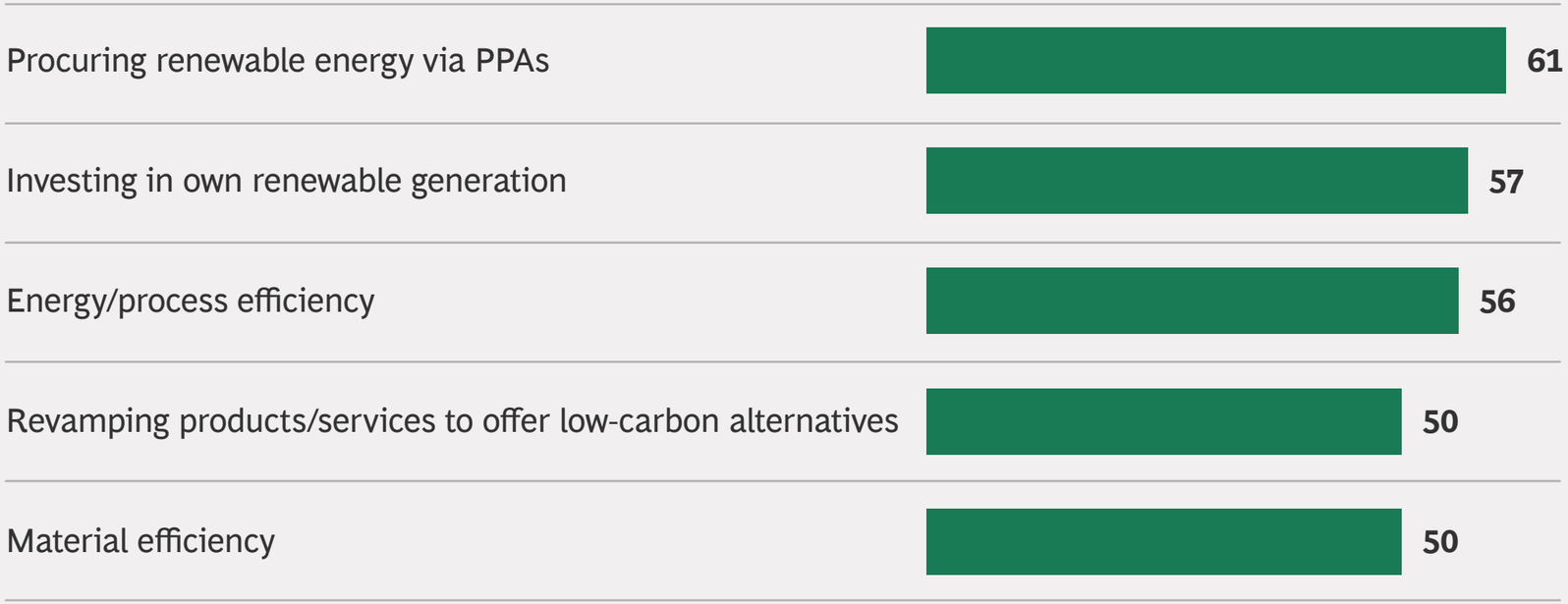
BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Committing to a climate transition plan can improve the likelihood of finding more value in decarbonization

SHARE OF COMPANIES THAT EXPERIENCED SIGNIFICANT BENEFITS[1] (%)



TOP INITIATIVES FOR COMPANIES WITH PLANS THAT SAW SIGNIFICANT BENEFITS[1] (% OF RESPONDENTS)



Other options selected by <50% of respondents

Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
Note: PPA = power purchase agreement.
[1]Refers to organizations that saw significant financial benefits from decarbonization (>7% of sales).

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Respondents were distributed across regions, industries, and organization sizes

Region

RESPONDENT REGION (%; NUMBER)

Europe	30	564
Asia-Pacific	26	484
North America	12	217
Middle East	11	207
South America	11	201
Africa	10	191

Industry

INDUSTRY OF OPERATIONS (%; NUMBER)

Technology	19	346
Industrial goods	13	244
Consumer	13	233
Financial institutions	11	206
Energy	11	197
Transportation and logistics	6	117
Health care	5	95
Public sector and nonprofit	5	90
Construction	5	89
Other	5	87
Media and telecom	3	58
Travel and tourism	2	40
Insurance	1	24
Real estate	1	20
Agriculture	1	18

Organization size

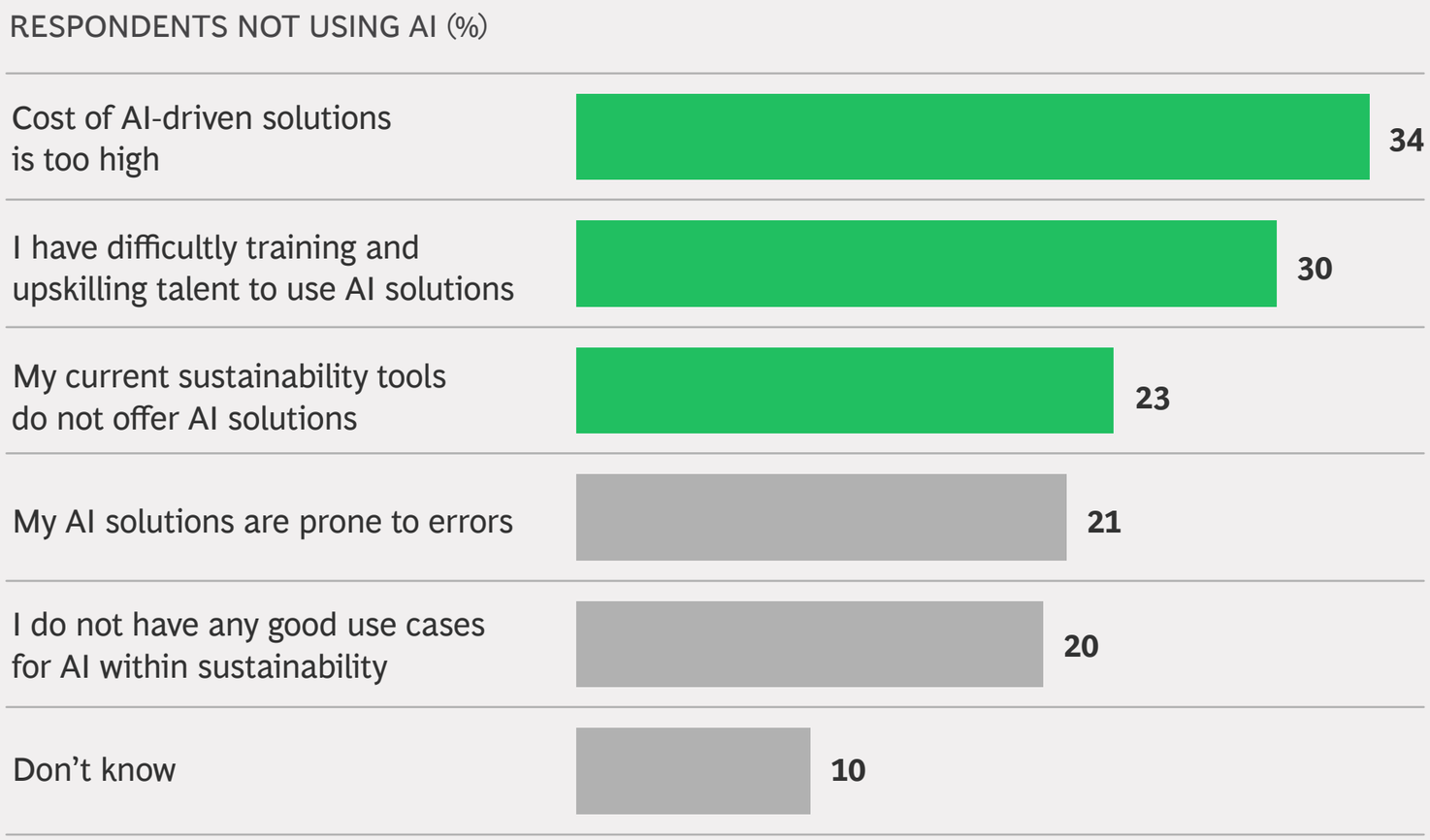
EMPLOYEES (%; NUMBER OF COMPANIES)

1,000–2,500 employees	10	193
2,501–5,000	14	261
5,001–10,000	19	360
10,001–20,000	22	405
20,001–50,000	11	199
50,001–100,000	11	197
100,001+	13	249

Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
Note: Africa includes Egypt, Nigeria, and South Africa; Asia-Pacific includes Australia, China, India, Japan, and Indonesia; Europe includes Denmark, Finland, France, Germany, Italy, Norway, Spain, Sweden, and the UK; Latin America includes Argentina, Brazil, and Chile; the Middle East includes Kuwait, Qatar, Saudi Arabia, and the United Arab Emirates; North America includes Canada and the US. Because of rounding, not all bar chart totals add up to 100%.

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Several barriers prevent companies from using AI to support their decarbonization efforts



Companies that do not use AI for decarbonization listed **high costs** and **training difficulties** as the most common barriers to implementation.

These difficulties were commonly listed across many sectors currently adopting AI.

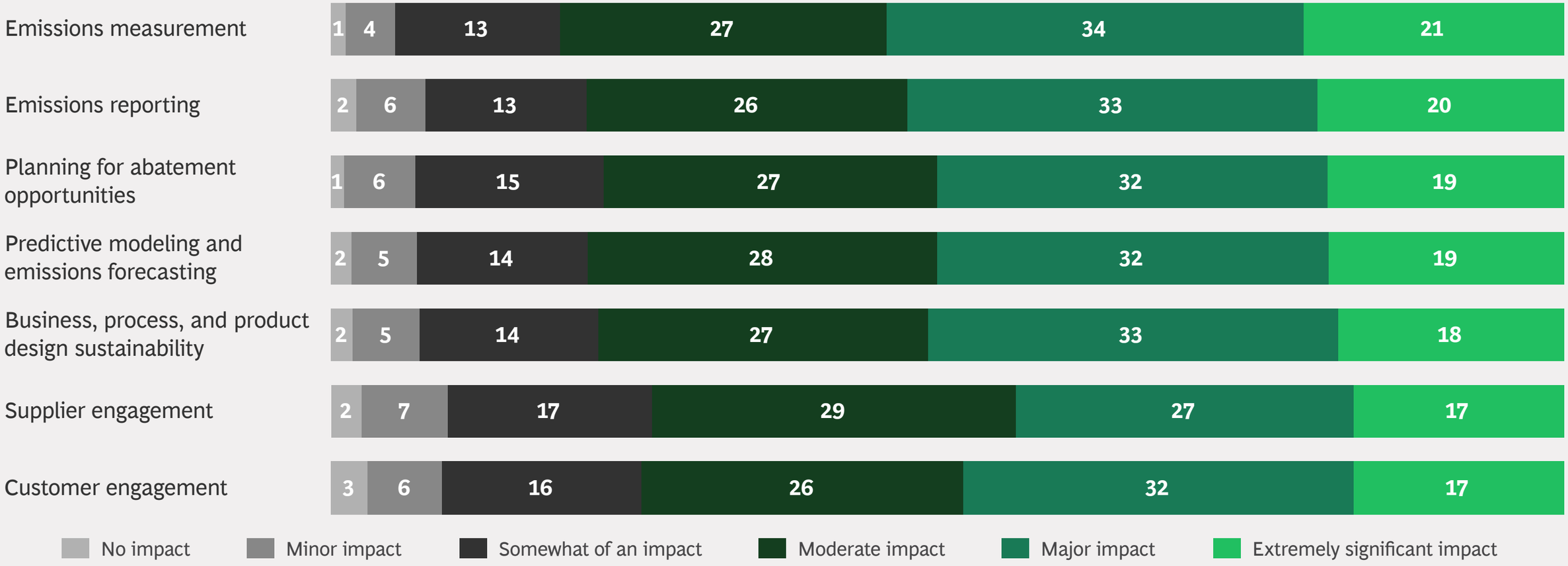
To overcome these barriers, companies can focus on **value creation opportunities from AI** and prioritize **tailored employee training to fit specific needs.**

Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Most companies report that using AI has a “major” or “extremely significant” impact on their decarbonization efforts

AI'S IMPACT ON DIFFERENT AREAS OF DECARBONIZATION (% OF RESPONDENTS)

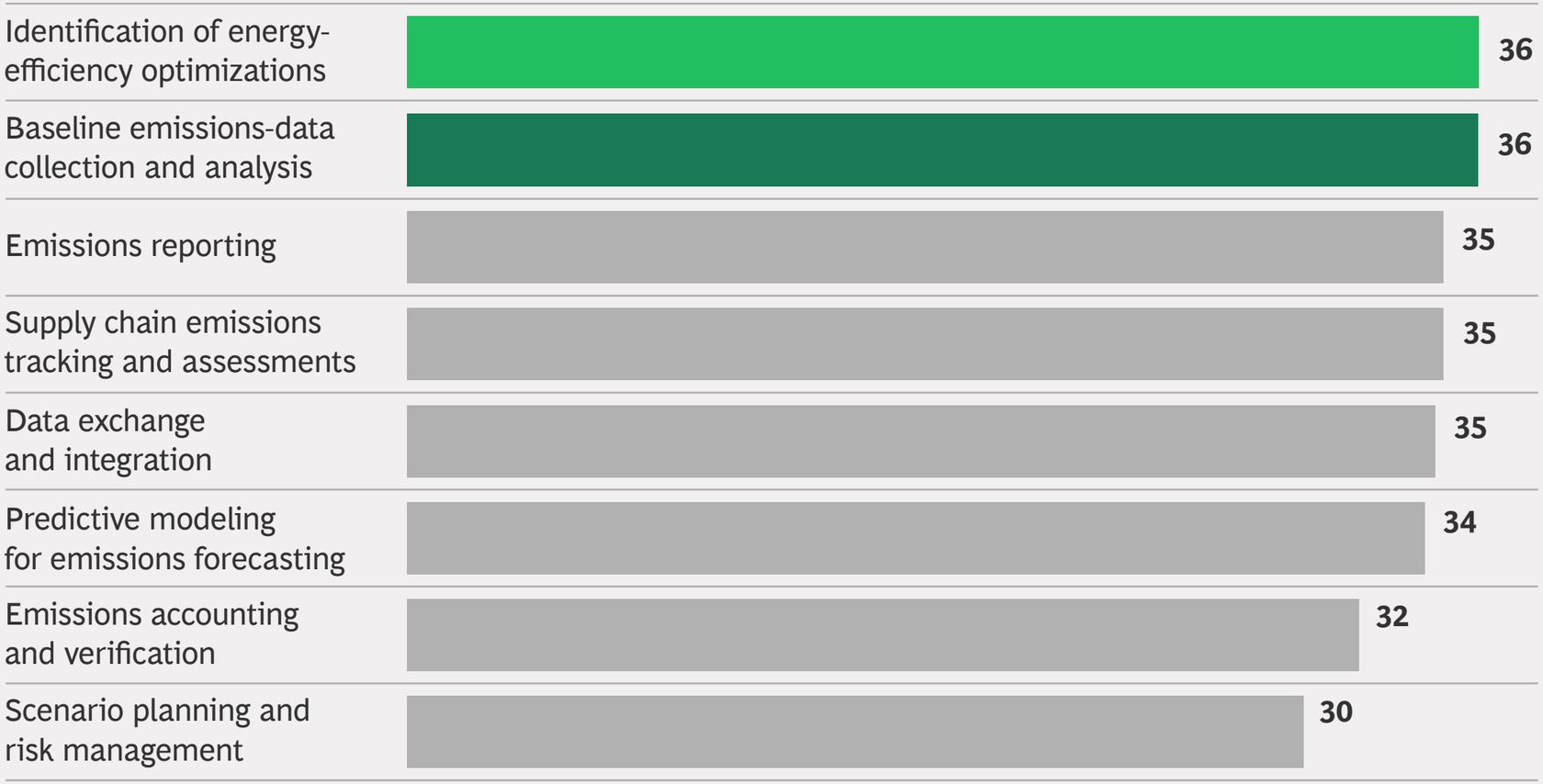


Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
Note: Percentages for different areas do not all add to 100 due to rounding.

BCG AND CO2 AI CARBON EMISSIONS SURVEY 2024

Companies plan to use AI in the future across a long list of decarbonization processes

DECARBONIZATION PROCESSES IN WHICH COMPANIES WILL EMPLOY AI-POWERED TOOLS (% OF RESPONDENTS)



Future potential AI use cases:

- Advanced control systems to **optimize energy usage**
- LLMs that classify activities for **emissions data collection**

Sources: BCG and CO2 AI Carbon Emissions Survey 2024 (N = 1,864); BCG analysis.
Note: LLMs = large language models. Percentages are rounded.

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