

Why Some Companies Are Ahead in the Race to Net Zero

Carbon Emissions Survey Report 2023

MEDIA ROUNDTABLE

NOVEMBER 2023



Today's Speakers



Chadia de Simone

Global Marketing Leader, BCG
Roundtable moderator



Hubertus Meinecke

Managing Director and Senior Partner, BCG
Global Leader, Climate & Sustainability practice



Charlotte Degot

Founder and CEO of CO2 AI



Diana Dimitrova

Managing Director and Partner, BCG X
Climate and sustainability expert on data
and digital solutions

CO2 AI + BCG CARBON
EMISSIONS SURVEY 2023

BCG drives
climate and
sustainability
impact by
supporting our
clients

Our climate and sustainability work with clients
spans six topic areas:



Climate and
sustainability
transformation



Decarbonization
solutions



Sustainable
food and nature
solutions



Sustainable
operations



Sustainable
finance and
investing



Green tech,
innovation,
and growth

>2,000

climate and sustainability
projects delivered since 2020

360

780

980

2020

2021

2022



1,500+

experts working on climate
and sustainability

\$500M

of the \$2B committed by 2030
invested in climate action so
far this decade



CO2 AI is an enterprise sustainability management platform that helps companies master their end-to-end net zero journey



Incubated within BCG to support large organizations with their sustainability goals



Launched as a standalone company in 2023, backed by BCG and venture capital



Partners with CDP to facilitate seamless exchange of Scope 3 data across the value chain

Trusted by 60 international companies across industries

1

Measure
Build robust and granular footprints in an automated way

2

Visualize
Leverage advanced analytics to make informed decisions

3

Report
Accelerate reporting process and improve reliability

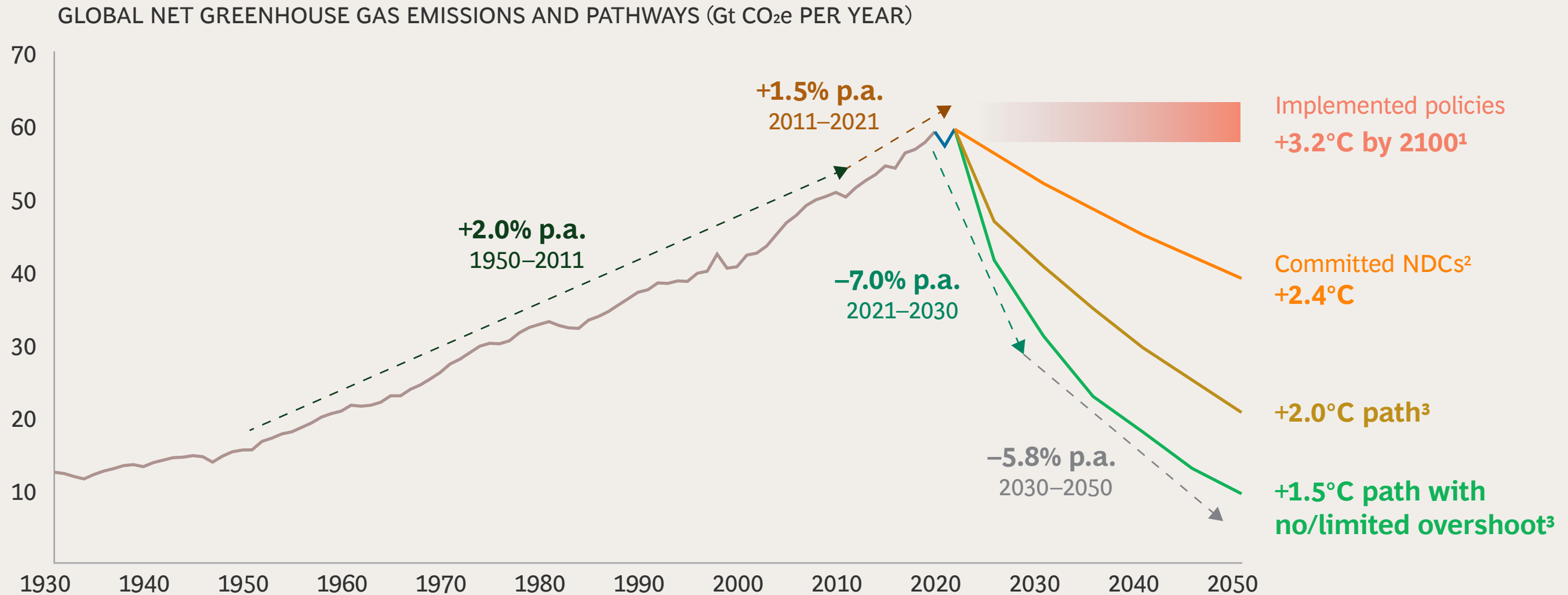
4

Decide
Define a net zero journey and track progress

5

Decarbonize at scale
Drive emissions reduction across the organization

The 1.5°C target calls for an emissions reduction of 7% per year until 2030, but emissions are still increasing by 1.5% per year



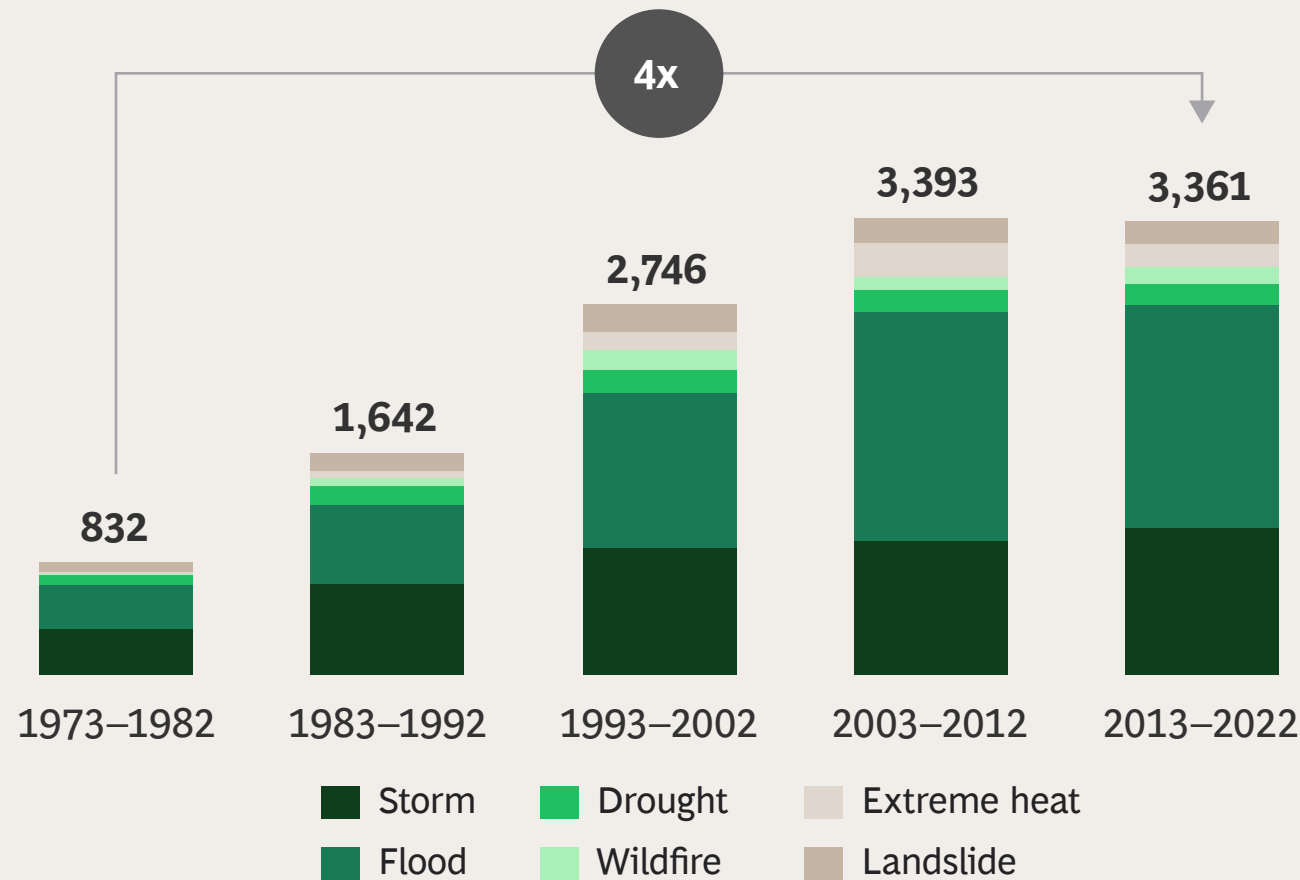
Sources: Intergovernmental Panel on Climate Change; Potsdam Institute for Climate Impact Research; Climate Action Tracker; BCG analysis.

Note: The blue line plot segment represents estimates for 2020–2021, extrapolated from IPCC’s 2019 data. NDCs = nationally determined contributions; p.a. = per year.

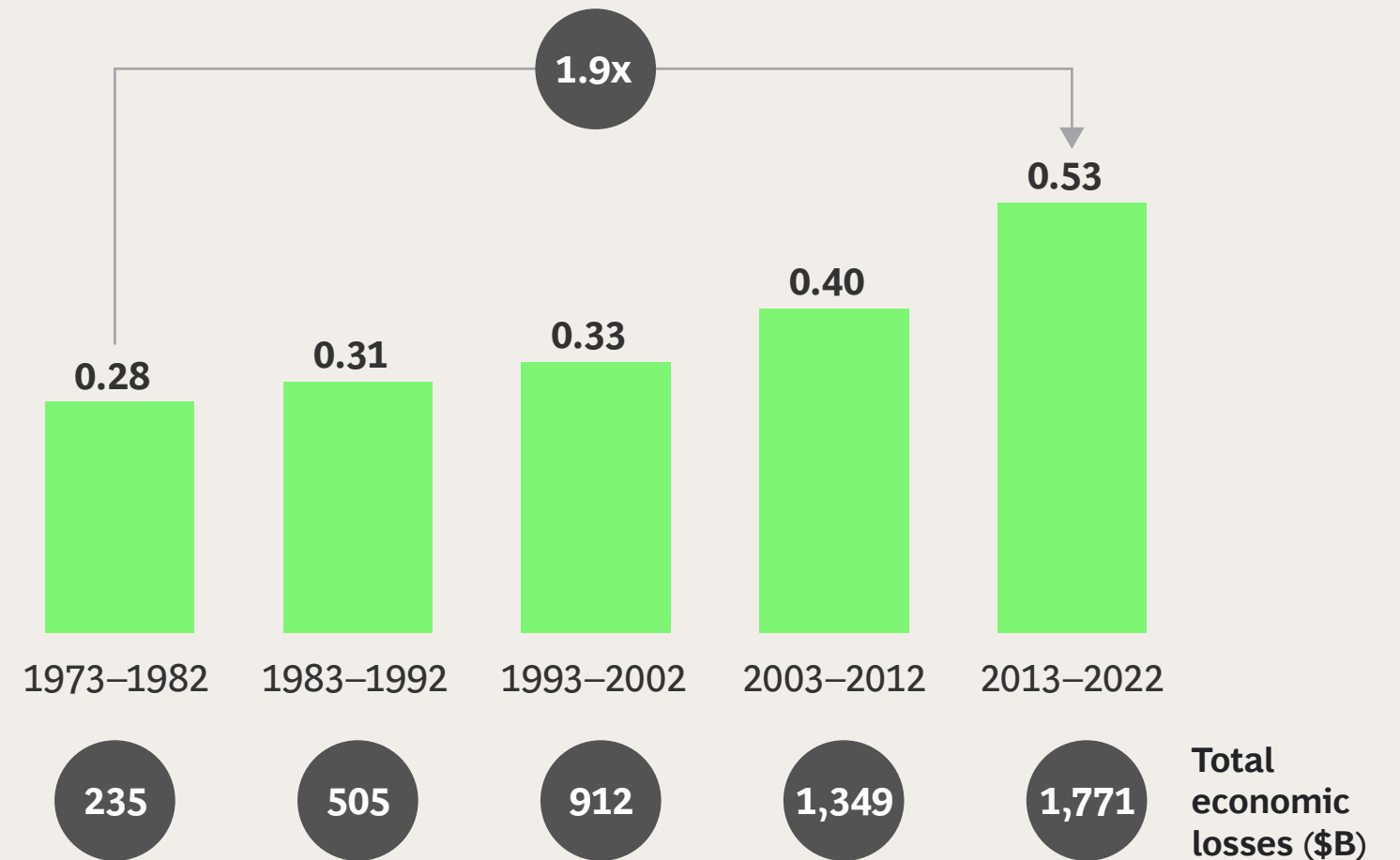
¹IPCC median projection, 5th to 95th percentile range: 2.2°C to 3.5°C, at medium confidence. ²Climate Action Tracker’s median projection. ³IPCC median projection.

Climate-related disasters have escalated in frequency and severity over the past 40 years

NUMBER OF CLIMATE-RELATED DISASTERS



REPORTED ECONOMIC LOSSES PER DISASTER (\$B)¹

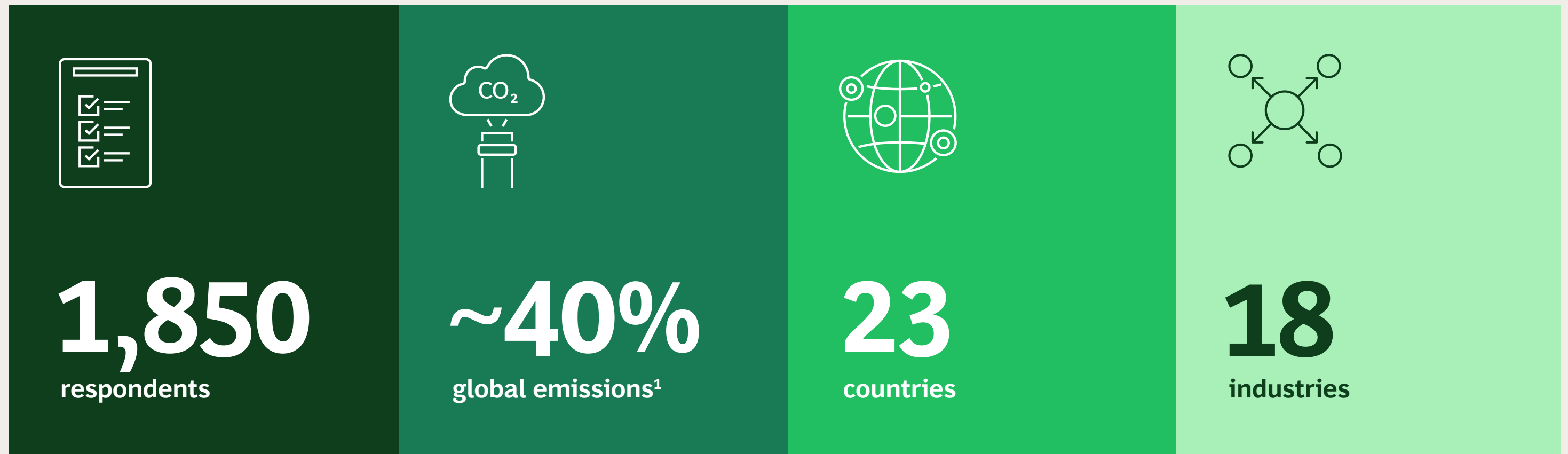


Sources: World Meteorological Institute; EM-DAT—The International Disaster Database; BCG.

¹Base year for inflation adjustments is 2022.

Survey overview: Our 2023 study is a continuation of our 2021 and 2022 investigations into global companies' progress in measuring and reducing CO₂e

Third edition



Respondents are company executives with decision-making responsibility for emissions measurement and reporting

Source: BCG analysis.

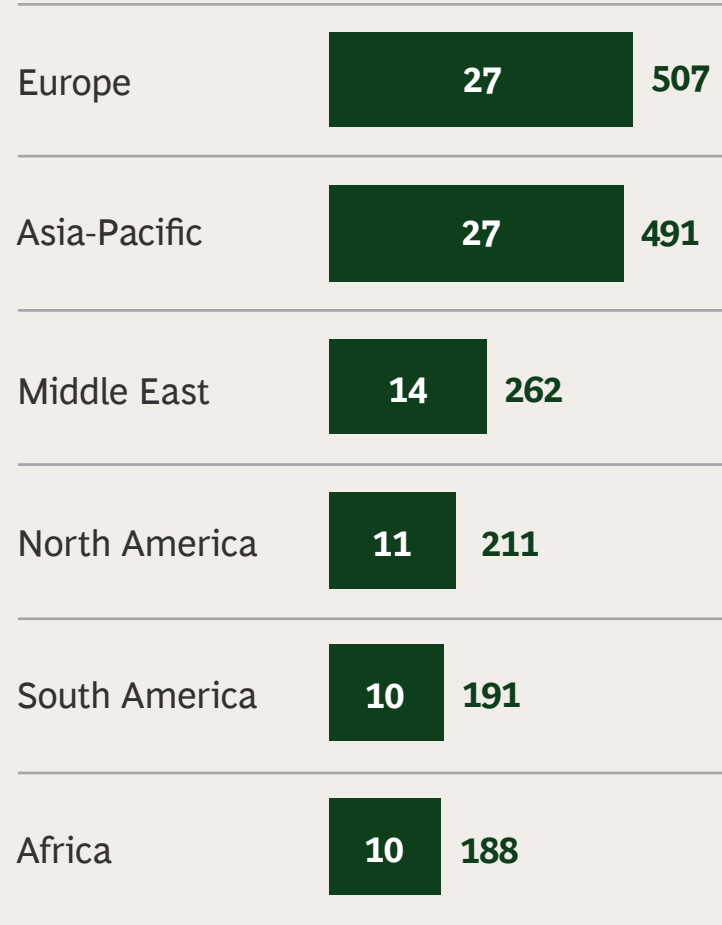
Note: Throughout this analysis, greenhouse gas emissions are measured in carbon dioxide equivalents (CO₂e).

¹Survey participants were asked to report their estimated Scope 1 and 2 emissions totals. By summing the total, we find that our survey covers approximately 40% of estimated global emissions.

Survey overview: Respondents are distributed across regions, industries, and organization sizes

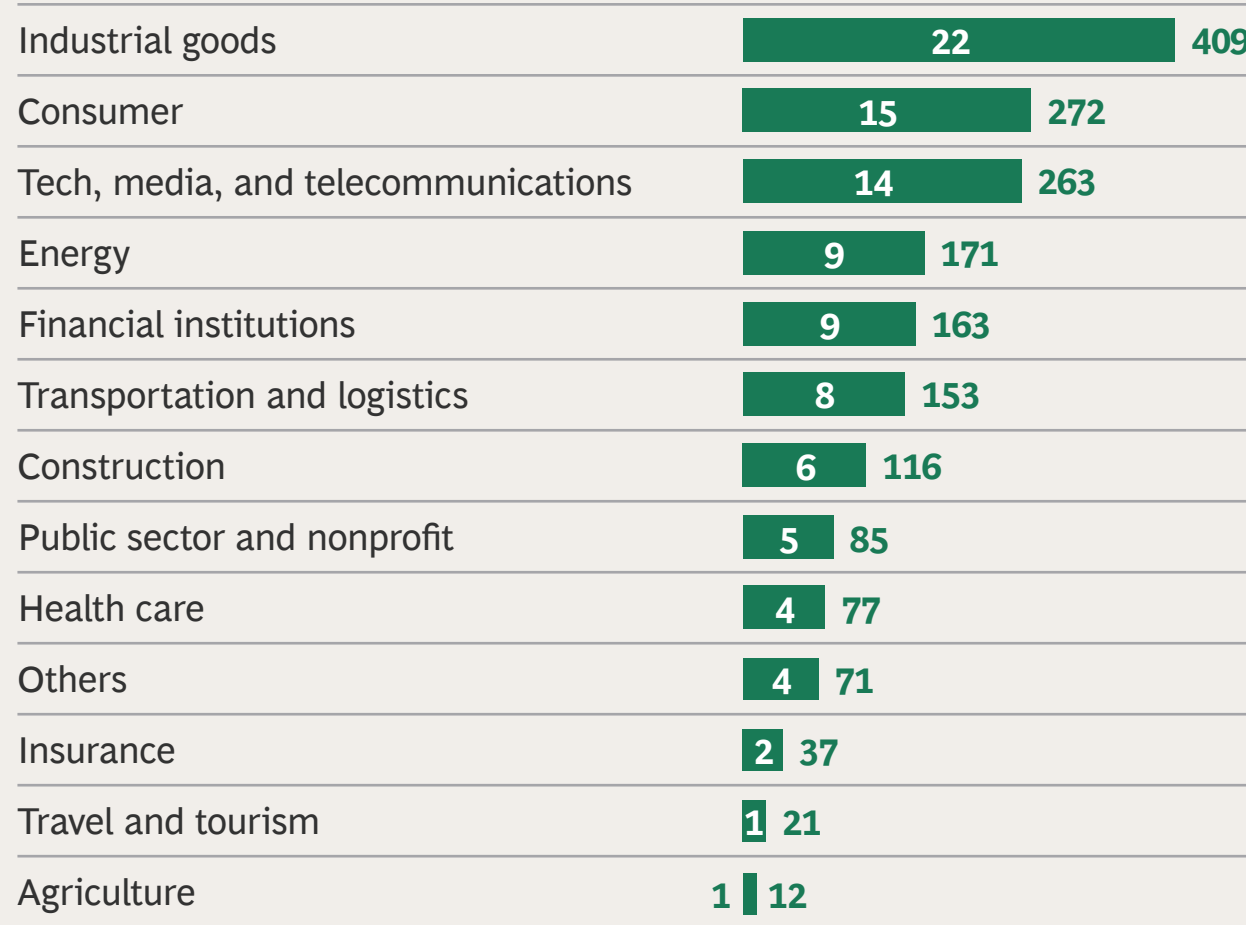
Region

RESPONDENT REGION (%; NUMBER)



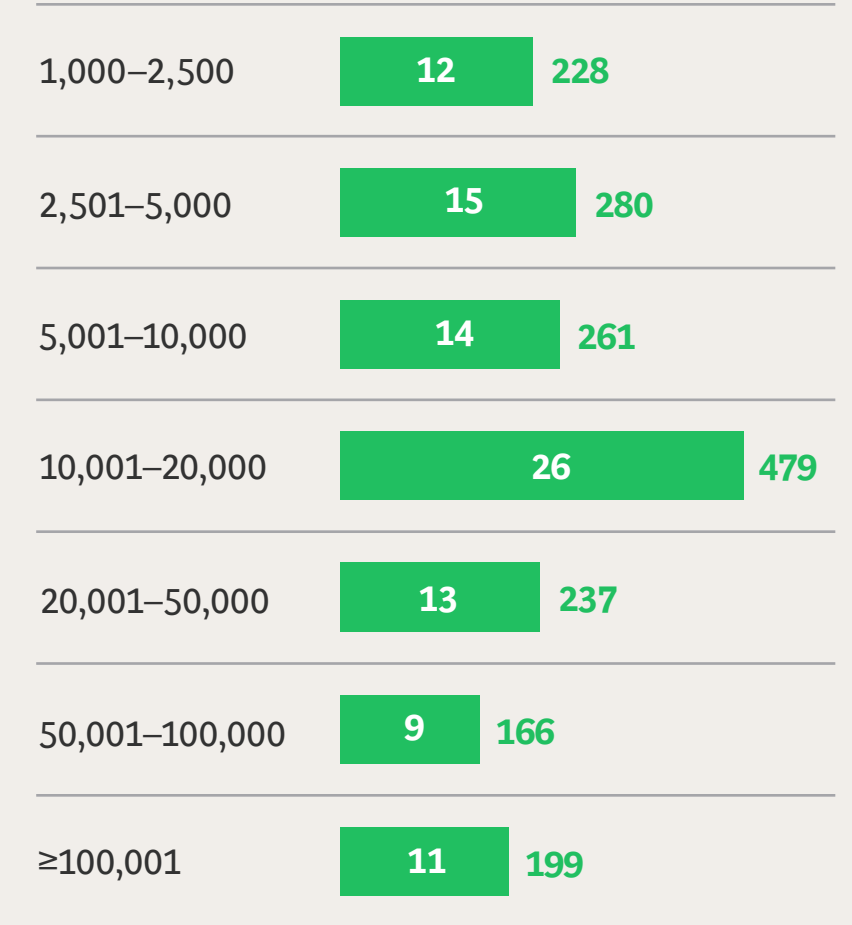
Industry

INDUSTRY OF OPERATIONS (%; NUMBER)



Organization size

EMPLOYEES (%; NUMBER OF COMPANIES)



Sources: CO2 AI by BCG Carbon Emissions Survey 2023; BCG analysis.

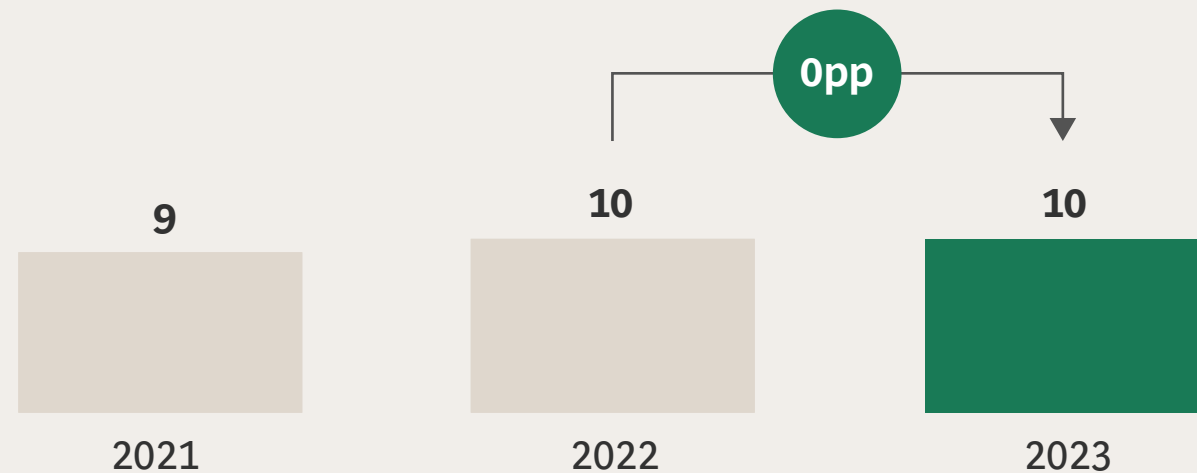
Note: Africa includes Egypt, Nigeria, and South Africa; Asia-Pacific includes Australia, China, India, Japan, and Vietnam; Europe includes France, Germany, Italy, Spain, and the UK; Latin America includes Argentina, Brazil, and Chile; the Middle East includes Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates; North America includes Canada and the US. Because of rounding, not all bar chart totals add up to 100%.

Companies in general did not make progress in comprehensive emissions measurement and reduction from 2022 to 2023

Only 10%

comprehensively measure and report Scopes 1, 2, and 3 emissions

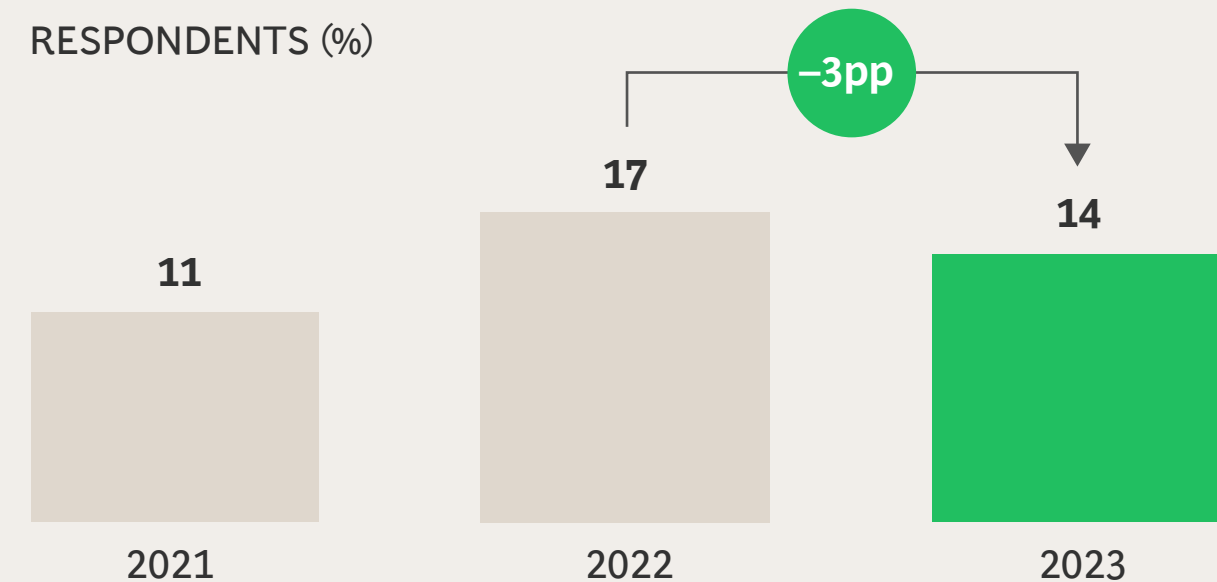
RESPONDENTS (%)



Only 14%

have reduced their emissions in line with their ambitions over the previous five years¹

RESPONDENTS (%)



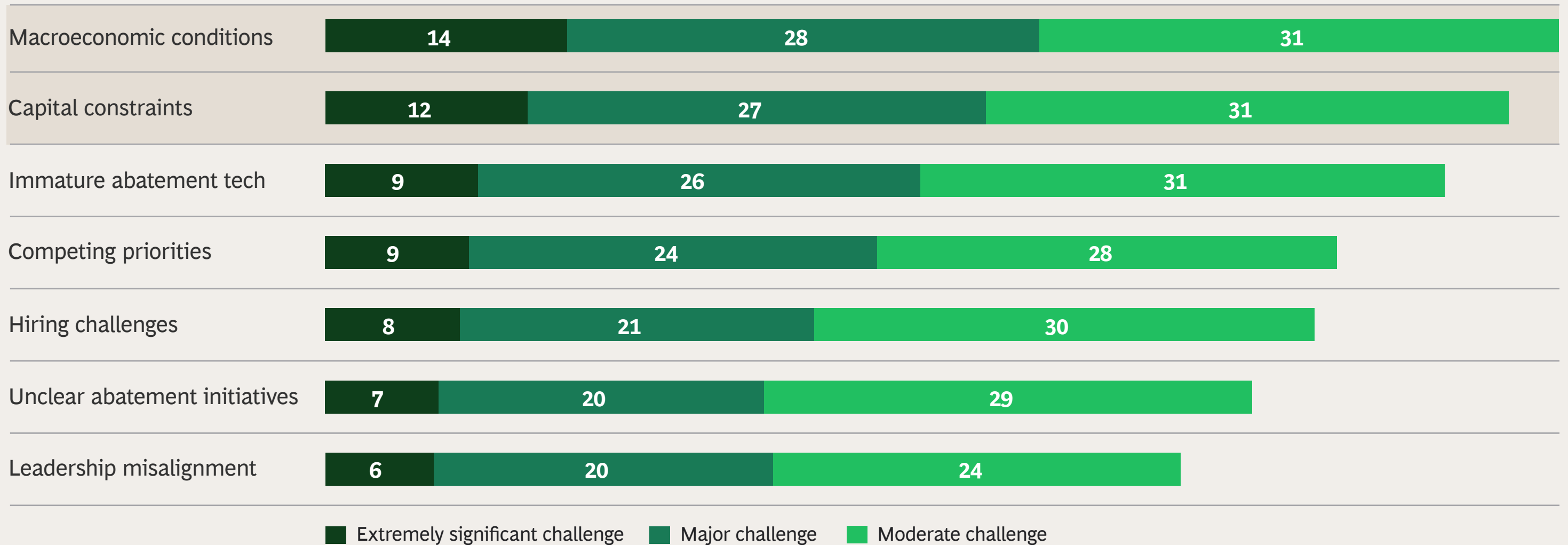
Sources: CO2 AI + BCG Carbon Emissions Survey 2023; BCG analysis.

¹Percentage of respondents that claimed they had realized more than 75% of their emissions reduction ambition over the five years prior to the survey.

Companies have faced multiple challenges to achieving emissions reduction

What have been the primary challenges to achieving your organization's emissions reduction targets in the past year?

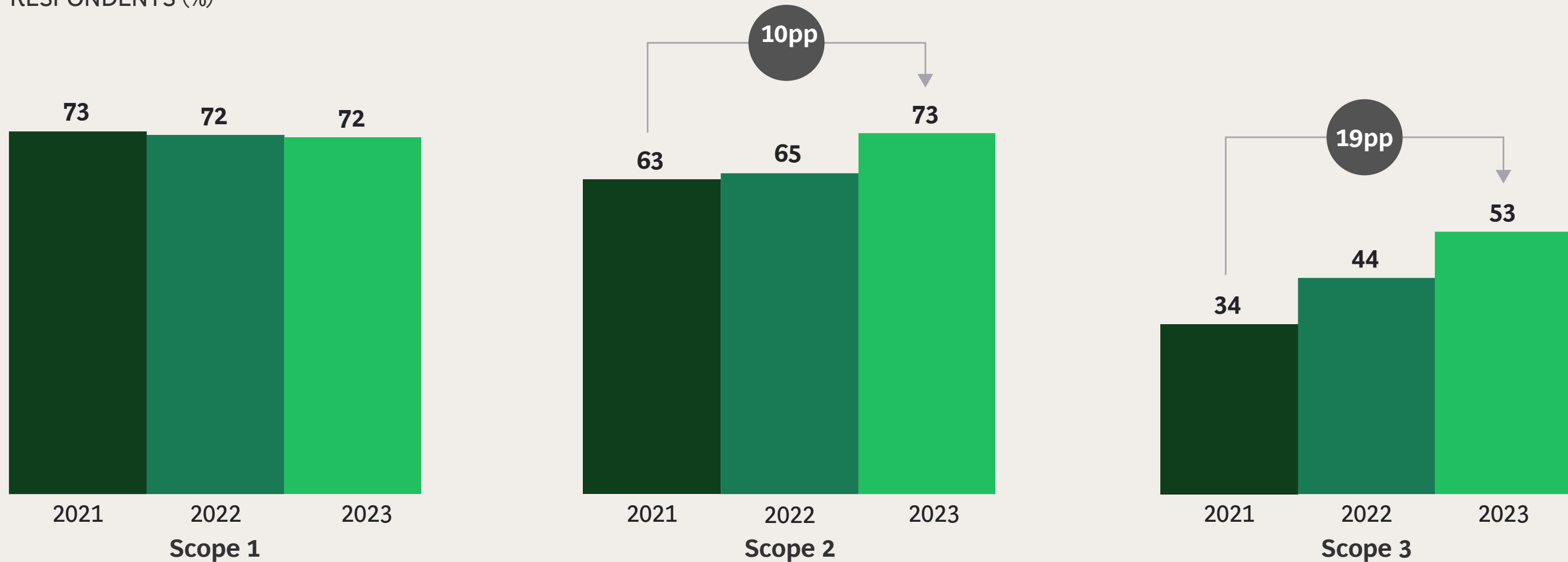
RESPONDENTS (%)



There are signs of improvement in emissions measurement, including a 19pp increase in respondents reporting partial coverage of Scope 3

Partial emissions measurement and reporting coverage¹

RESPONDENTS (%)



Sources: CO2 AI + BCG Carbon Emissions Survey 2023; BCG analysis.

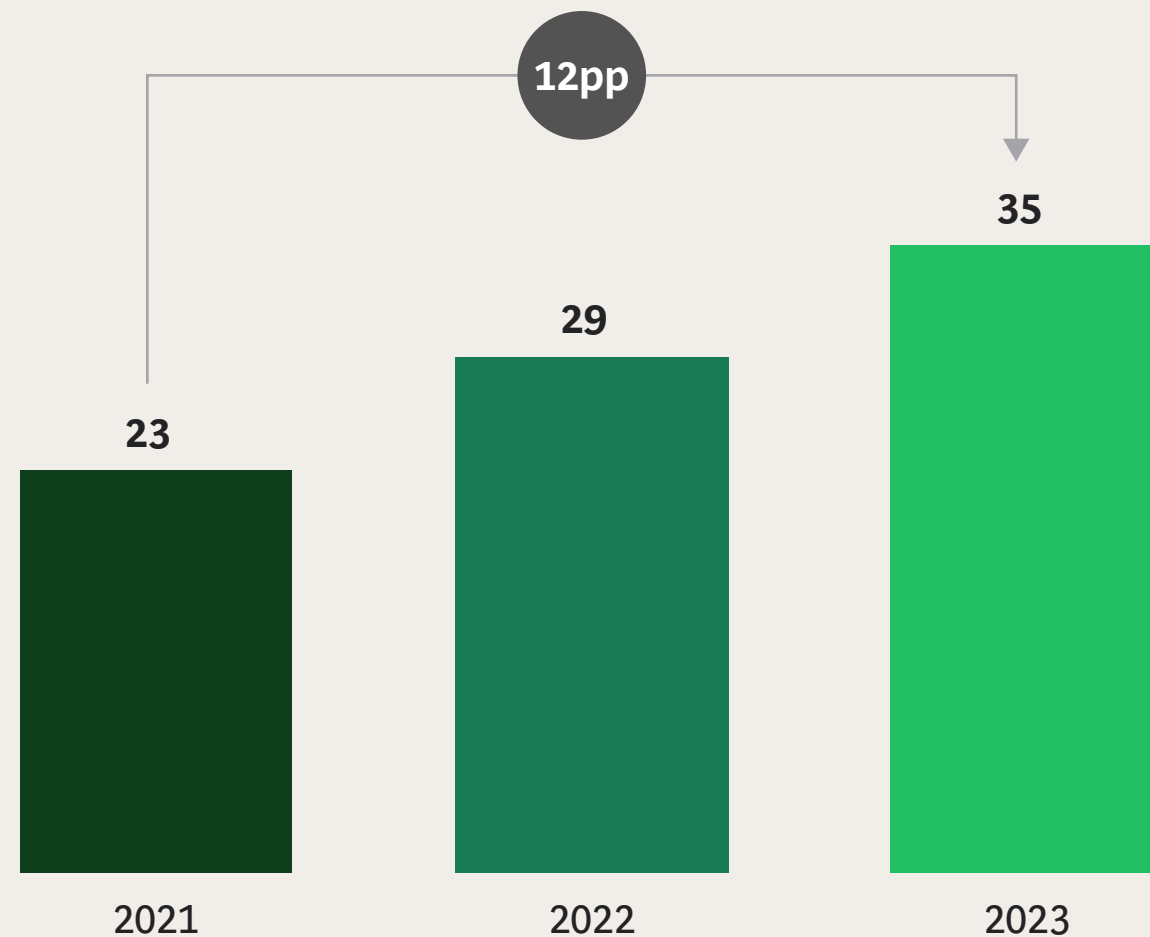
Note: Question: Which scopes do you measure and include in your carbon emissions reporting?

¹Includes respondents that indicated they either fully or partially cover the relevant emissions scope.

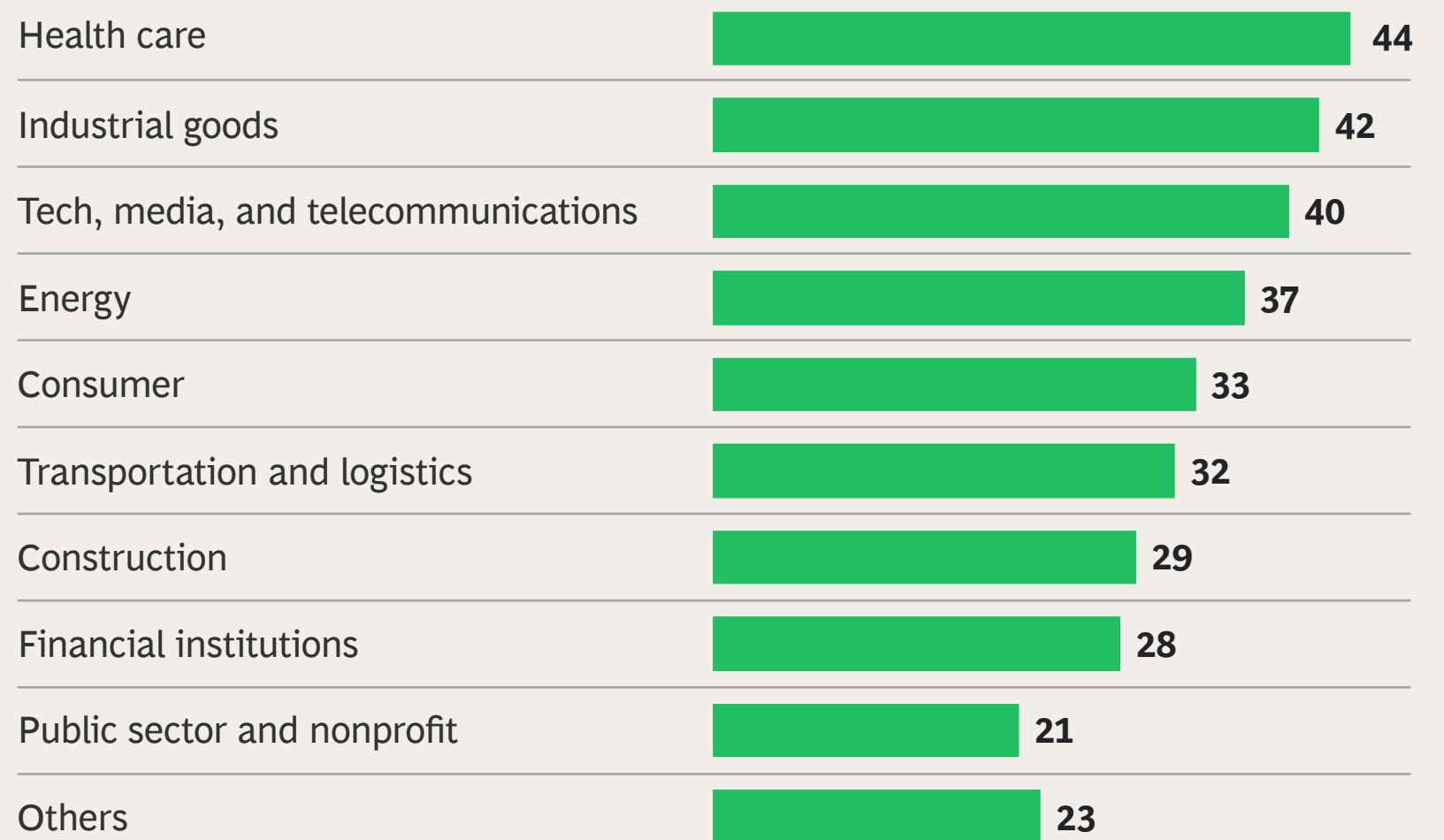
Scope 3 target-setting increased by 12pp from 2021 to 2023, with the health care and industrial goods industries leading the way

Have you set defined reduction targets for Scope 3?

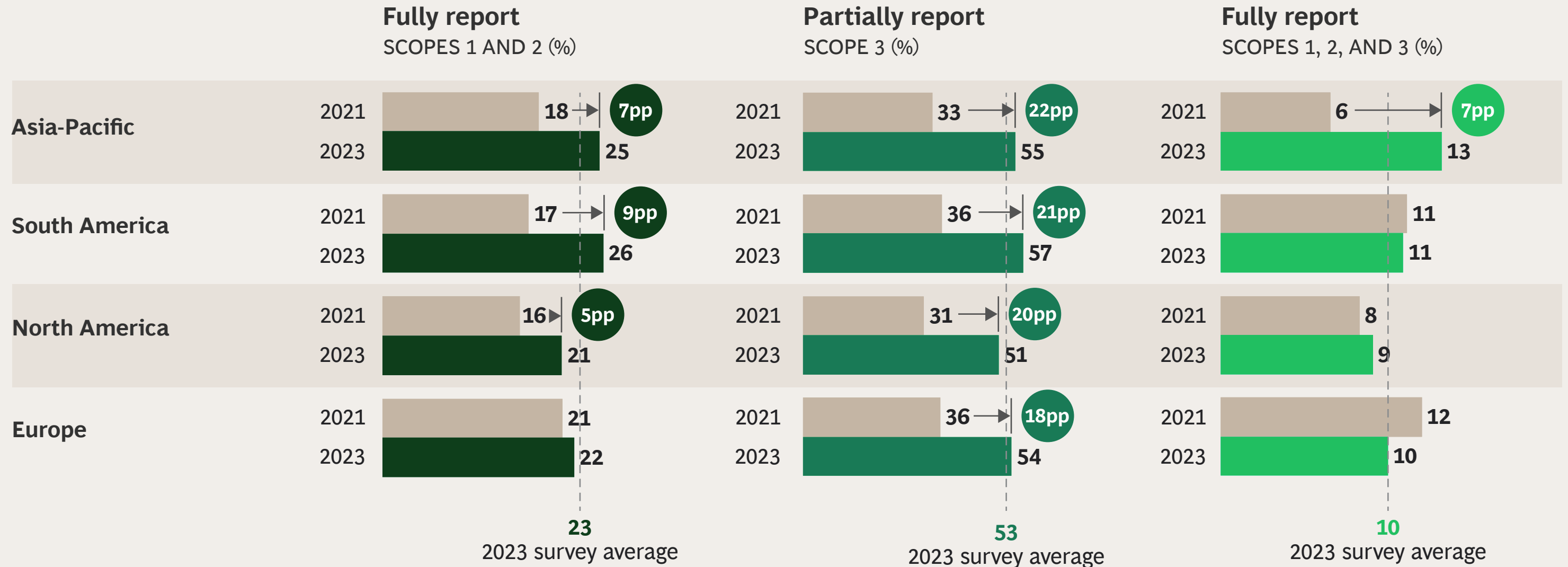
RESPONDENTS IN AGGREGATE (%)



RESPONDENTS BY INDUSTRY, 2023 (%)



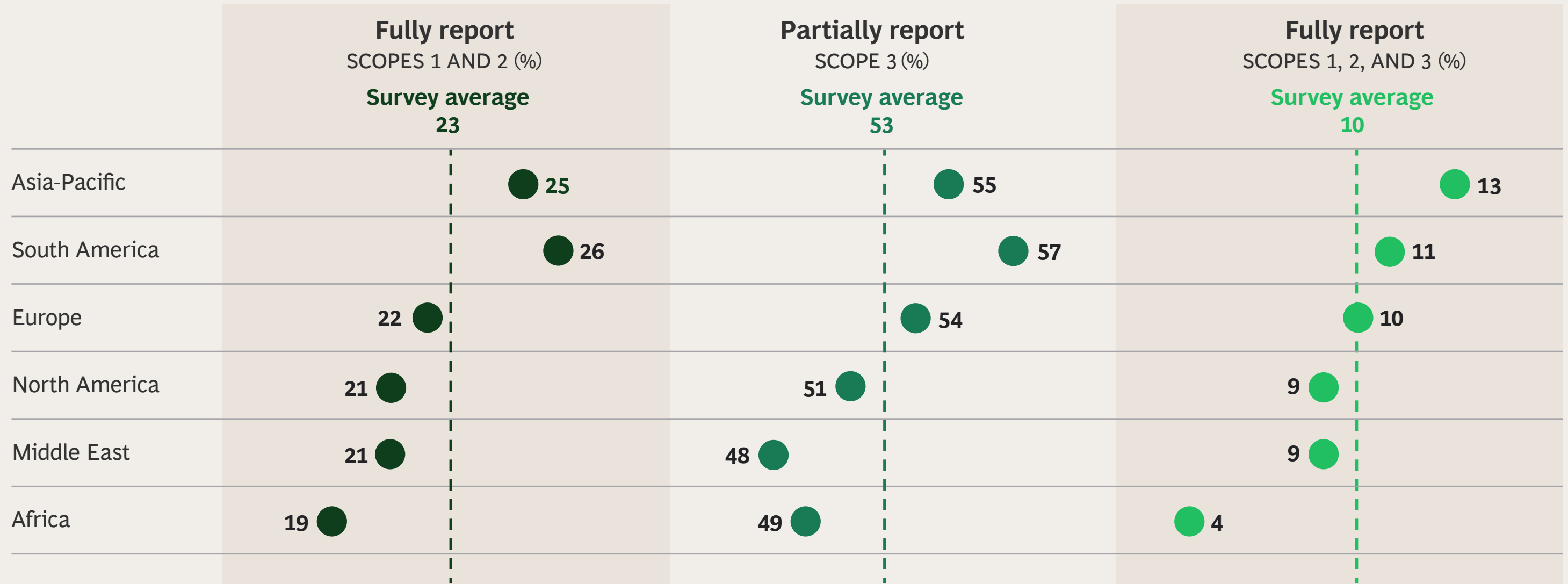
Asia-Pacific, South American, and North American respondents demonstrated notable improvements in emissions reporting from 2021 to 2023



Sources: CO2 AI + BCG Carbon Emissions Survey 2023; BCG analysis.

Note: 2023 N: Asia-Pacific = 491, South America = 191, North America = 211, Europe = 507. 2021 N: Asia-Pacific = 418, South America = 100, North America = 207, Europe = 565. No data was collected for African and Middle Eastern respondents in 2021; therefore, these regions have been excluded from this analysis.

In 2023, Asia-Pacific and South American respondents lead in emissions reporting



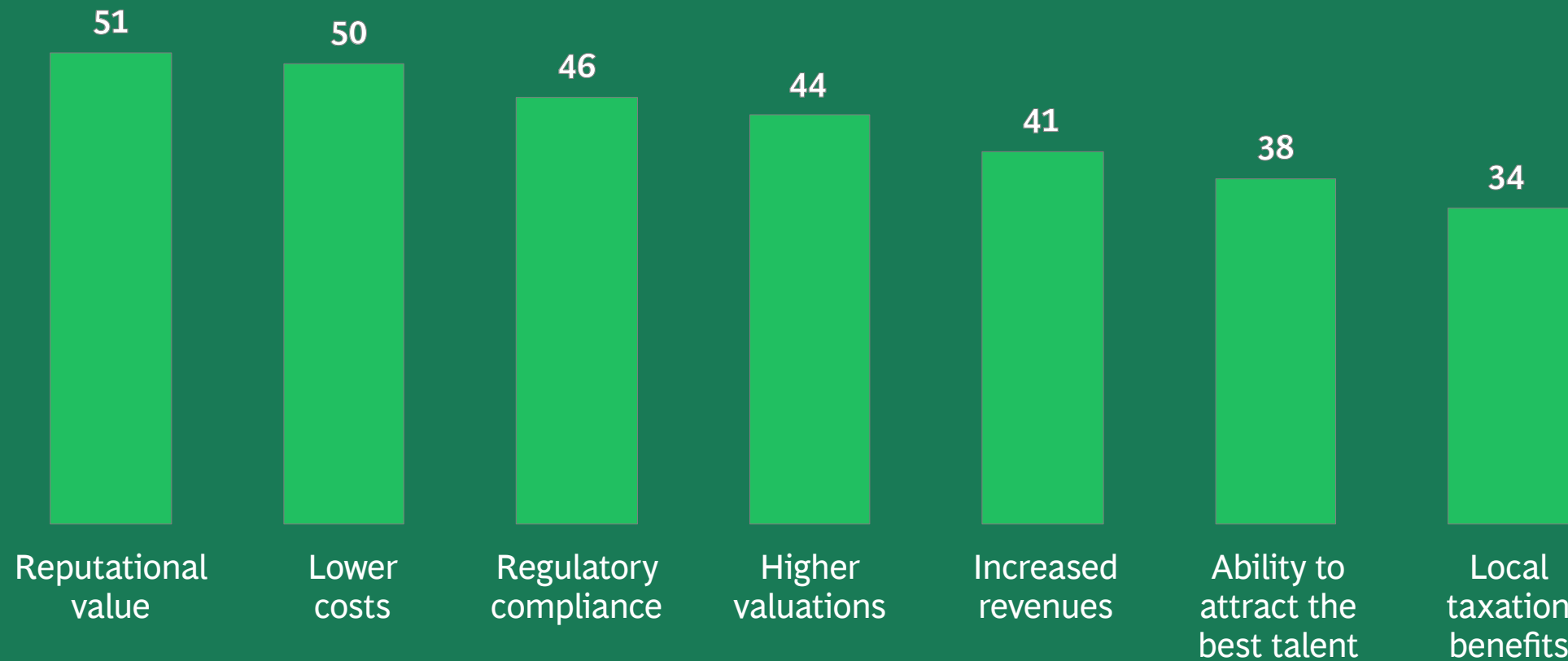
Sources: CO2 AI + BCG Carbon Emissions Survey 2023; BCG analysis.

Note: 2023 N: Asia-Pacific = 491, South America = 191, Europe = 507, North America = 211. 2021 N: Asia-Pacific = 418, South America = 100, Europe = 565, North America = 207. No data was collected for African and Middle Eastern respondents in 2021; therefore, these regions have been excluded from this analysis.

Companies recognize the business benefits of decarbonization

Improved reputation and lower operating costs are the most widely recognized benefits

RESPONDENTS (%)



Companies estimated significant annual financial benefits from meeting reduction goals

40% of respondents estimated an annual financial benefit of **at least**

\$100M

for meeting emissions reduction targets, up 3pp from 2022

Companies reducing emissions in line with their ambitions tend to...

**Collaborate
across the
supply chain**

They are

1.7x

more likely to have joint
measurement and
reduction initiatives with
their supply chain

**Assess
emissions at the
product level**

They are

1.9x

more likely to calculate
product carbon footprints
for their portfolio

**Use digital
technology
solutions**

They are

2.2x

more likely to have fully
automated emissions
management processes

**View reporting
regulations
positively**

They are

2.0x

more likely to view
emissions-reporting
regulations to be a key
enabler of reduction

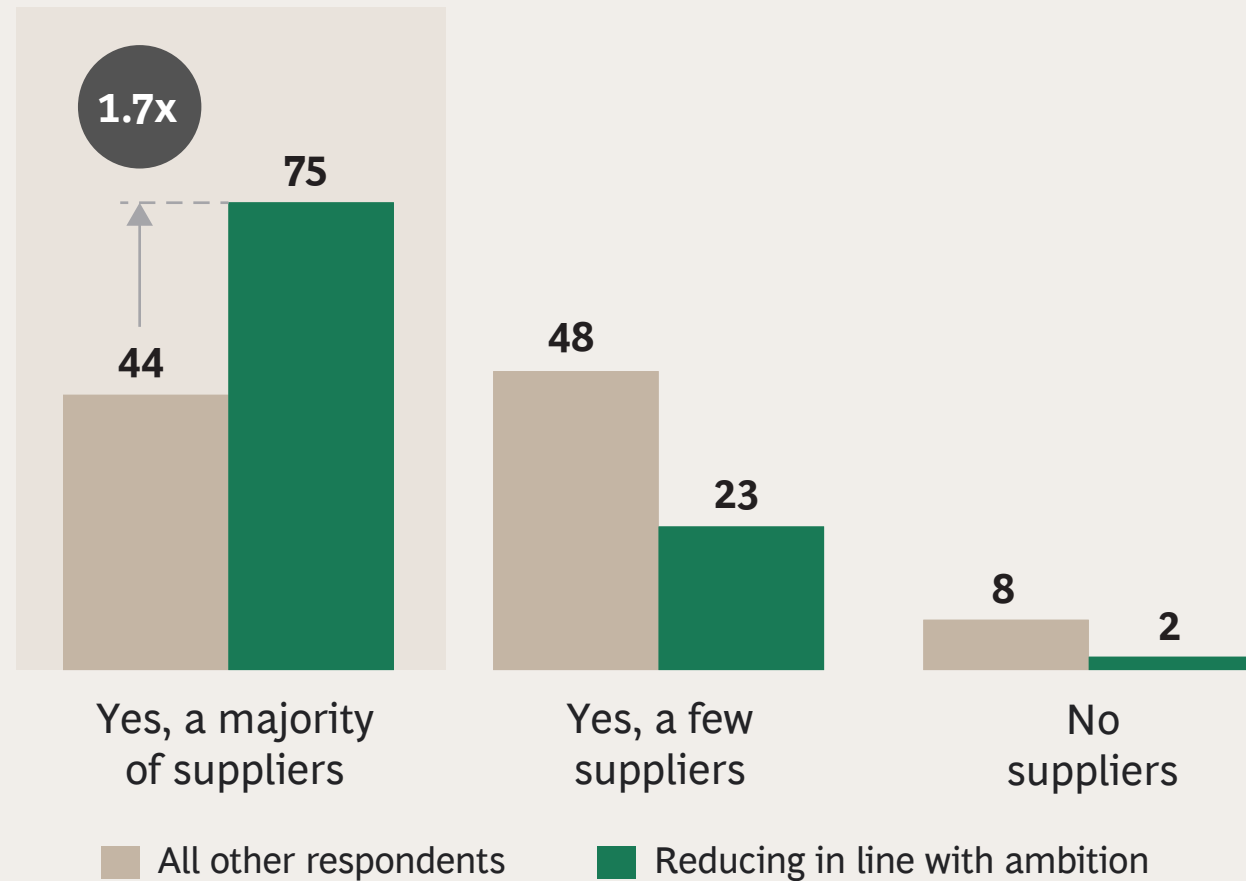
Source: CO2 AI + BCG Carbon Emissions Survey 2023; BCG analysis.

Note: Data corresponds to a comparison between companies that reported they had realized more than 75% of their reduction ambition and all other respondents.

Companies that collaborate with suppliers and customers are best positioned to meet Scope 3 targets

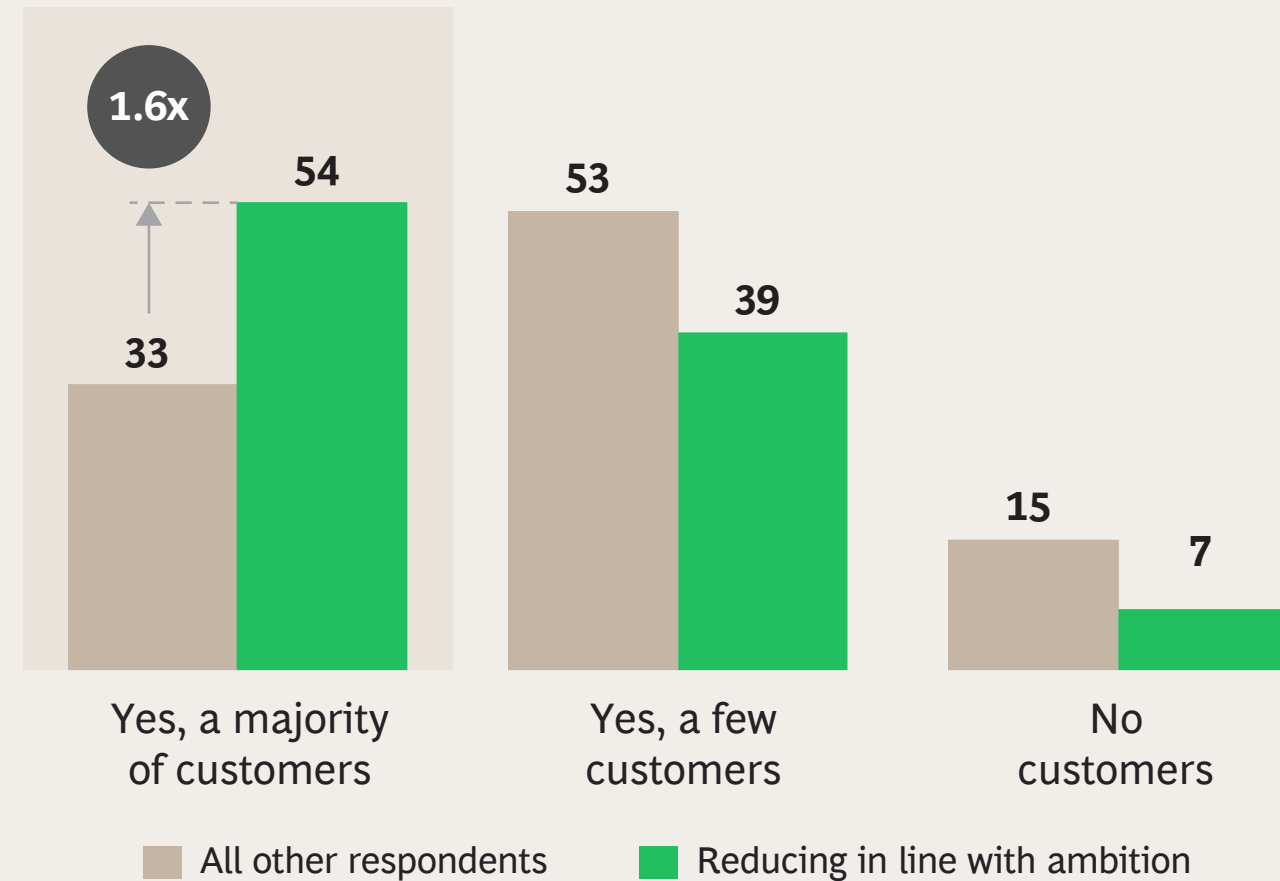
Do you have joint reduction initiatives with your suppliers?

RESPONDENTS (%)



Do you have joint reduction initiatives with your customers?

RESPONDENTS (%)



Schneider Electric

Example of a company collaborating with its supply chain on emissions reduction goals

CASE STUDY

Schneider Electric's Zero Carbon Project

Schneider partners with top suppliers to help them measure emissions, set carbon reduction targets, and achieve those targets

Only 126

suppliers reported their emissions at the end of 2021



Over 1,000

suppliers reported and committed to reduction by 2023

1,300+

suppliers engaged in 8 technical trainings on decarbonization

50%

reduction goal for supplier operations emissions by 2025

“ A successful sustainability program can only be built on trust and engagement. It is incredibly encouraging to see such high-level mobilization from our supply chain partners.

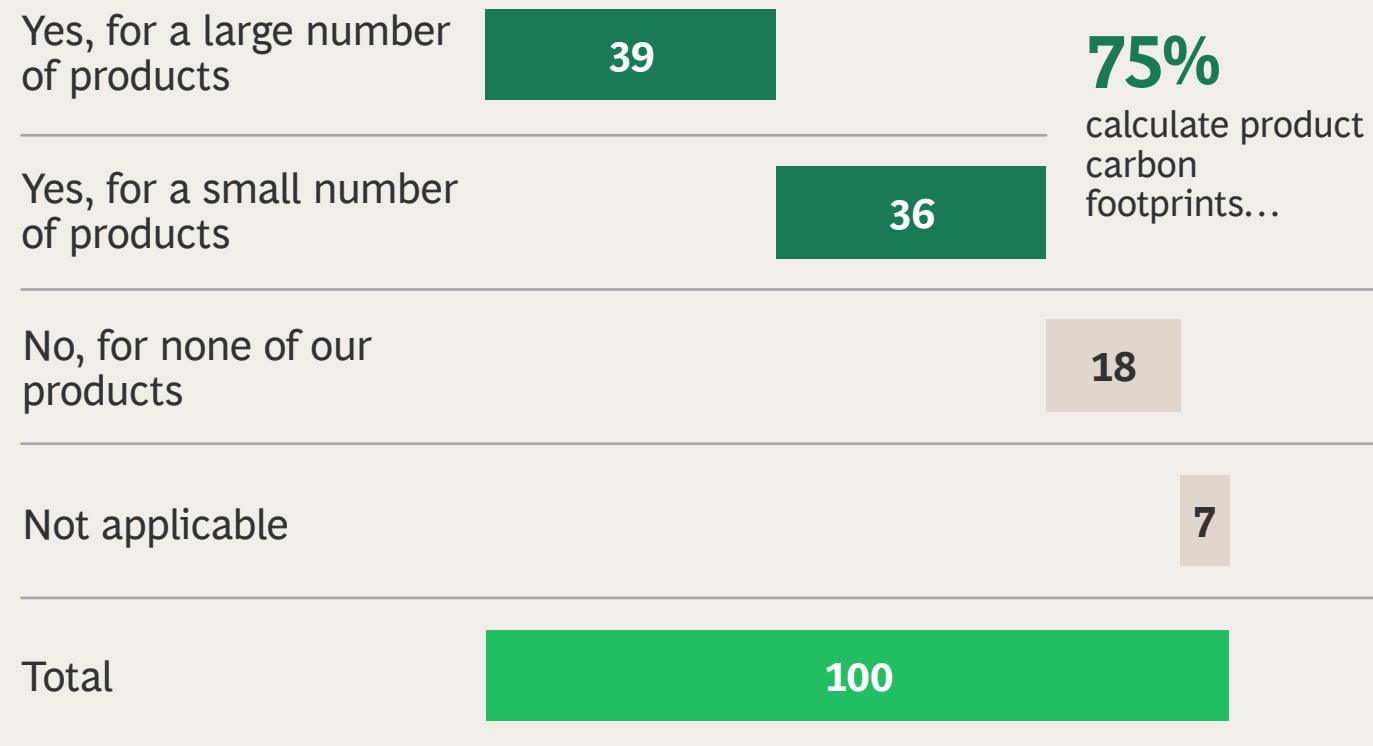
OLIVIER BLUM, FORMER CHIEF STRATEGY & SUSTAINABILITY OFFICER

Source: Schneider Electric 2022 Annual and Climate Reports, press release for 2Q21 sustainability results.

Companies calculate cradle-to-gate product-level emissions today, but many have an opportunity to obtain more complete supplier data

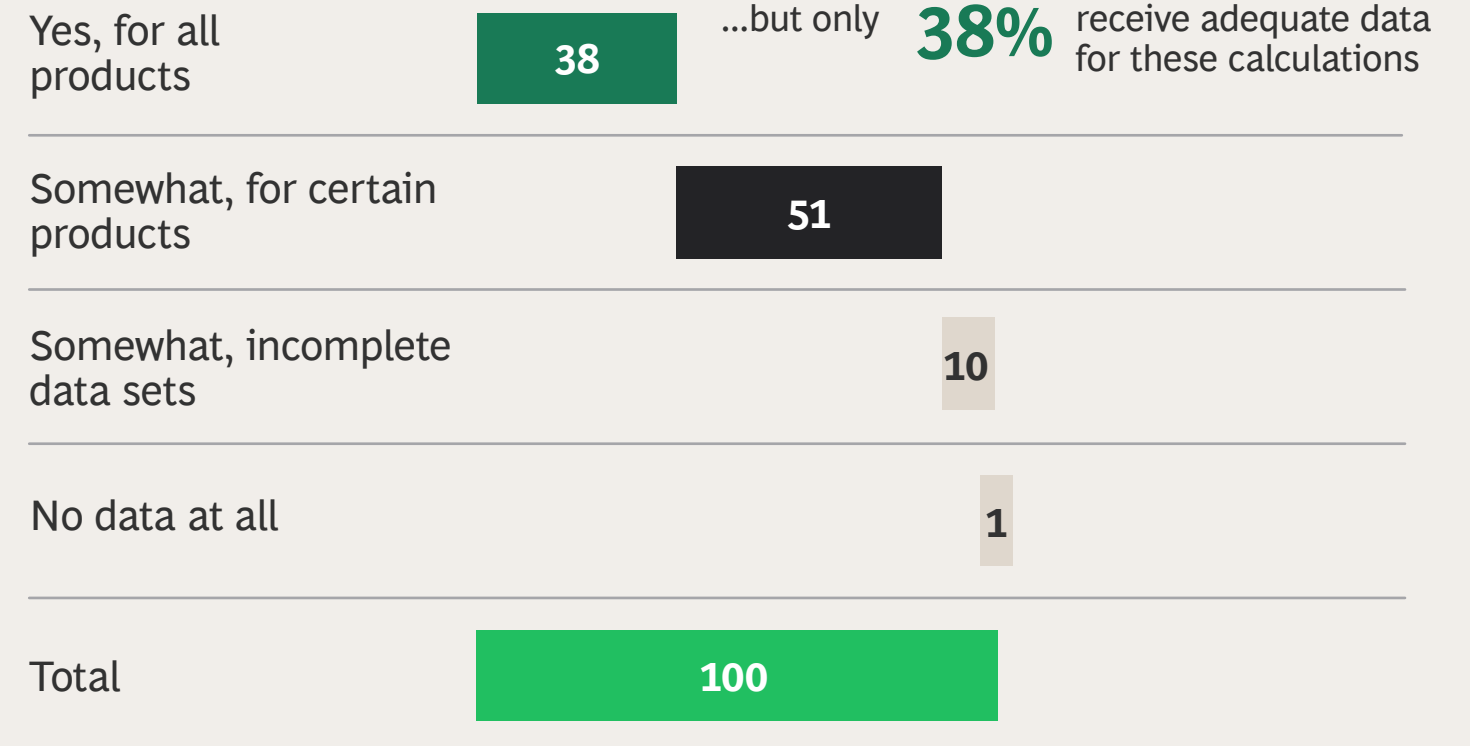
Do you currently assess the cradle-to-gate carbon emissions footprint for your products, in line with the GHG protocol?

RESPONDENTS (%)



If yes, do you obtain sufficient product-level emissions data from your suppliers?

RESPONDENTS (%)



Sources: CO2 AI + BCG Carbon Emissions Survey 2023; BCG analysis.

Note: Definitions provided to respondents: cradle-to-gate = emissions associated with a product from its initial stages (e.g., raw-material extraction) to the point at which the product is ready for distribution; GHG = greenhouse gas; product carbon footprint (PCF) is a measure defined by the GHG protocol that quantifies the total emissions associated with a specific product across its life cycle. Cradle-to-gate PCF includes extraction or harvesting of raw materials all the way through production and transportation.

Klöckner & Co

Nexigen PCF Algorithm

```

def get_emission_steel_production(
    input_data: dict[str, pd.DataFrame],
    article_family_id: int,
    mill_country: str,
    production_route: ProductionRoute,
) -> float:
    """Calculate the emissions from steel production.

    The emission value is based on the production route and product type.

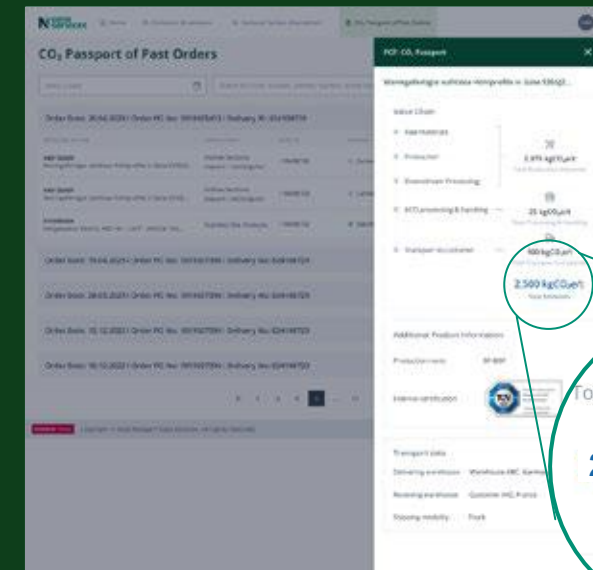
    Raises:
        HTTP_442: If there is no unique entry for the production route and
        product type combination.
    """
    product_type = get_product_type(
        article_family_data=input_data[ARTICLE_FAMILY_DATA],
        article_family_id=article_family_id,
    )
    # Filter the steel production table for production route and product type.
    df_prod = input_data[STEEL_PRODUCTION]
  
```

- Cradle-to-gate emissions transparency
- Available for 97% of all products
- Externally certified 

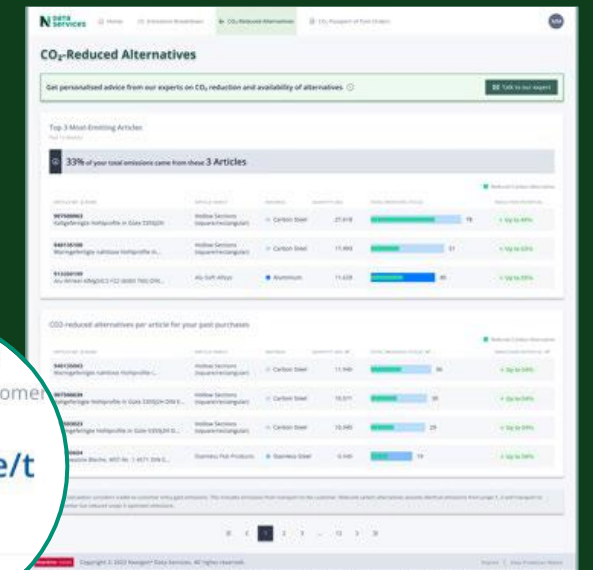
Example: Calculated total emissions of 2,829 kg CO₂e/t

N Data Services

CO₂ Passport



Recommendations



Comprehensive order history including certified product carbon footprint (PCF)



Increased PCF data granularity to understand emissions breakdown and sources



CO₂-reduced product alternative recommendations based on past orders

Reckitt

Example of a company using product carbon footprint assessments to inform sustainable product innovation

CASE STUDY

Sustainable Product Innovation

Reckitt informs its innovation and product development process with detailed footprint data, aiming to reduce environmental impact with each product it replaces

1 Consumer needs and demand for sustainability drive innovation

“ Consumers expect brands to meet their needs, while also using less plastic and emitting less carbon.

FABRICE BEAULIEU, CHIEF MARKETING, SUSTAINABILITY, AND CORPORATE AFFAIRS OFFICER

2 Sustainable Innovation Calculator assesses the life cycle impact of all proposed designs across the below factors, enabling more informed decision making



Carbon



Water



Plastics



Packaging



Ingredients

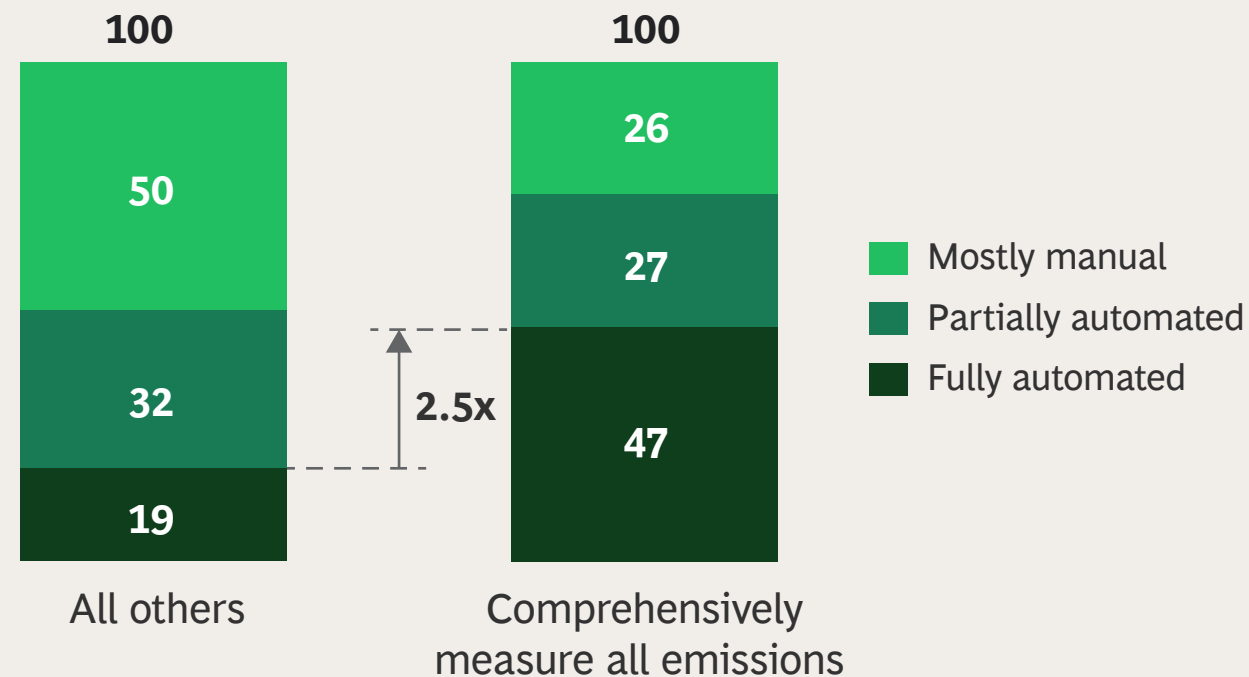
“ We innovate to create value for the consumer, meet their evolving demands, and lower our environmental impact. The scientific precision of our tools helps us create more sustainable and attractive products, fulfilling these goals.

Digital technology solutions are critical to comprehensive measurement and reduction

Companies are 2.5x more likely to comprehensively measure emissions if they use automated digital solutions

To what degree are emissions management processes automated?

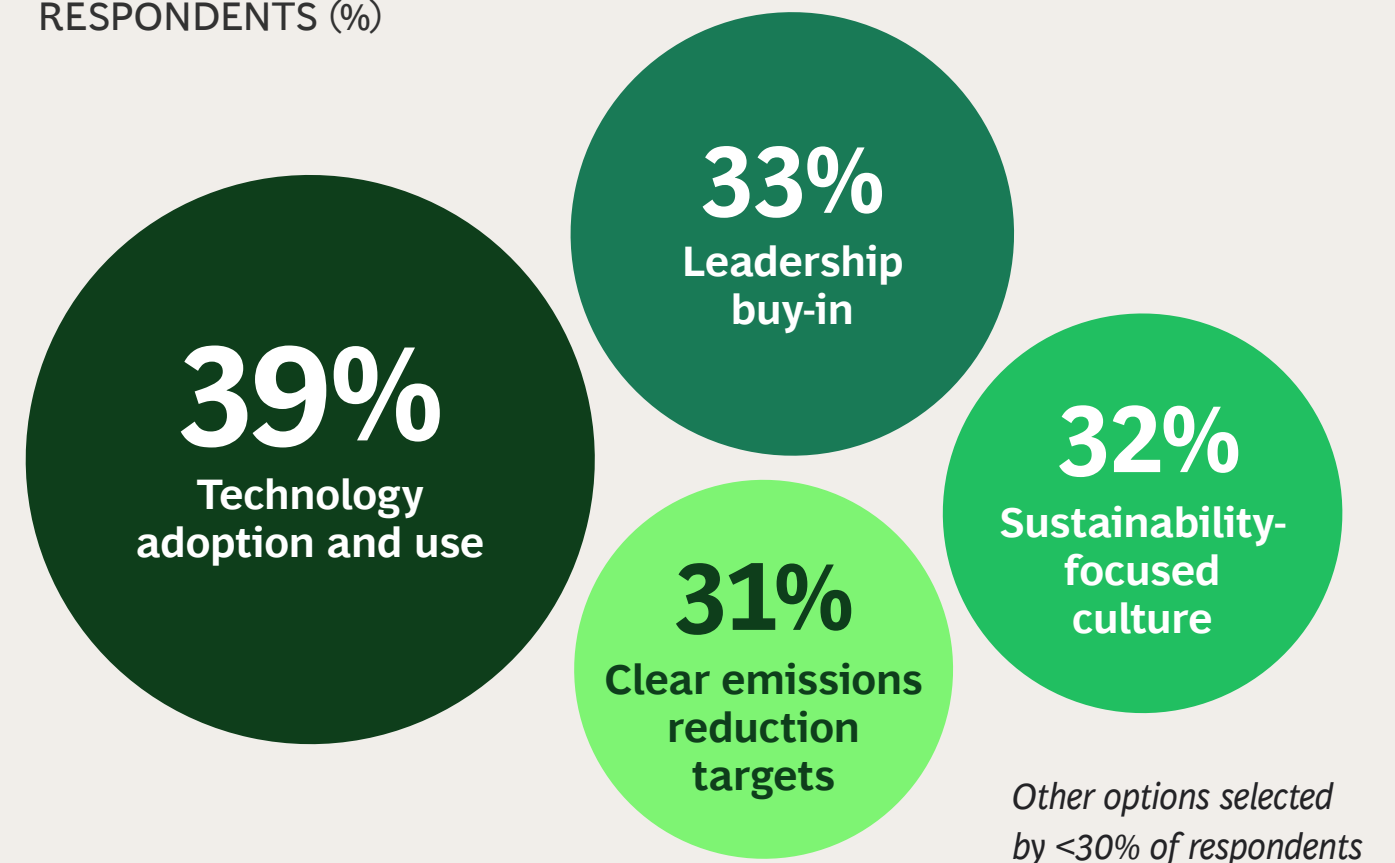
RESPONDENTS (%)



Technology adoption and use are ranked as the leading strategic enabler for emissions reduction

What enablers have most contributed to effective emissions reduction initiatives in your organization?

RESPONDENTS (%)



Sources: CO2 AI + BCG Carbon Emissions Survey 2023; BCG analysis.
Note: Numbers have been rounded.

As companies look to the future, they envision prominent roles for AI in emissions management

In which parts of your carbon management process do you plan to use AI-powered technology and tools three years from now?

RESPONDENTS (%)



What would accelerate emissions measurement and reduction going forward?

“ Inclusion of AI to make intelligent decisions on energy usage and decarbonization initiatives

“ AI-powered advanced software for measuring carbon footprints

“ AI and machine-learning algorithms for predicting emissions trends and optimizing roadmaps

Key insights from the 2023 Carbon Emissions Survey

Companies did not make substantial progress in comprehensive measurement and reduction in the past year:

0pp

change in comprehensive measurement year-over-year

The journey has started with signs of improvement in Scope 3 to measure and partially commit:

19pp

increase in measurement

12pp

increase in targets set since 2021

Three regions have shown notable progress in comprehensive Scopes 1 and 2 measurement since 2021, with increases of:

9pp

South America

7pp

Asia-Pacific

5pp

North America

Path to success uncovered by the 2023 Carbon Emissions Survey

Companies increasingly recognize the business benefits of decarbonization:

40% of respondents estimated an annual financial benefit of at least

\$100M

for meeting emissions reduction targets, up 3pp from 2022

Companies that report reducing emissions in line with their ambitions are:

1.7x more likely to collaborate with their supply chain

1.9x more likely to calculate product carbon footprints for their portfolio

2.2x more likely to have fully automated emissions management processes

2x more likely to consider emissions-reporting regulations to be a key enabler of reduction

Looking ahead, AI is expected to play a more prominent role in emissions management:

30%

of respondents plan to expand deployment of AI-powered tools in the next three years across a variety of functions

Thank you.