What does the Paris Agreement mean for research facilities?

Lessons learned from the corporate sector

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Energy for Sustainable Science at Research Infrastructures
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CDP
DISCLOSURE INSIGHT ACTION

Content:

1. **Setting the context**
2. What can we learn from the corporate sector?
    a. Science Based Targets
    b. RE100
3. Discussion / Q&A

20%

of global GHG emissions

5600+ companies

533 cities

800+ investors

71 states & regions

During COP 21 in Paris, 195 countries adopted the **Paris Agreement** committing to hold the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels

Flow: Net anthropogenic CO2 emissions per year

Bucket size (volume): Carbon budget

Level: Cumulative CO2 emissions

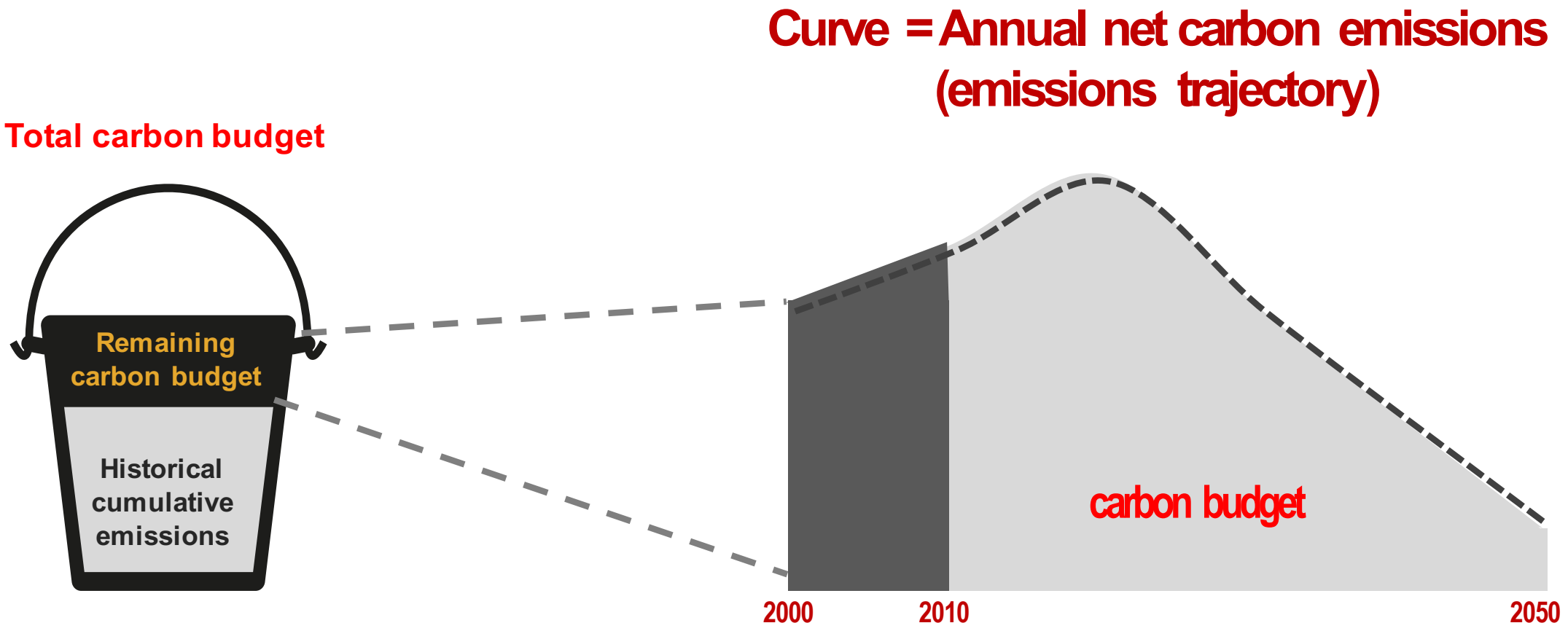
Cumulative carbon emissions

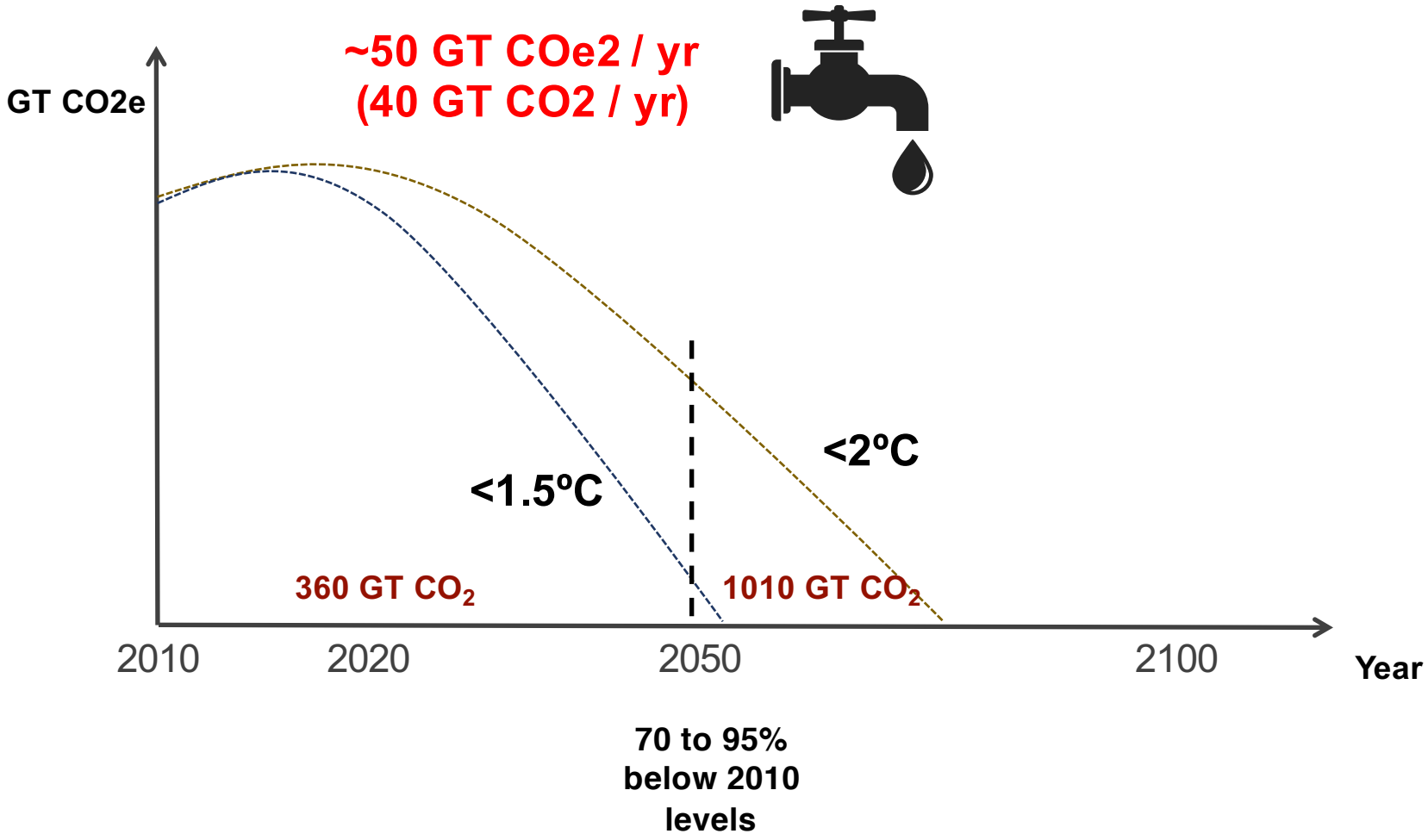
$\propto$

Long term warming

$\propto$

Climate impacts


Curve = Annual net carbon emissions (emissions trajectory)
Total carbon budget
Remaining carbon budget
Historical cumulative emissions
carbon budget
2000
2010
2050


~50 GT COe2 / yr
(40 GT CO2 / yr)
GT CO2e
<2ºC
<1.5ºC
360 GT CO_2
1010 GT CO_2
2010
2020
2050
2100
Year
70 to 95%
below 2010
levels

CO_2 only;
50% probability

Below 2ºC

CO_2 only;
50% probability

Well below 2ºC

CO2 only
66% probability

1.5 ºC

Understanding 1.5ºC and 2ºC emissions trajectories

	< 1.5ºC	< 2ºC
Remaining carbon budget	360 GT CO_2	1010 GT CO_2
Global emissions peak	Before 2020	Before 2020
Global GHG emissions by 2050	70 to 95% below 2010 levels	40 (49) to 70% below 2010 levels
Phase out of global energy and industry CO_2 emissions	Between 2045 and 2055	Between 2060 and 2075

What does this mean?

- For countries
- For states / regions
- For cities
- For investors
- For businesses
- **For research institutions?**
- …

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Carbon Management

Climate Stewardship

Measure & disclose

- Measure and disclose the climate impact and risks.

Reduce

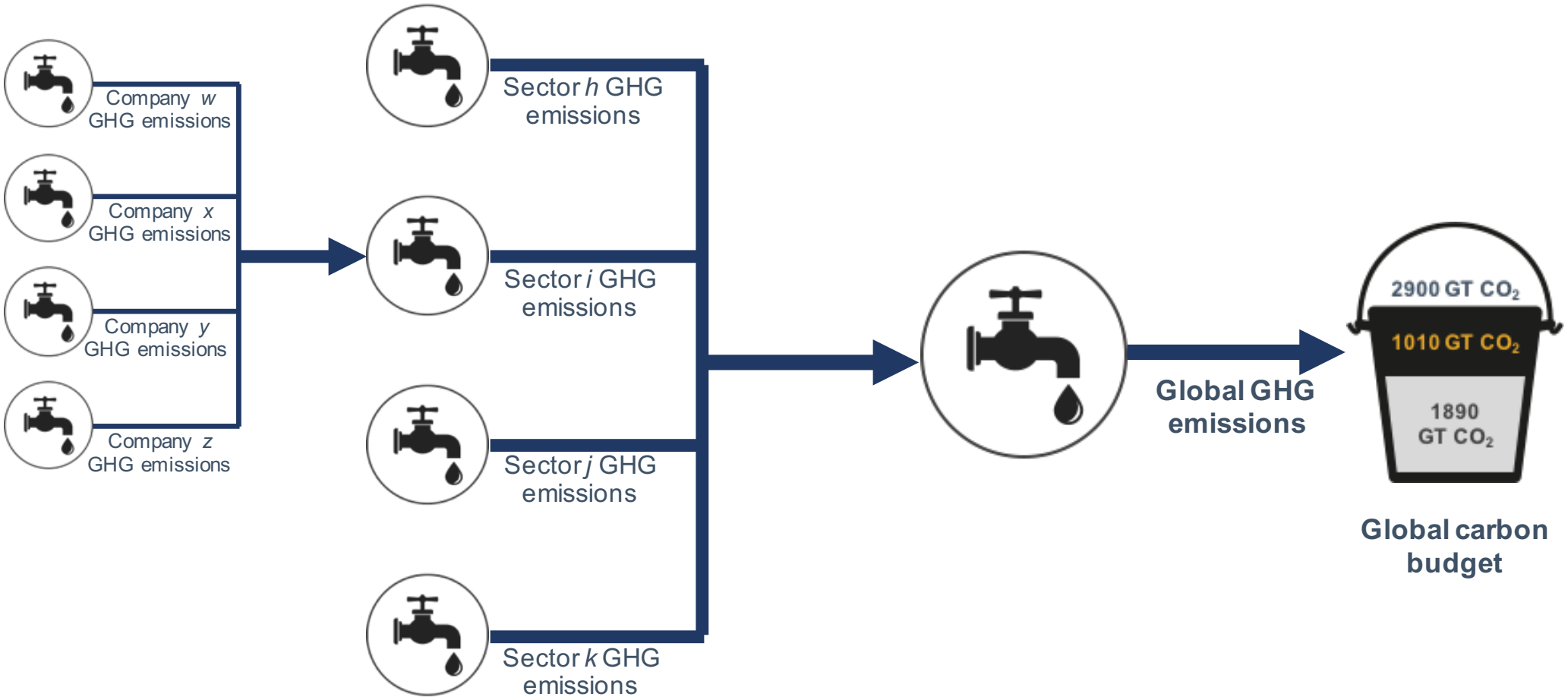
- Take action to reduce the company's climate impact (in line with science) and its associated risks.

Influence

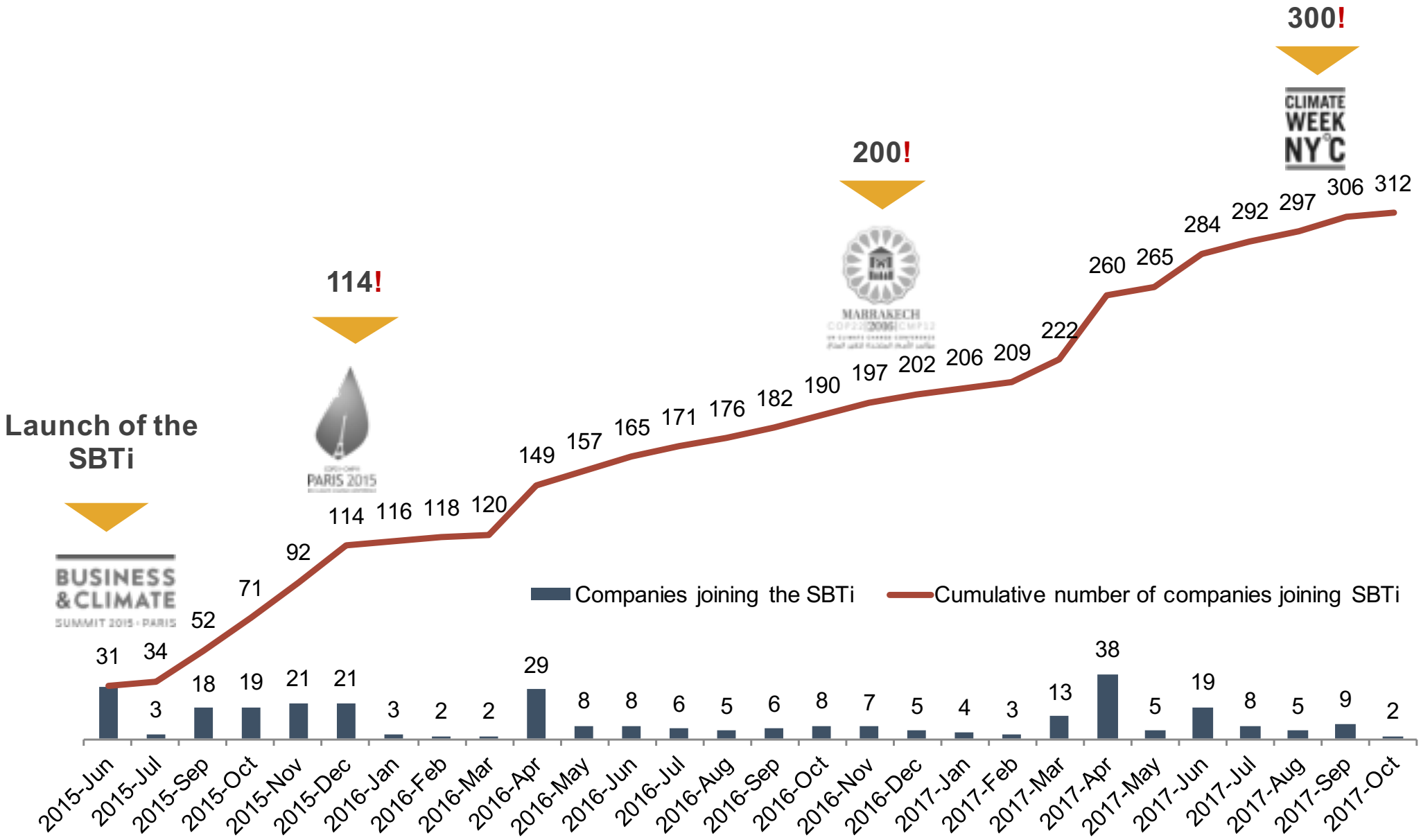
- Act as an agent of change in the construction of a zero carbon resilient economy

5600+

89%


Company w GHG emissions
Company x GHG emissions
Company y GHG emissions
Company z GHG emissions
Sector h GHG emissions
Sector i GHG emissions
Sector j GHG emissions
Sector k GHG emissions
Global GHG emissions
2900 GT CO2
1010 GT CO2
1890 GT CO2
Global carbon budget

“GHG emissions reduction targets that are consistent with the level of decarbonization that, according to climate science, is required to keep global temperature increase within 1.5 to 2ºC compared to pre-industrial temperature levels”

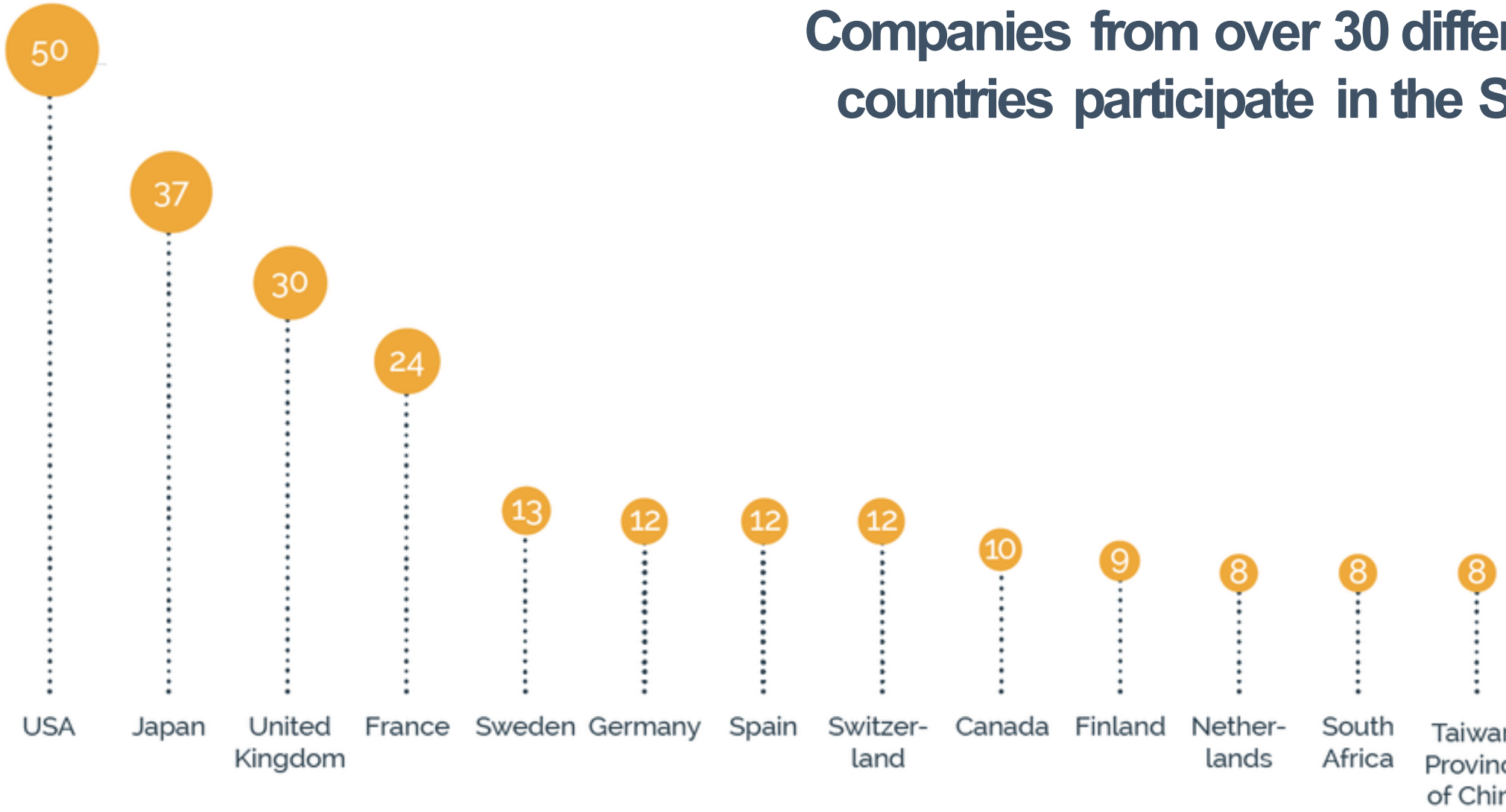

300!
200!
114!
Launch of the SBTi
BUSINESS & CLIMATE SUMMIT 2015 · PARIS
PARIS 2015
MARRAKECH
CLIMATE WEEK NYC
Companies joining the SBTi
Cumulative number of companies joining SBTi
31 34 52 71 92 114 116 118 120 149 157 165 171 176 182 190 197 202 206 209 222 260 265 284 292 297 306 312
31 3 18 19 21 21 3 2 2 29 8 8 6 5 6 8 7 5 4 3 13 38 5 19 8 5 9 2
2015-Jun 2015-Jul 2015-Sep 2015-Oct 2015-Nov 2015-Dec 2016-Jan 2016-Feb 2016-Mar 2016-Apr 2016-May 2016-Jun 2016-Jul 2016-Aug 2016-Sep 2016-Oct 2016-Nov 2016-Dec 2017-Jan 2017-Feb 2017-Mar 2017-Apr 2017-May 2017-Jun 2017-Jul 2017-Aug 2017-Sep 2017-Oct

324!

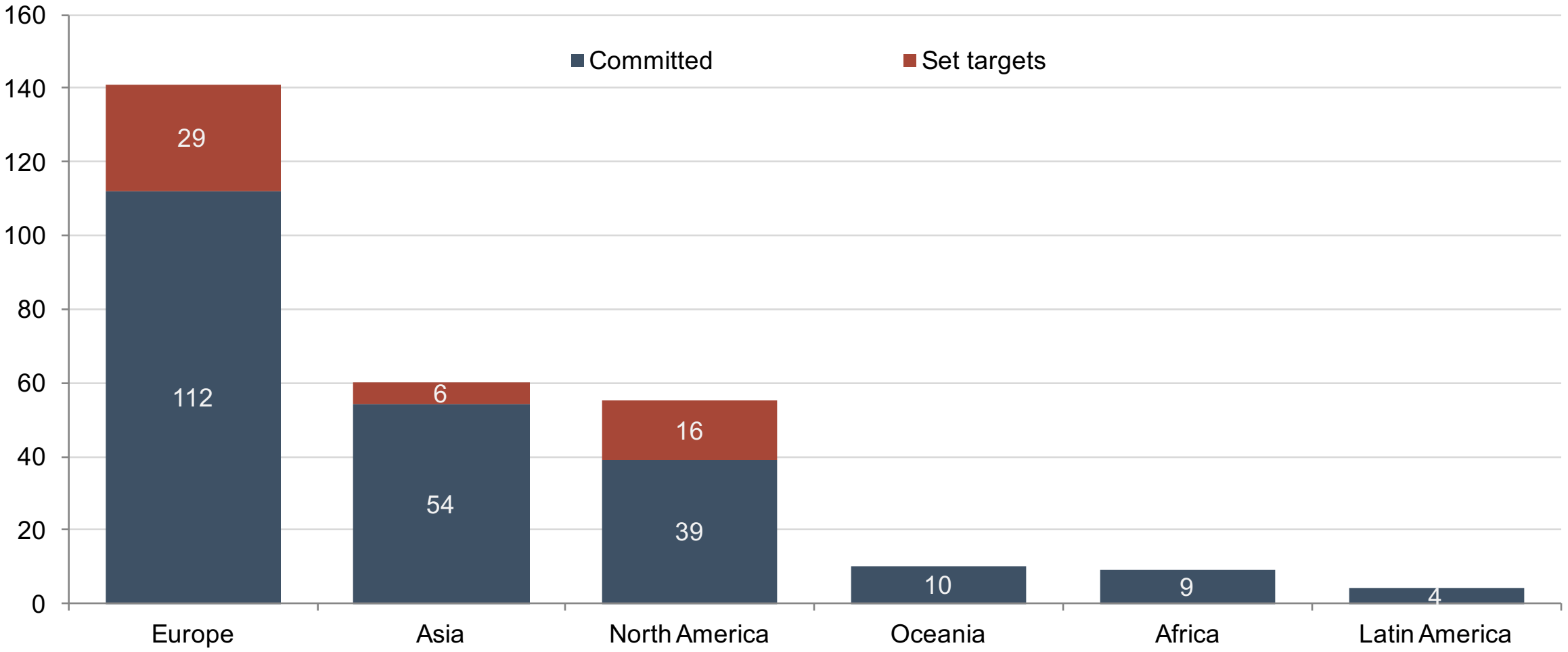
324 Companies displaying the ambition that is required to meet the goals of the Paris Agreement and keep the world on track for a below 2 degree trajectory:

- Directly responsible for 759 MT CO_2e, roughly equal to Canada's annual emissions.
- US$6.81 trillion in market value, comparable to the value of the second largest stock exchange in the world, NASDAQ.

Companies from over 30 different countries participate in the SBTi



…spread across all continents…



Companies committed to Science Based Targets initiative

Banks, Diverse Financials and Insurance

22 COMPANIES

Food and Beverage Processing

22 COMPANIES

Technology Hardware and Equipment

20 COMPANIES

Consumer Durables

19 COMPANIES

Software and Services

17 COMPANIES

Electrical Equipment and Machinery

15 COMPANIES

Electric Utilities

13 COMPANIES

Telecommunication

12 COMPANIES

Real Estate

11 COMPANIES

Pharmaceuticals

11 COMPANIES

Construction and Engineering

11 COMPANIES

Retailing

10 COMPANIES

Food and Staples Retailing

10 COMPANIES

Air Freight and Logistics

9 COMPANIES

Professional Services

8 COMPANIES

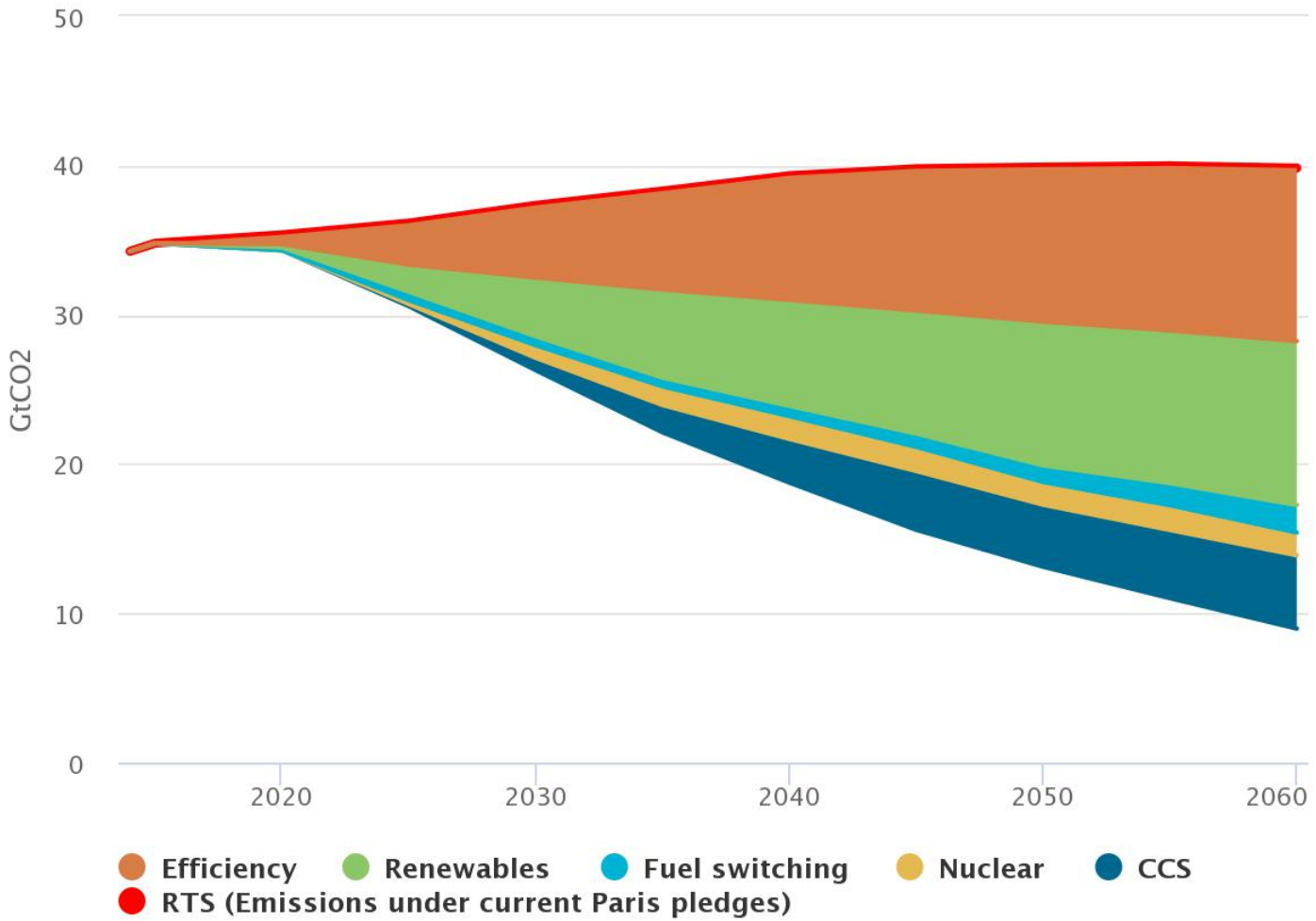
Automobiles and Components

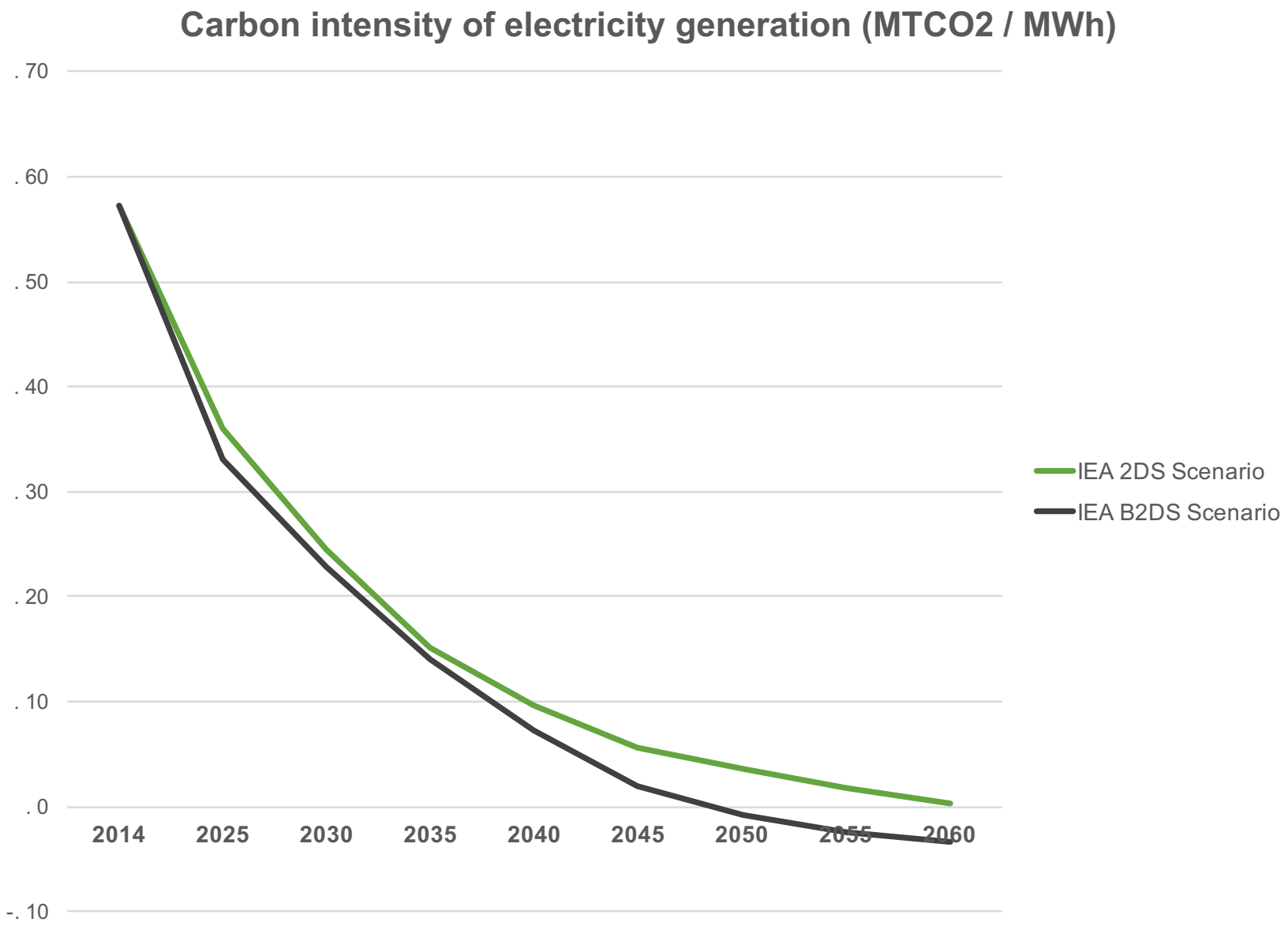
8 COMPANIES

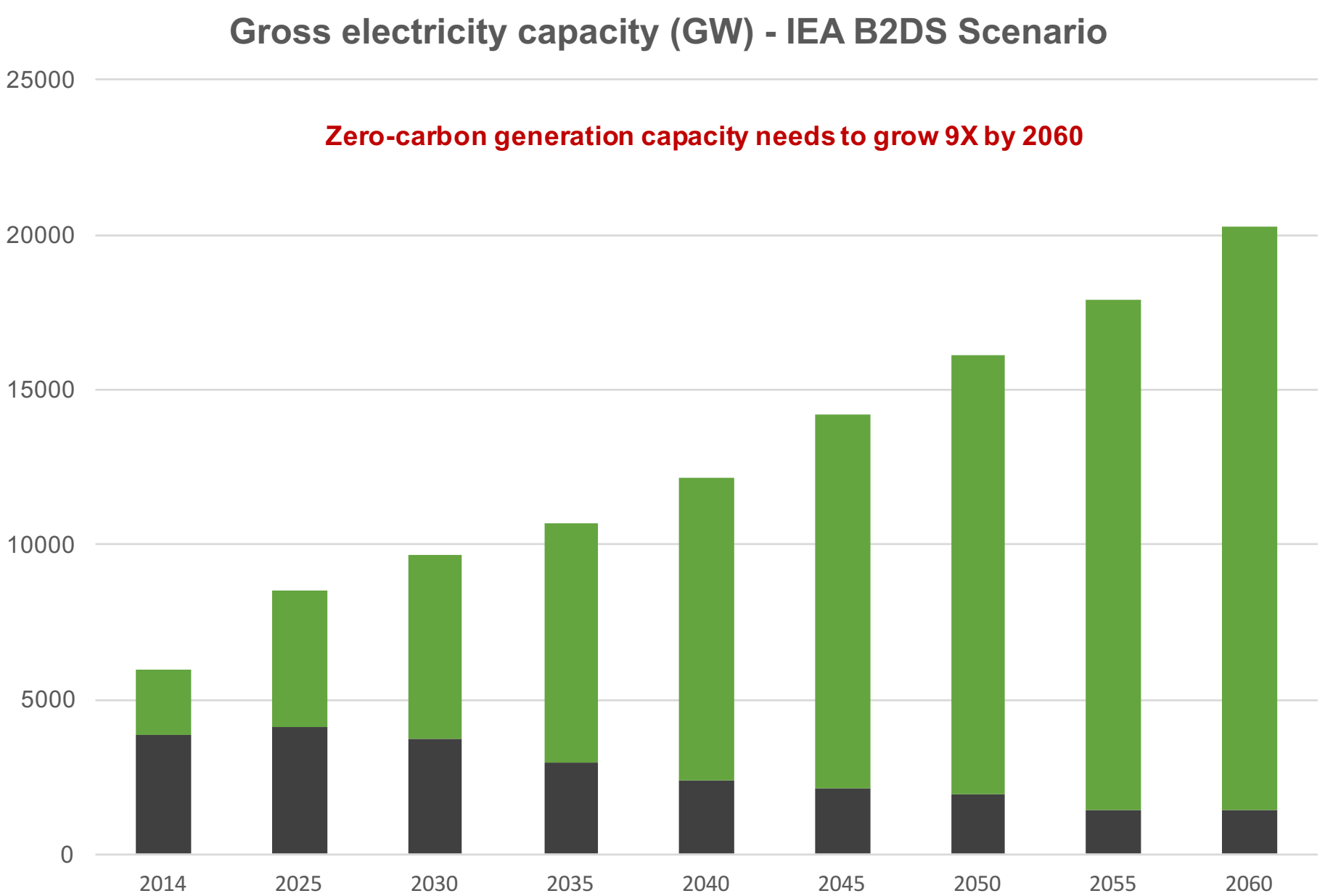
…representing a wide variety of sectors… and influencing every single value-chain in the economy.

How each technology area contributes to CO2 emissions reductions

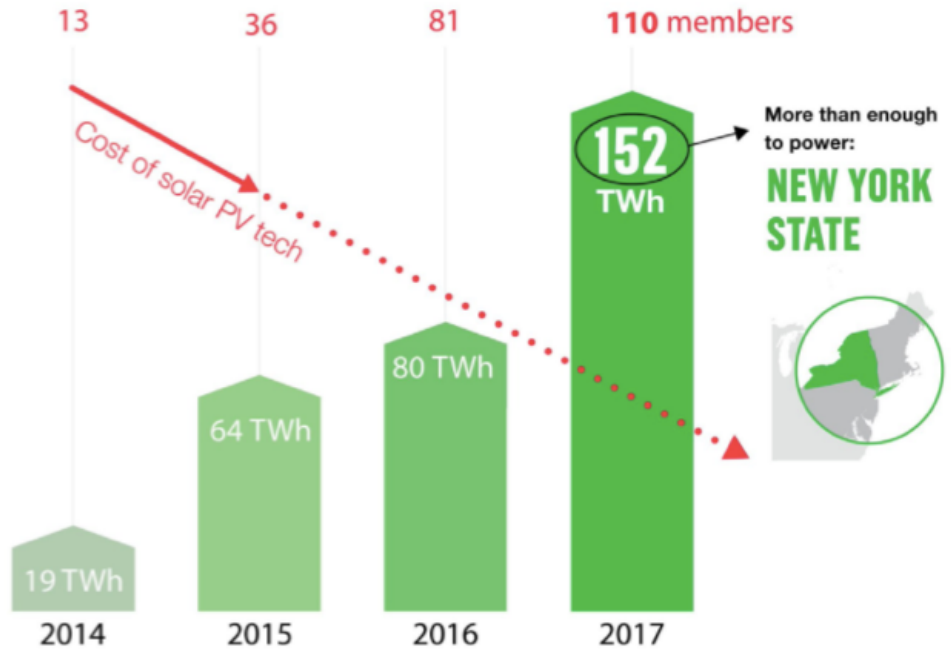
ETP 2DS Scenario. Click a technology in the legend to show/hide.




Carbon intensity of electricity generation (MTCO2 / MWh)
. 70
. 60
. 50
. 40
. 30
. 20
. 10
. 0
-. 10
2014
2025
2030
2035
2040
2045
2050
2055
2060
IEA 2DS Scenario
IEA B2DS Scenario


Gross electricity capacity (GW) - IEA B2DS Scenario
Zero-carbon generation capacity needs to grow 9X by 2060
25000
20000
15000
10000
5000
0
2014
2025
2030
2035
2040
2045
2050
2055
2060

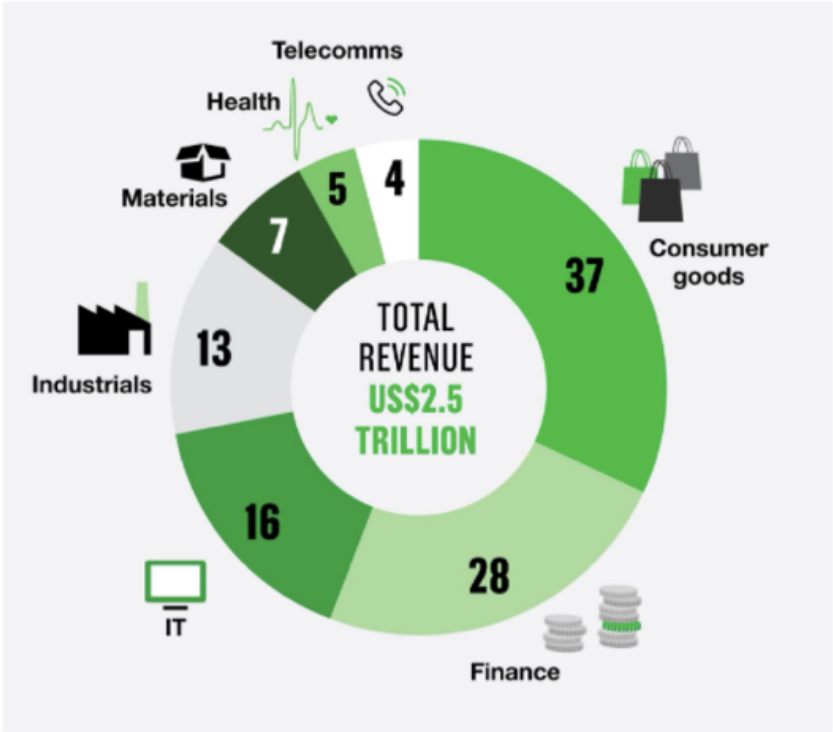
RE 100 THE GROWTH TO 110 MEMBERS



THE CLIMATE GROUP

CDP DRIVING SUSTAINABLE ECONOMIES

RE 100 THE 110 MEMBERS' SECTORS



THE CLIMATE GROUP

CDP DRIVING SUSTAINABLE ECONOMIES

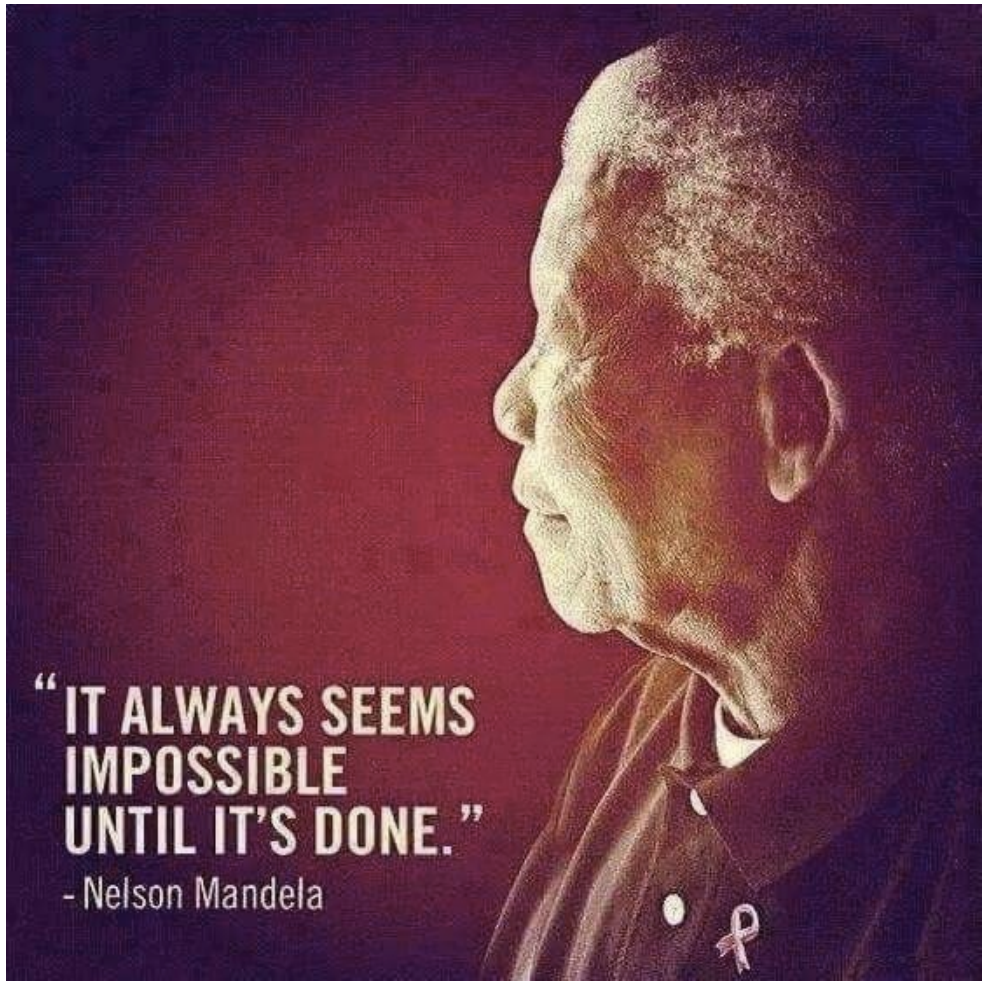
RE 100 | °C | CDP

114

of the world's most influential companies, committed to 100% renewable power

Lessons learned from the transition in the corporate sector:

1. Despite political uncertainty, businesses are embracing the challenge to decarbonise and are leading on the transition;
2. There are clear signs of disruption in 'new industries' (e.g. solar, EVs) and the decline in old industries (e.g. coal, internal combustion);
3. Leadership by non-state actors is likely to shape the regulatory and market policies that inform our transition away from fossil fuels.



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