

# EY Climate Cash and Tax Barometer 2022

Financial trends of governments and  
businesses addressing climate change

# Executive summary

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The EY Cash and Tax Barometer examines spending by governments and business on policies designed to forward climate goals. It offers an analytical perspective on how to better address climate change based on financial trends. This updated study has identified significant investment and progress but also suggests that more can be done.

The challenges that climate change is posing for the environment, the economy and the global population cannot be addressed without meaningful investment, and this Barometer was developed to measure and track that investment. The greater the investment, the greater the progress that can be made in addressing the issues that climate change poses in order to create and protect value for business, society and the planet.

We are living in an increasingly globalized world. Climate change is global, and the issues it raises are global. It therefore stands to reason that global financing is needed to incentivize and support solutions.

At Ernst & Young LLP, we hope that monitoring global financing will increase awareness and facilitate more investment in programs and policies that mitigate the negative effects of climate change and move us toward global climate goals.

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# Introduction

## EY Climate Cash and Tax Barometer 2022

On 12 December 2015, at the United Nation Climate Change Conference (COP21), 196 parties adopted the Paris Agreement, an international treaty with a goal to combat global warming and adapt to its effects. With an increase of approximately 1.1°C from 1850-1900 to 2010-2019, the treaty aims to limit further warming to well below 2°C, preferably to 1.5°C. Current global warming has already led to compound extreme weather events and increased physical risks associated with warming in many places around the world, which prompted the adoption of the Paris Agreement.

Adoption of the Paris Agreement has mobilized billions of dollars of public and private sector funds to slow climate change and facilitate adaptation to current warming. The EY Climate Cash And Tax Barometer examines funds mobilized by the public sector in major economies (the G20) via carbon pricing, green tax expenditures, and green recovery from COVID-19; it also analyzes the progress of large companies (the S&P 500) in the private sector. By summarizing these trends, the Barometer helps to track progress on the critical goal of mitigating global warming.

There are, of course, significant efforts to mitigate and adapt to climate change both in the public and private sector that are not captured by this Barometer. This analysis, however, is limited by publicly available data comparable across jurisdictions and companies.

The data are also supplemented by highlights of what major companies are doing to facilitate mitigation of and adaptation to climate change. These select companies, ConocoPhillips, E.ON, FedEx, Procter & Gamble (P&G) and The Coca-Cola Company, span a variety of geographies and markets.

All content related to these companies has been reviewed and approved by the quoted individual.

Public sector	Carbon emissions	Carbon emissions in the G20 (i.e., emissions from fossil fuels combustion emitted within a national territory)
	Carbon pricing	Carbon pricing initiatives in the G20 jurisdictions (i.e., carbon taxes and cap-and-trade/ emissions trading schemes)
	Green tax expenditures	Tax expenditures that incentivize households and businesses to reduce emissions by the G20 jurisdictions
	Green recovery	Government spending to accelerate towards a low-emission economy by focusing on a green recovery from COVID-19
Private sector	S&P 500 emissions	Scope 1, 2 and 3 emissions, emissions efficiency performance, and emissions reduction targets by S&P 500 companies

# Barometer summary

## Significant investment by the public and private sector with opportunity for growth

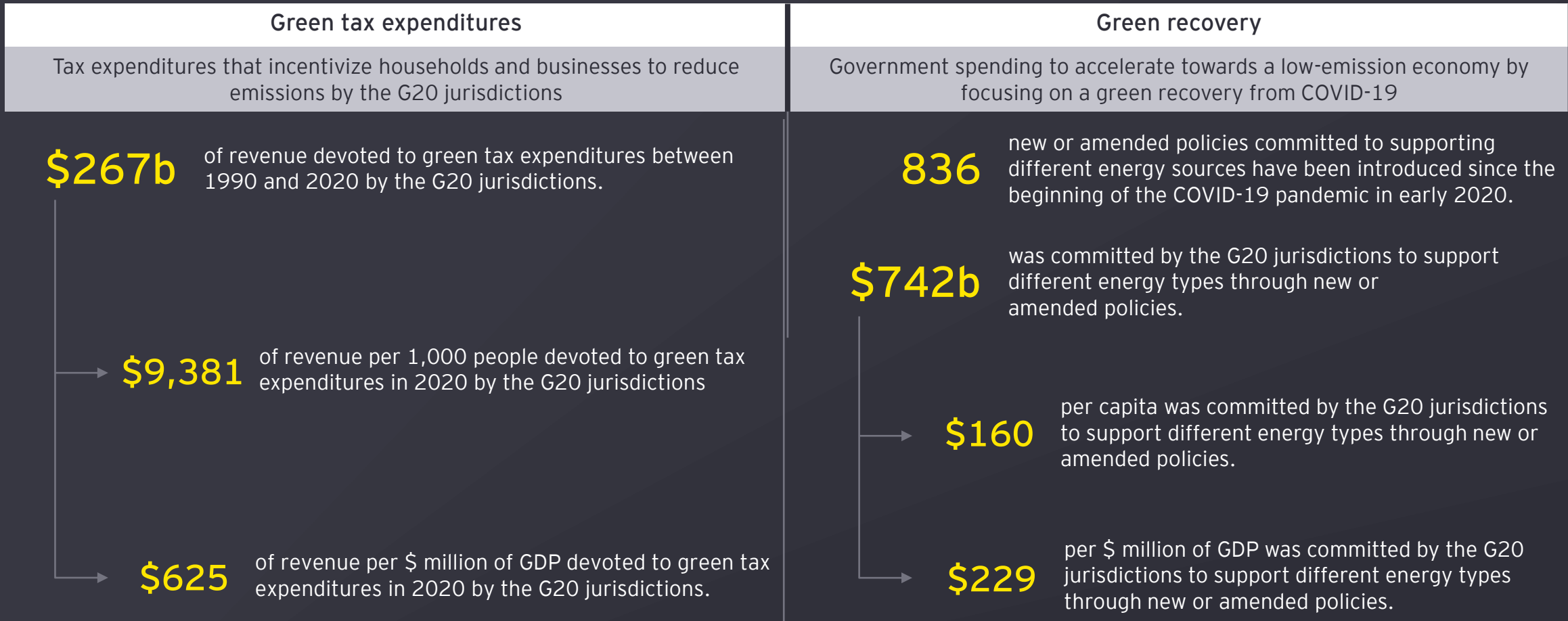
### Action by the public sector in major economies (G20)

Carbon emissions	Carbon pricing
Carbon emissions in the G20 (i.e., emissions from fossil fuels combustion emitted within a national territory)	Carbon pricing initiatives in the G20 jurisdictions (i.e., carbon taxes and cap-and-trade/ emissions trading schemes)
<b>28.4b</b> tonnes of CO2 were emitted by the G20 in 2018, accounting for 84.5% of the world's emissions.	<b>70%</b> of G20 jurisdictions have at least one national or subnational carbon pricing initiative in place in 2022; this is unchanged from 2021.
<b>52%</b> increase in CO2 emission in the G20 jurisdictions from 1995 to 2018.	<b>13%</b> percentage point increase in share of emissions covered by a carbon pricing initiative in the G20 from 2018 to 2021.
<b>23%</b> increase in CO2 emission per capita in the G20 jurisdictions from 1995 to 2018.	<b>28%</b> of all emissions in the G20 are covered by a carbon pricing initiative. There is overlap of emissions covered by carbon tax and ETS initiatives.
<b>43%</b> decrease in CO2 emission per \$ GDP in the G20 jurisdictions from 1995 to 2018.	<b>7%</b> of all emissions in the G20 are covered by carbon taxes.
	<b>22%</b> of all emission in the G20 are covered by an Emissions Trading Scheme (ETS).

# Barometer summary

## Significant investment by the public and private sector with opportunity for growth

### Action by the public sector in major economies (G20)



# Barometer summary

Significant investment by the public and private sector with opportunity for growth

## Analyzing change in emissions of S&P 500 companies

### S&P 500 emissions

Scope 1, 2 and 3 emissions, emissions efficiency performance, and emissions reduction targets by S&P 500 companies,

**66%** of all S&P 500 companies have committed to an emissions reduction target as of fiscal year 2020.

**19.6%** decrease in scope 1 and 2 emissions by S&P 500 companies over the 2017 to 2020 period.

### Median company performance

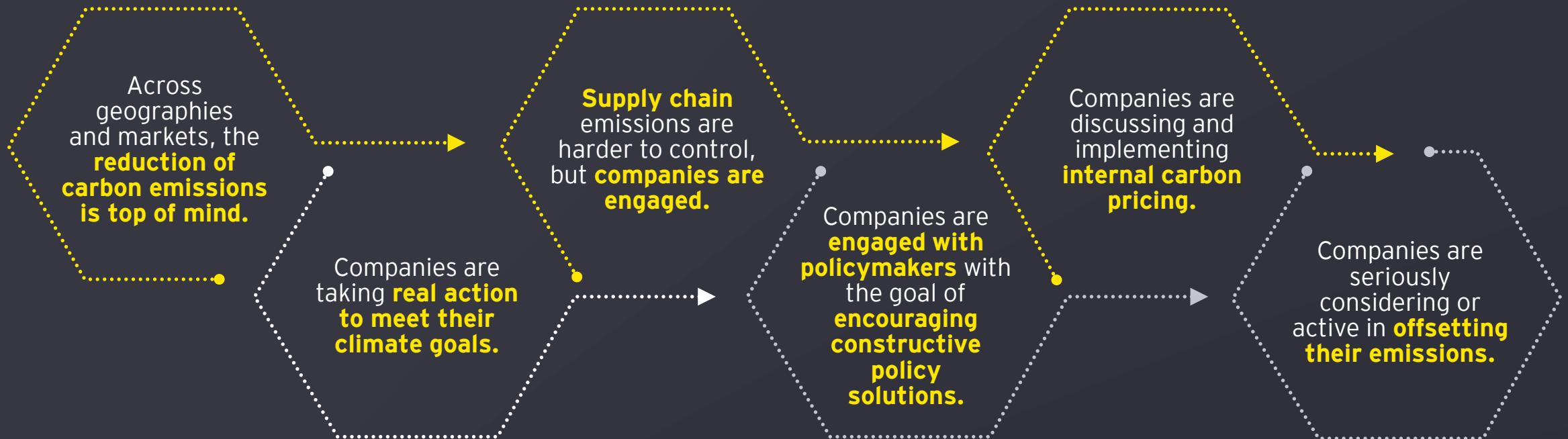
**8.8%** decrease in total emissions (Scope 1,2 and 3) by the median S&P 500 company over the 2017 to 2020 period.

**8.1%** decrease in total emissions per \$ of revenue (Scope 1, 2 and 3) by the median S&P 500 company over the 2017 to 2020 period.



# Snapshot of corporate views – megatrends

Key business trends spanning various industries and jurisdictions





# Public sector

Examining emissions reduction performance as well as climate-related tax and spending policies in the G20

This section comprises of the following five sub-sections

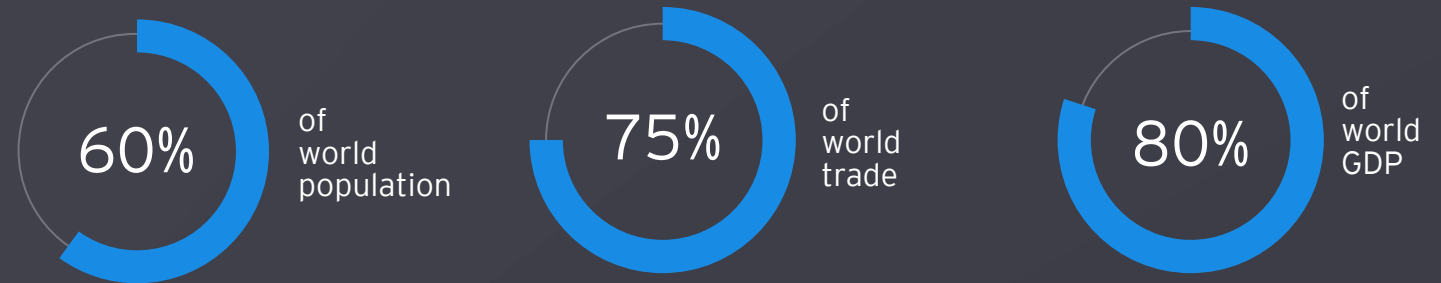
## Public sector

- ① Scope: G20 jurisdictions
- ② Carbon emissions
- ③ Carbon pricing
- ④ Green tax expenditures
- ⑤ Green recovery

For the public sector, the EY Climate Cash and Tax Barometer examines the funds mobilized in the G20 jurisdictions via carbon pricing, green tax expenditures and green recovery from COVID-19.

## What are the G20 jurisdictions?

The G20 is the international forum that brings together the world's major economies. Its 20 members account for a majority of the world's GDP, trade, and population.



## G20 members

Argentina	Australia	Brazil	Canada	China
France	Germany	India	Indonesia	Italy
Japan	Mexico	Russia	Saudi Arabia	South Africa
South Korea	European Union	Turkey	United Kingdom	United States

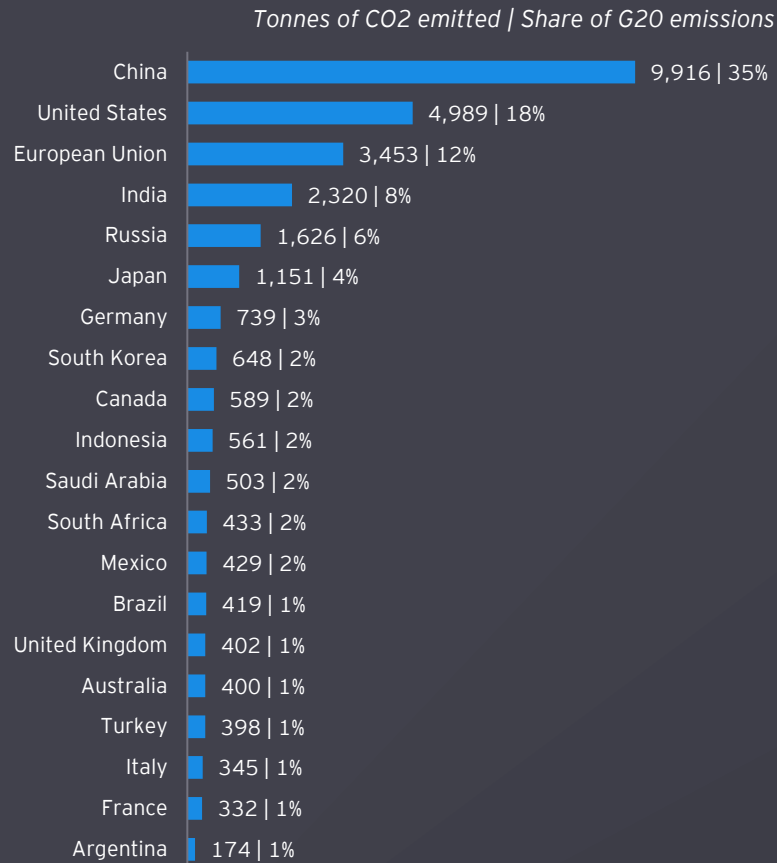
# Carbon emissions in the G20 jurisdictions

Public sector

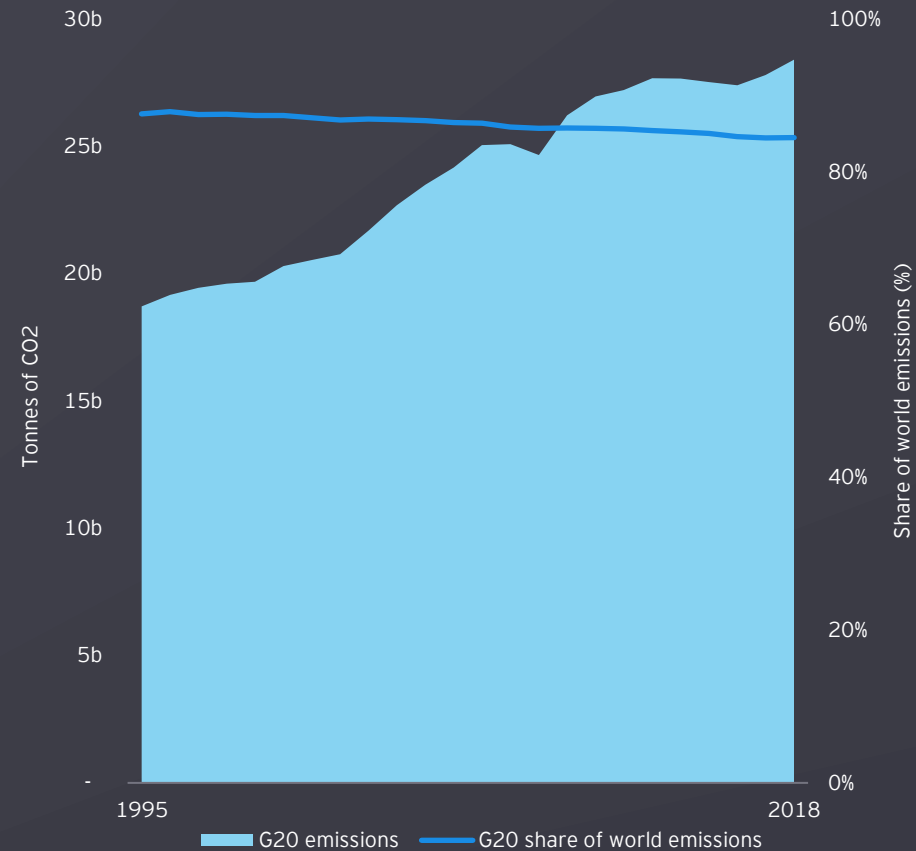


Carbon emissions

**28.4b** tonnes of carbon emitted by the G20 in 2018



**84.5%** of the world's carbon emission in 2018 were by the G20, down from 87.6% in 1995



## Key footnotes

- ▶ Estimates for carbon emissions are in tonnes of CO2.
- ▶ The carbon emissions data shown reflects production-based estimates of CO2 emissions for each jurisdiction. Notably there are other methods of emissions accounting, for instance, demand-based emissions.
- ▶ Estimates for the European Union (EU) include all EU members. This includes France, Germany, and Italy, which are also separately members of the G20. Therefore, estimates for emissions, and share of emissions will not sum to total.
- ▶ Figures are rounded.

## Key sources

- ▶ Organisation for Economic Co-operation and Development (OECD)

See technical appendix for full list of footnotes and sources.

# Carbon emissions - change over 1995-2018

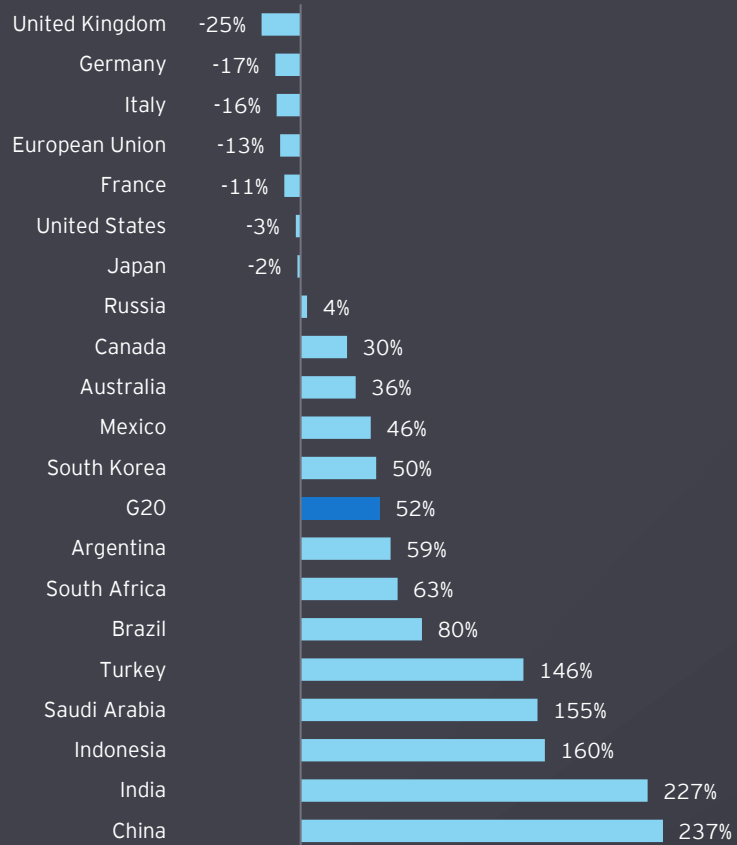
Public sector



Carbon emissions

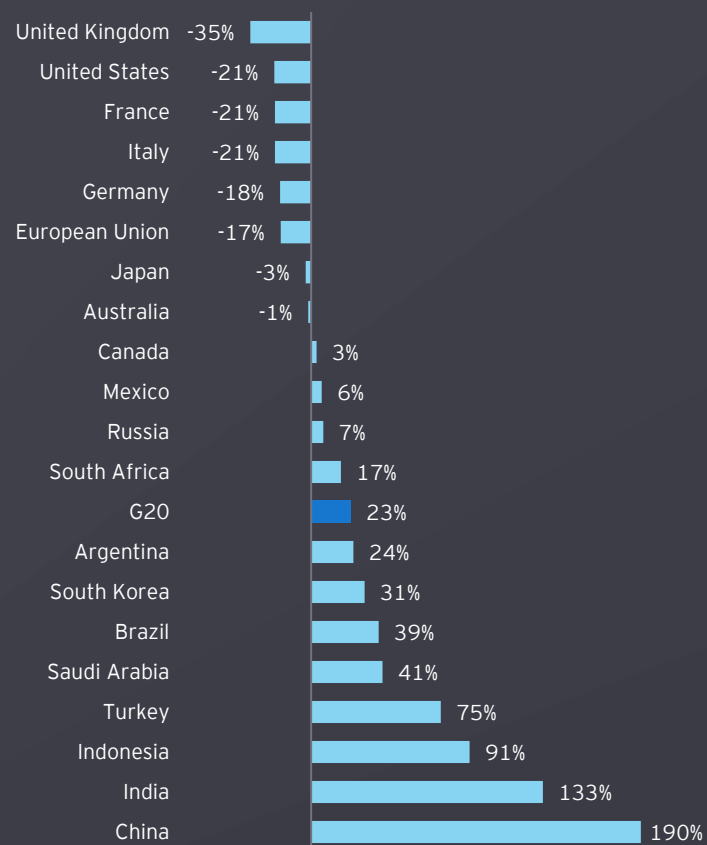
## % change in total carbon emissions

**52%** increase in carbon emissions in the G20 jurisdictions from 1995 to 2018



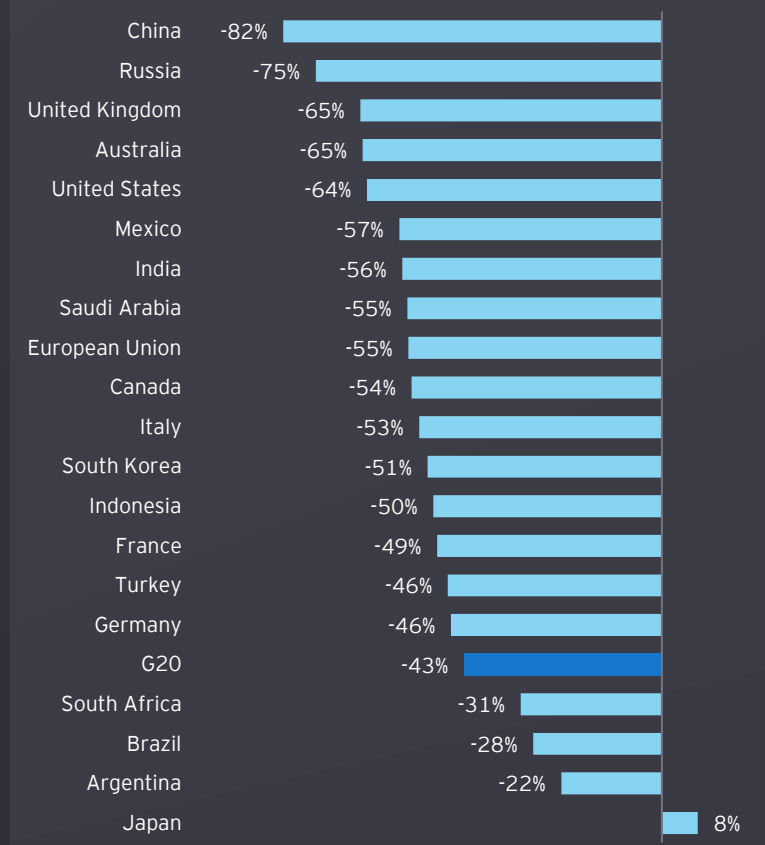
## % change in total carbon emissions per capita

**23%** increase in carbon emissions per capita in the G20 jurisdictions from 1995 to 2018



## % change in total carbon emissions per \$GDP

**43%** decrease in carbon emissions per \$GDP in the G20 jurisdictions from 1995 to 2018



## What is carbon pricing, and what is its role in climate action?

Carbon prices are a relatively simple and efficient mechanism for reducing greenhouse gas (GHG) emissions. Specifically, carbon pricing makes goods and services that are carbon intensive relatively more expensive than other goods and services that are less carbon intensive. Businesses and households respond by purchasing less of the more expensive carbon-intensive goods and services, thus generally reducing GHG emissions.

There are two main strategies for implementing a price on carbon: the first sets a price on GHG emissions and allows the quantity of GHG emissions to adjust (i.e., a carbon tax) and the second limits the quantity of GHG emissions and allows the price to adjust (i.e., a cap-and-trade system or ETS).

### Examples of carbon pricing initiatives

EU ETS	France carbon tax	RGGI (US)
Mexico carbon tax	China national ETS	Japan carbon tax

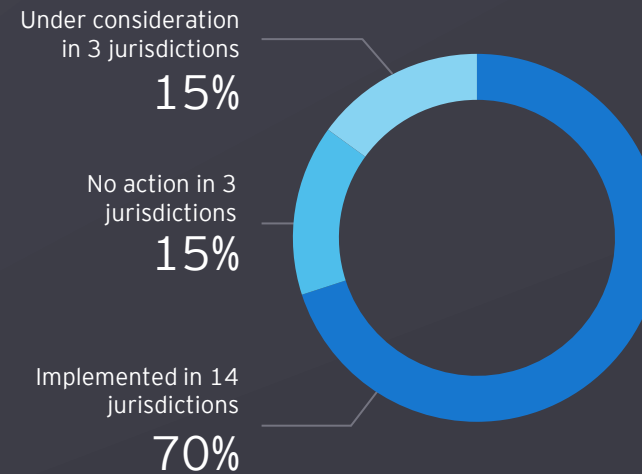
GLOBAL

**82** regional, national or subnational jurisdictions globally have implemented carbon pricing initiatives by 2022.

In 2022, these initiatives cover **23.1%** of global GHG emissions.

**70%**

of G20 jurisdictions have at least one national or subnational carbon pricing initiative in place



### Key footnotes

- ▶ Due to overlapping coverage between carbon pricing initiatives, the sum of components can be larger than the components (carbon prices, ETS).

### Key sources

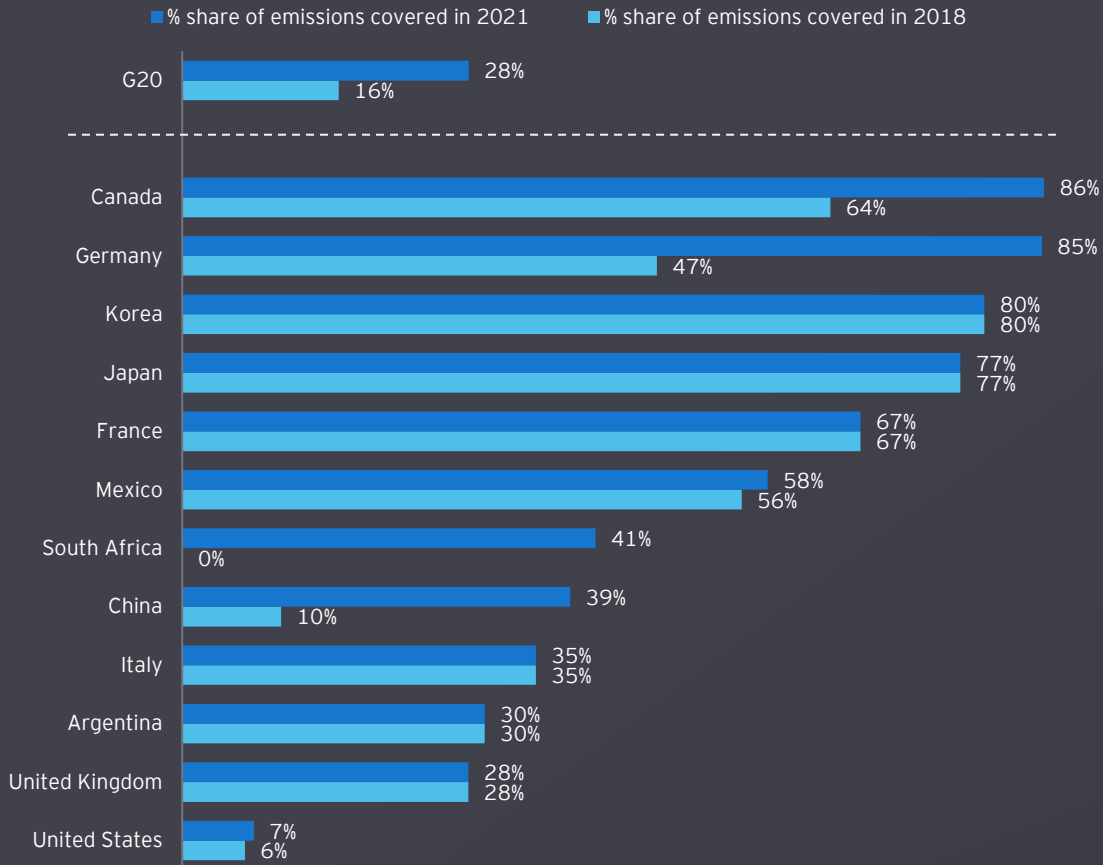
- ▶ Organisation for Economic Co-operation and Development (OECD)
- ▶ World Bank Carbon Pricing Dashboard

See technical appendix for full list of footnotes and sources.

# Share of carbon emissions priced

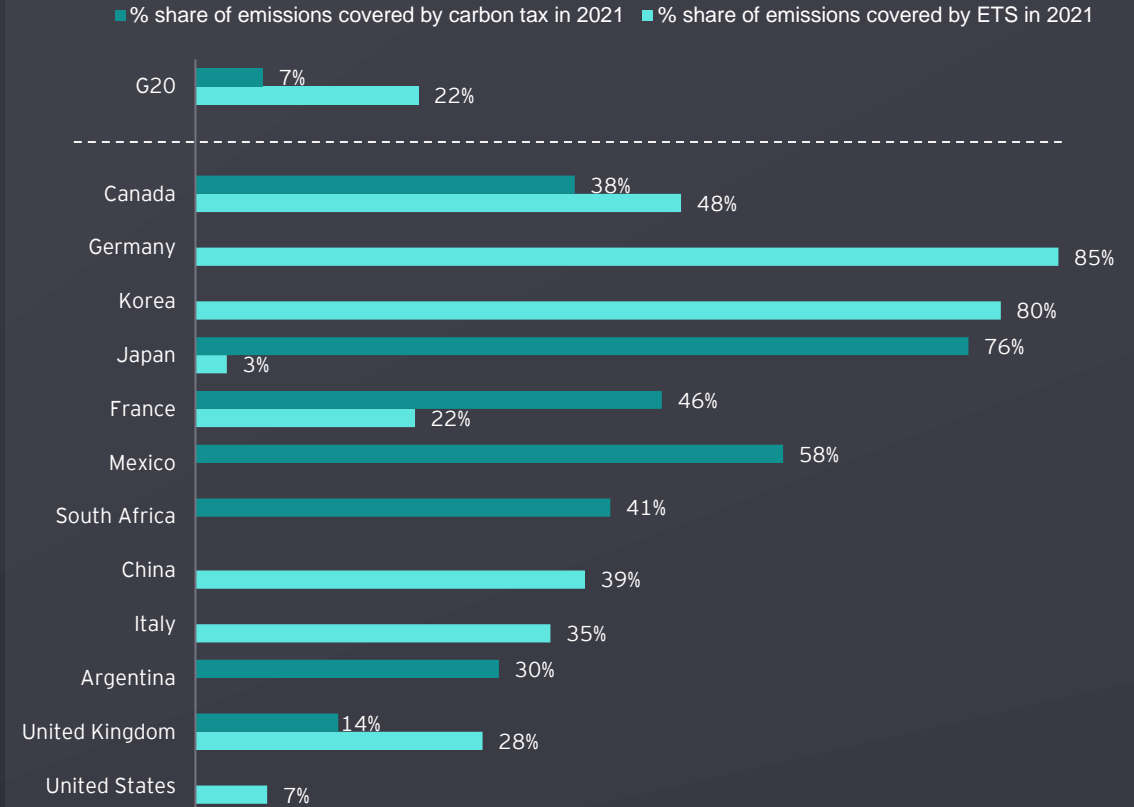
Share of emissions covered, 2018 and 2021

**13%** percentage point increase in share of emissions covered by a carbon pricing initiative in the G20 from 2018 to 2021



Share of emissions covered by type of carbon pricing, 2021

**7%** of all emissions in the G20 are covered by carbon taxes **22%** of all emissions in the G20 are covered by ETS



Note: Due to overlapping coverage between carbon pricing initiatives, the sum of components can be larger than the components (carbon prices, ETS).

# Green tax expenditures in the G20

## What are tax expenditures?

Tax expenditures (TEs) are tax benefits that lower government revenue (revenue forgone) by decreasing the tax liability of the beneficiary through tax incentives.

## What is their role in climate action?

The government can incentivize the use of alternative fuels and investment in clean technology and can promote energy efficiency and renewables through tax incentives.



## Italy

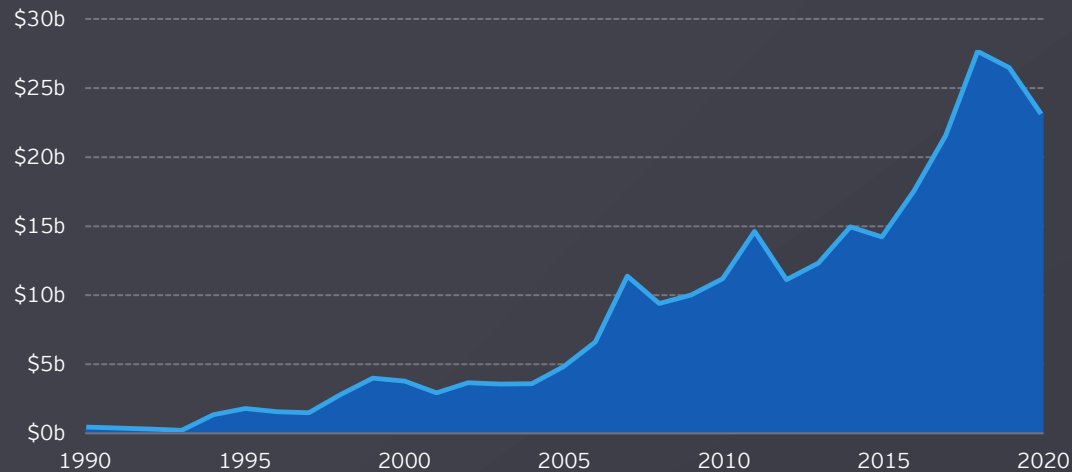
Deduction from personal income tax 20% of the replacement costs of refrigerators, freezers and their combinations with similar appliances of energy class not lower than A+



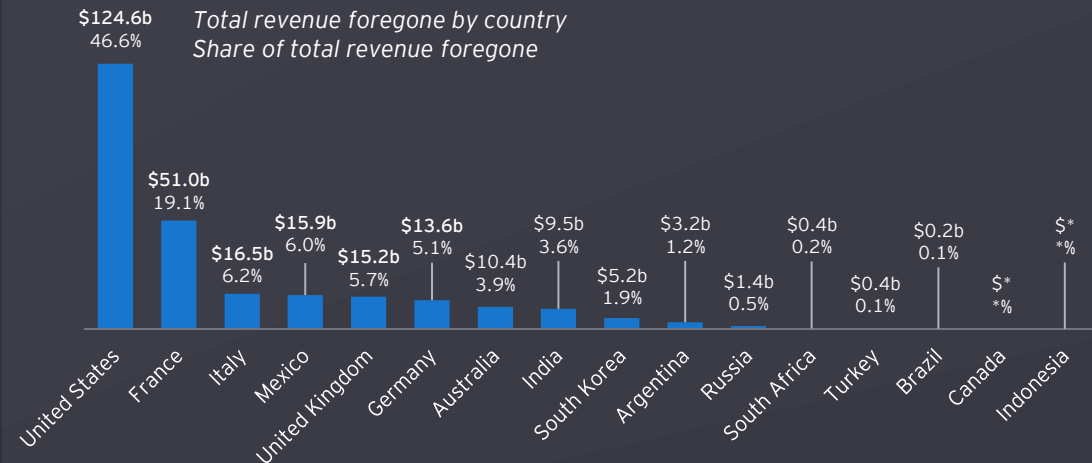
## South Korea

Reduction of customs duties on renewable energy production container material

**\$267b** in total revenue was forgone by G20 jurisdictions due to carbon tax incentives between 1990 and 2020.



**65.6%** of the total revenue foregone by G20 jurisdictions between 1990 and 2020 was in the United States and France.

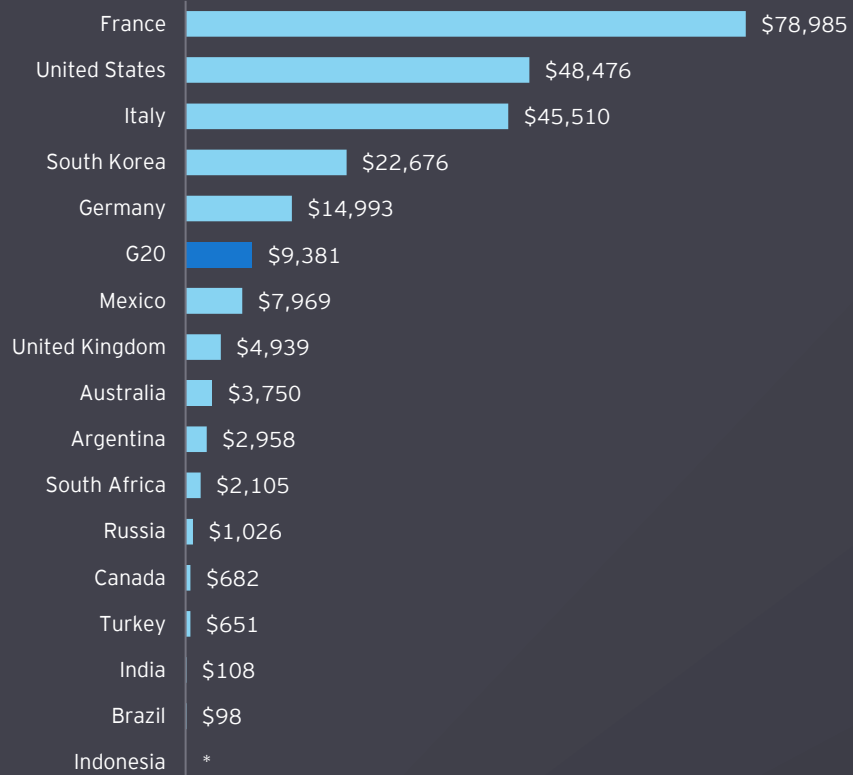


Note: "\$\*" denotes that the revenue foregone is less than \$0.05 billion. "\*%" denotes that the revenue foregone share is less than 0.05%.

# Green tax expenditures in the G20

Revenue foregone (\$) per capita, 2020

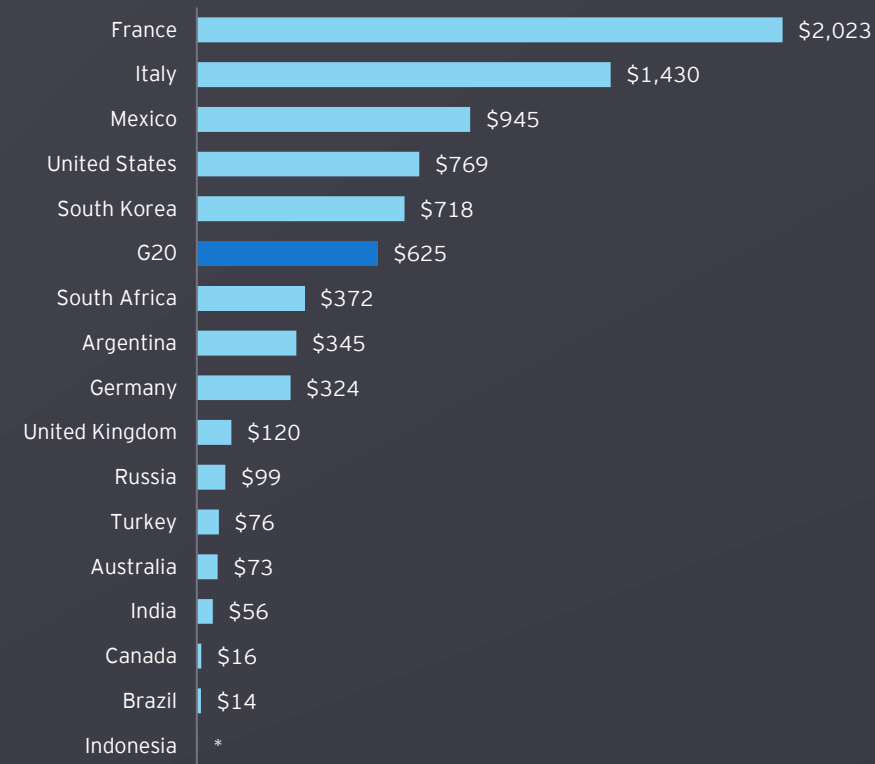
**\$9,381** of revenue per 1,000 people was forgone by the G20 jurisdictions due to green tax expenditures in 2020.



Note: 2019 revenue forgone data is used as proxy for 2020 revenue forgone data for France and South Africa. "\*" denotes that the cumulative revenue forgone is less than \$1 per 1,000 people.

Revenue foregone (\$) per \$ million of GDP, 2020

**\$625** of revenue per \$ million of GDP was forgone by the G20 jurisdictions due to green tax expenditures in 2020.



Note: 2019 revenue forgone data is used as proxy for 2020 revenue forgone data for France and South Africa. "\*" denotes that the cumulative revenue forgone is less than \$1 per \$ million of GDP.

**Key footnotes**

- ▶ G20 aggregate numbers are those of its 16 member countries and exclude Japan, China, Saudi Arabia, and the rest of European Union's policies and population due to data limitations.
- ▶ GTED, which is the most comprehensive dataset of tax expenditures comparable across countries, relies solely on official and publicly available data on tax expenditures. This underestimates the actual amount of green tax expenditures.

**Key sources**

- ▶ Global Tax Expenditures Database (GTED)
- See technical appendix for full list of footnotes and sources.



## Green recovery – energy policies enacted since COVID-19

Through energy policies supporting the production and consumption of different energy types, governments have had the opportunity to accelerate the transition to a low-emission economy by focusing on green recovery as they inject trillions of dollars into the global economy as a result of the COVID-19 crisis. Data includes fiscal, monetary and other policies.

### Examples of energy policies



#### Australia

Investment of \$797 million for home energy efficiency and power bill assistance



#### Canada

New Brunswick Electric Vehicle Incentive Program

**836** new or amended policies committed to supporting different energy sources have been introduced since the beginning of the COVID-19 pandemic in early 2020.

### Clean unconditional

**303** policies support production or consumption of energy that is both low carbon and has negligible impacts on the environment.

### Clean conditional

**280** policies support the transition away from fossil fuels, but unspecific about the implementation of appropriate environmental safeguards. Some examples include large-hydropower and electric vehicles using multiple energy types. These policies can still have a significant impact on the environment if there is a lack of appropriate safeguards.

### Fossil conditional

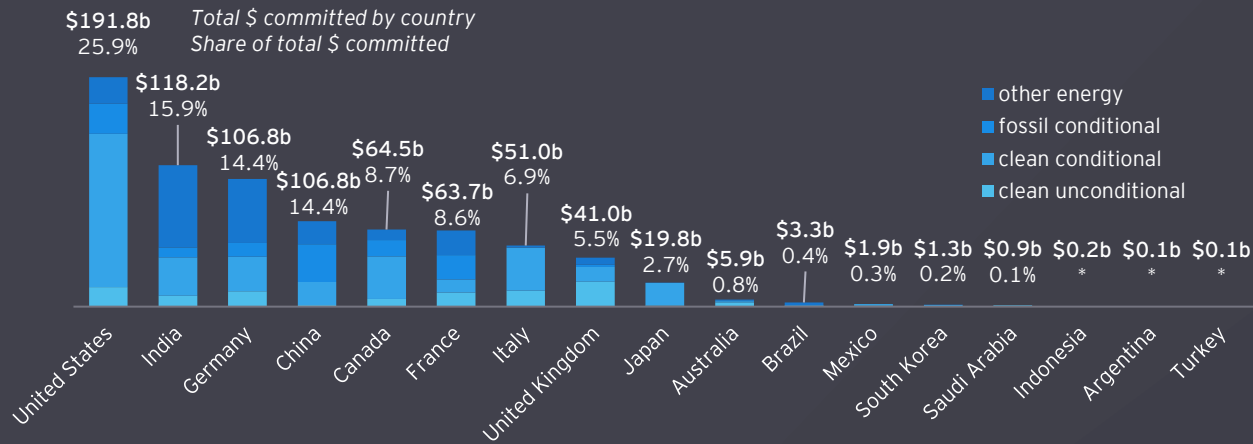
**99** policies support production or consumption of fossil fuels with climate targets or additional pollution reduction requirements.

### Other energy

**154** policies support nuclear energy, biofuels, biomass and biogas, incineration, and multiple energy types, e.g., intertwined fossil fuels and clean energy.

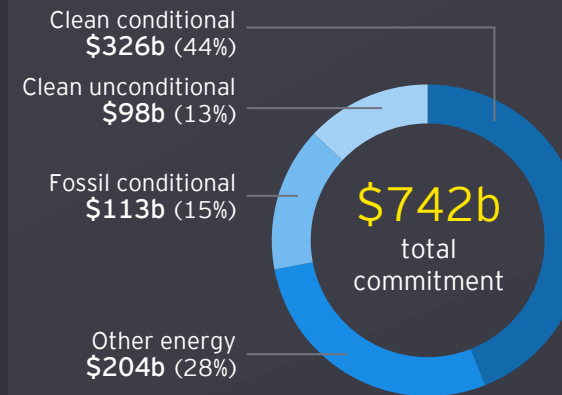
# Green recovery in the G20 – post-pandemic green energy policy

**\$742b** was committed by the G20 jurisdictions in 2020 and 2021 to support different energy types through new or amended policies.



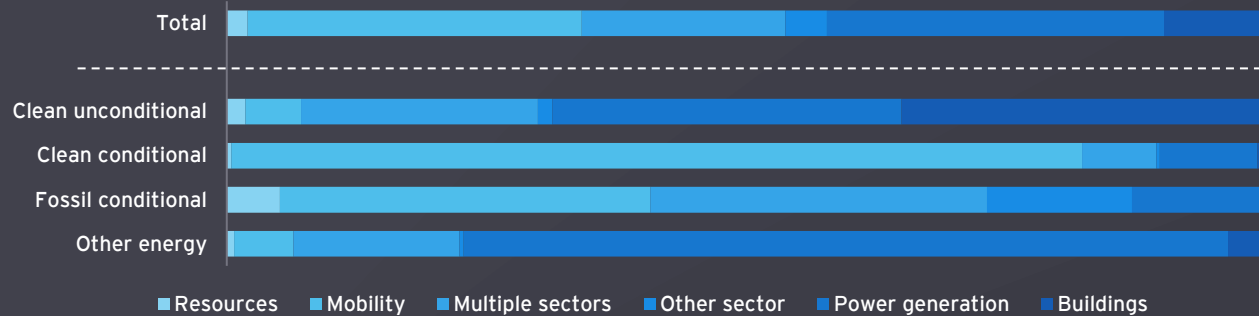
**56%**

of total commitment by the G20 jurisdictions was in clean conditional and unconditional policies.



Figures are rounded.

**74%** of the total funds committed by the G20 jurisdictions affect energy production or consumption in the mobility and power generation sector.



## Key footnotes

- ▶ G20 aggregate numbers are those of its 19 member countries and exclude the rest of European Union's policies and population.
- ▶ The Energy Policy Tracker tracks new policies or amendments of existing policies from 1 January 2020 until 31 December 2021.

## Key sources

- ▶ Energy Policy Tracker

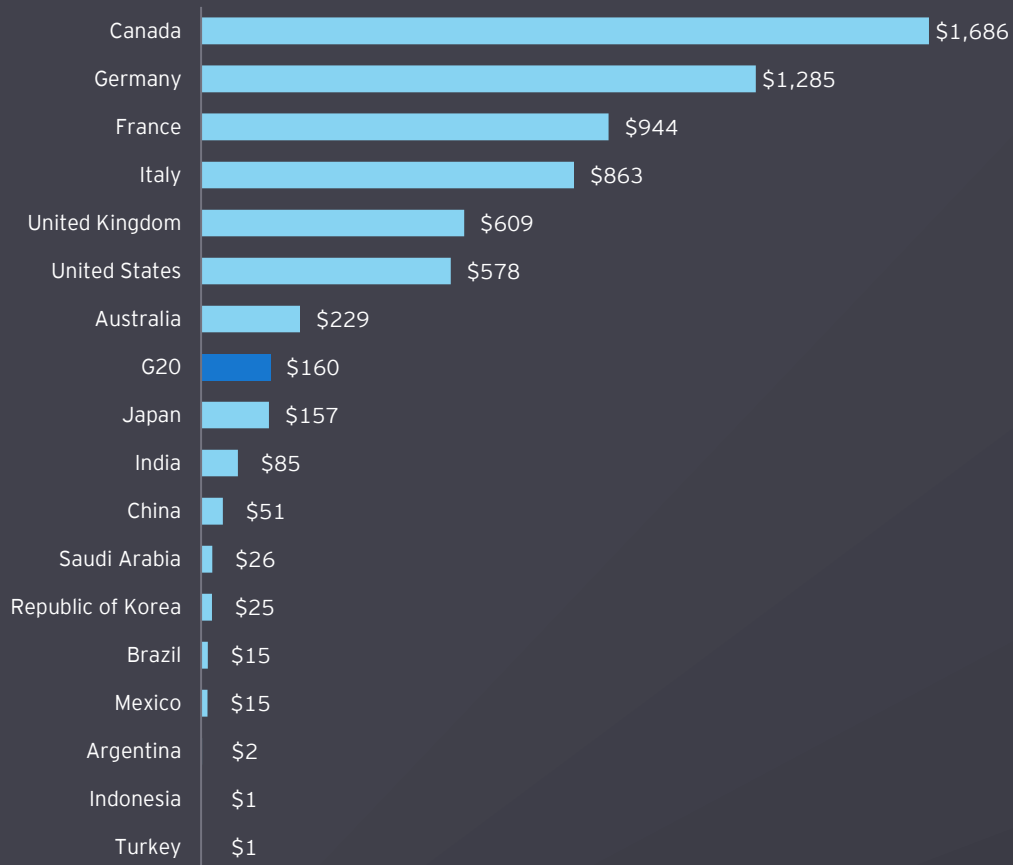
See technical appendix for full list of footnotes and sources.

# Green recovery in the G20 – post-pandemic green energy policy

Cumulative \$ committed per capita, 2020-2021

**\$160**

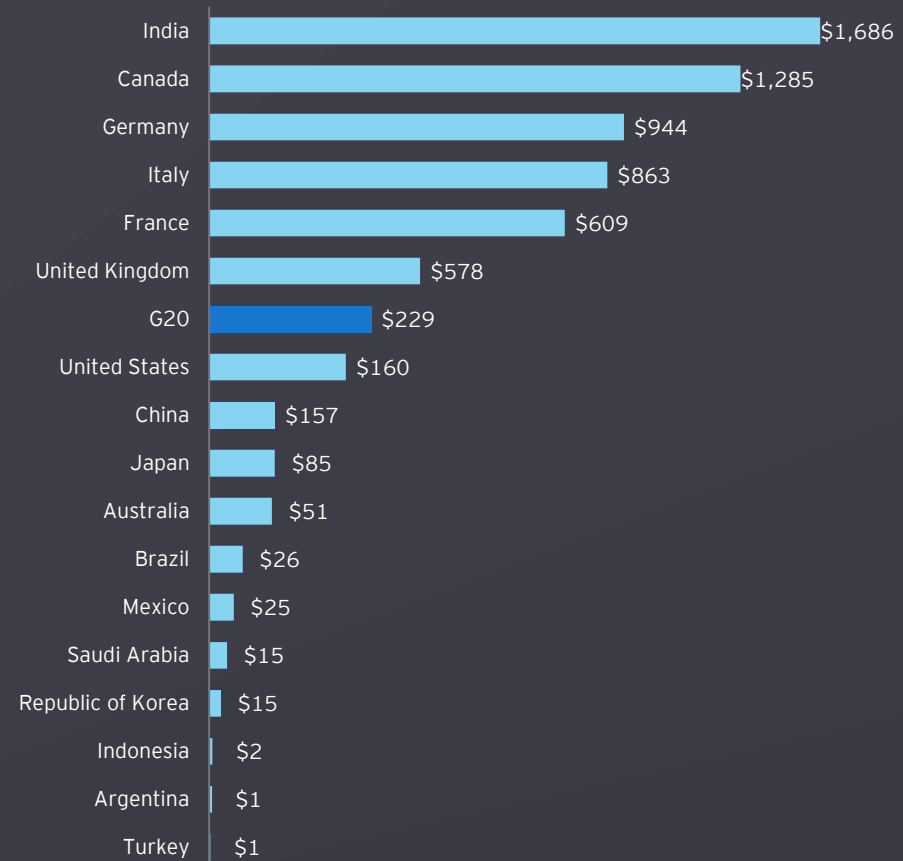
per capita was commitment by the G20 jurisdictions to support different energy types through new or amended policies



Cumulative \$ committed per \$million GDP, 2020-2021

**\$229**

per \$ million of GDP was commitment by the G20 jurisdictions to support different energy types through new or amended policies





# Private sector

Analyzing change in emissions of  
S&P500 companies

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# Emissions by S&P 500 companies

## What are S&P 500 companies?

The S&P 500 is a stock index that tracks the share prices of 500 large companies.

## Why are emission trends in the S&P 500 companies important?

As large companies traded, S&P 500 companies are indicative of decarbonization trends in their respective industries.

## What are scope 1 emissions?

Scope 1 is direct GHG emissions. Direct GHG emissions occur from sources that are owned or controlled by the company. This includes, for example, emissions from combustion in owned or controlled boilers, furnaces, and vehicles.

## What are scope 2 emissions?

Scope 2 accounts for GHG emissions from the generation of purchased electricity consumed by the company. Scope 2 emissions physically occur at the facility where electricity is generated.

## What are scope 3 emissions?

Scope 3 emissions are a consequence of the activities of the company but occur from sources not owned or controlled by the company. An example of scope 3 emissions is carbon embedded in purchased goods and services.

## Companies included in analysis

The analysis was conducted on a subset of 180 companies of the S&P 500. Specifically, the analysis includes all S&P 500 companies (as of 2022) that consistently reported their Scope 1, 2, and 3 emissions for each year from FY 2017 through FY 2020.

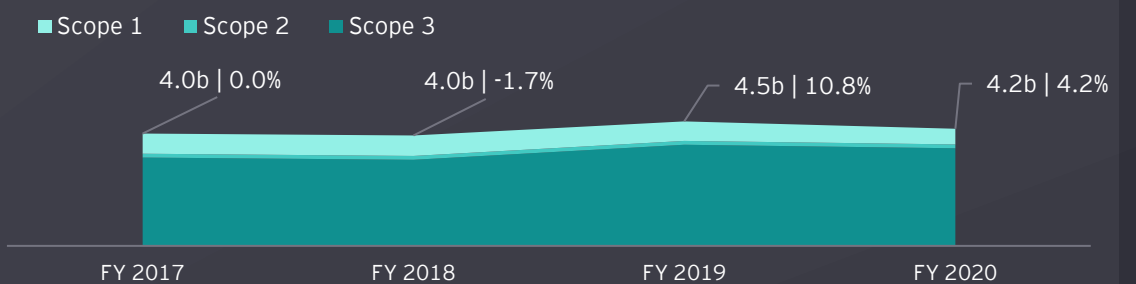
**4.2%**   
INCREASE

in total emissions (Scope 1, 2 and 3) by S&P 500 companies over the 2017 to 2020 period.

**19.6%**   
DECREASE

in scope 1 and 2 emissions by S&P 500 companies over the 2017 to 2020 period.

Tonnes of CO<sub>2</sub>e emissions | % change in total emissions (Scope 1, 2, and 3) relative to FY 2017

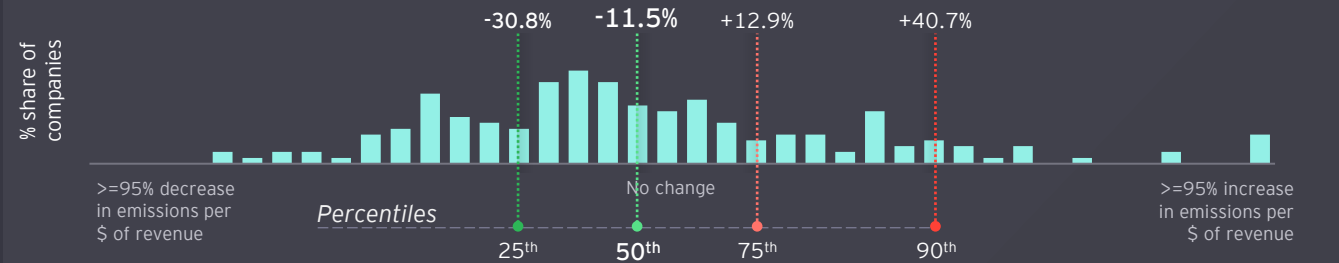


Industry	Count	FY17-FY20 % change in emissions	
		Scope 1+2	Scope 1+2+3
Manufacturing	65	-4.4%	-4.1%
Finance and Insurance	32	-22.3%	-24.0%
Utilities	13	-25.0%	-7.2%
Real Estate and Rental and Leasing	10	3.8%	704.5%
Retail Trade	10	-18.5%	324.9%
Other	50	-22.4%	35.3%
<b>Total</b>	<b>180</b>	<b>-19.6%</b>	<b>4.2%</b>

Note: This analysis uses the North American Industry Classification System (NAICS). Large increases in scope 3 emissions reflect, for example, expansions in categories of scope 3 emissions reported.

# Emissions by S&P 500 companies

Distribution of companies by % change in Scope 1 emissions  
From 2017 to 2020



Median company performance

**11.5%** ↓

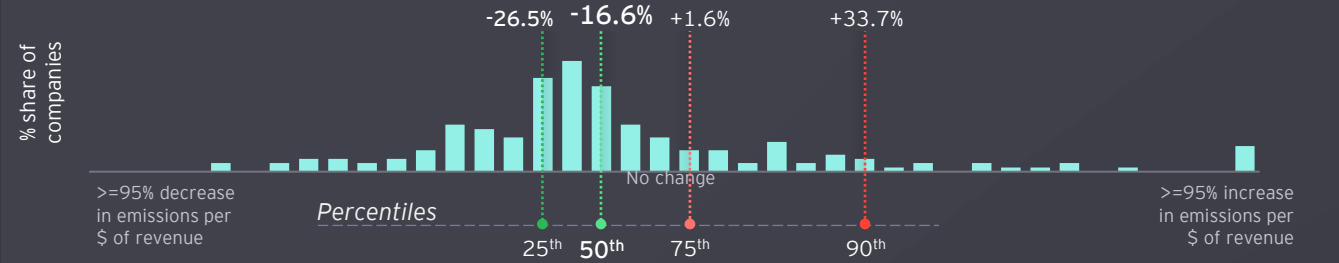
**DECREASE**  
in scope 1 emissions by the median S&P 500 company over the 2017 to 2020 period.

Emission reduction target

**66%**

of S&P 500 companies have committed to an emissions reduction target as of fiscal year 2020

Distribution of companies by % change in Scope 1 and 2 emissions  
From 2017 to 2020

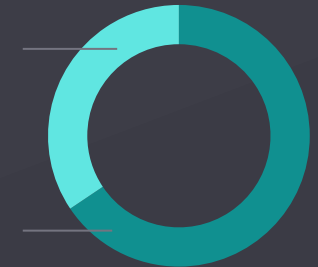


**16.6%** ↓

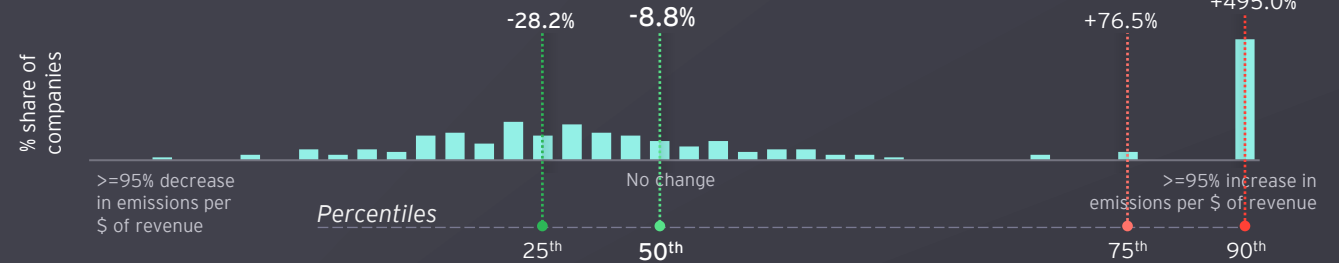
**DECREASE**  
in scope 1 and 2 emissions by the median S&P 500 company over the 2017 to 2020 period.

**34%**  
have not set a emissions reduction target

**66%**  
have committed to a emissions reduction target



Distribution of companies by % change in Scope 1, 2, and 3 emissions  
From 2017 to 2020



**8.8%** ↓

**DECREASE**  
in total emissions (scope 1, 2 and 3) by the median S&P 500 company over the 2017 to 2020 period.

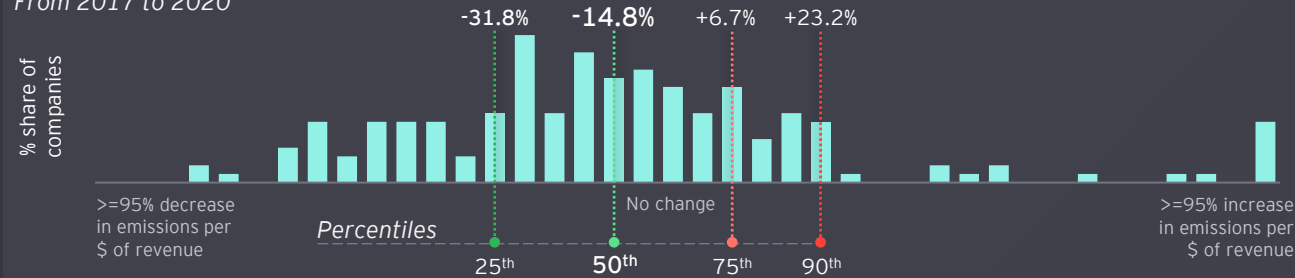
*Large increases in scope 3 emissions reflect, for example, expansions in categories of scope 3 emissions reported.*

Note: Analysis for the above figure includes all companies in the S&P 500. This differs from all other data presented in the private sector section (which only includes S&P 500 companies (as of 2022) that consistently reported their Scope 1, 2, and 3 emissions for each year from FY 2017 through FY 2020).

# Emissions efficiency performance of S&P 500 companies



Distribution of companies by % change in Scope 1 emissions per \$ of revenue  
From 2017 to 2020



Median company performance

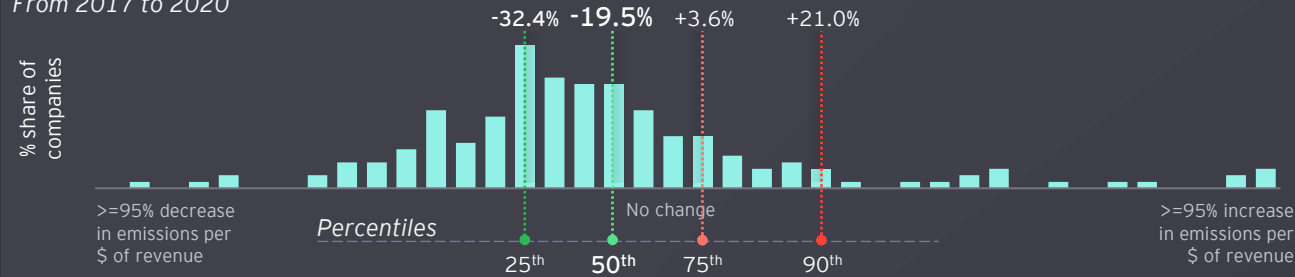
**14.8%** ↓

**DECREASE**  
in scope 1 emissions per \$ of revenue by the median S&P 500 company over the 2017 to 2020 period.

What is emissions efficiency performance?

Emissions efficiency is defined as emissions per \$ of revenue

Distribution of companies by % change in Scope 1 and 2 emissions per \$ of revenue  
From 2017 to 2020



**19.5%** ↓

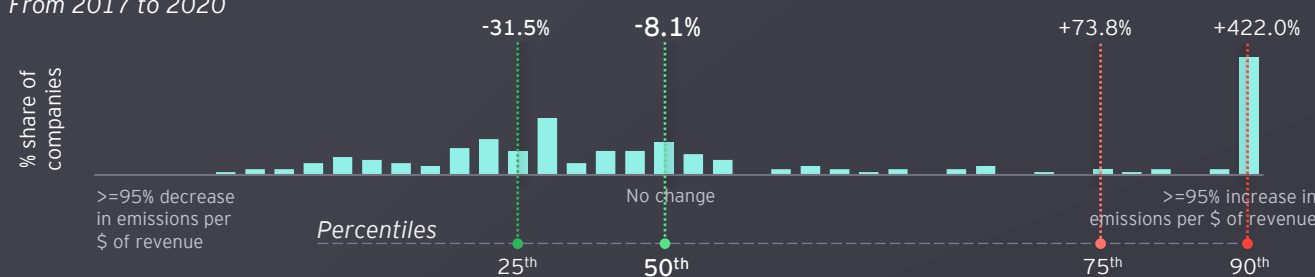
**DECREASE**  
in scope 1 and 2 emission per \$ of revenue by the median S&P 500 company over the 2017 to 2020 period.

### Key footnotes

Although fiscal year is defined differently for each company, data reported by year is based on each company's fiscal year ended between the start and end of that year. For example, FY 2017 reports each company's fiscal cycle that ended between 1 January 2017 and 31 December 2017.

Data reported for absolute emissions are inclusive of CO2 and CO2 equivalent emissions. CO2 equivalent gases include methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorinated compound (PFC), sulfur hexafluoride (SF6), nitrogen trifluoride (NF3).

Distribution of companies by % change in Scope 1, 2, and 3 emissions per \$ of revenue  
From 2017 to 2020



**8.1%** ↓

**DECREASE**  
in total emissions per \$ of revenue (scope 1, 2 and 3) by the median S&P 500 company over the 2017 to 2020 period.

### Key sources

Refinitiv

See technical appendix for full list of footnotes and sources.

Large increases in scope 3 emissions reflect, for example, expansions in categories of scope 3 emissions reported.





# Snapshot of corporate views

Illustrating the business perspective on climate and carbon emissions across industries and geographies

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# Snapshot of corporate views

Key business trends spanning various industries and jurisdictions

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With each passing year, the risks of not acting on climate change become more evident. Government and businesses both have roles to play, and significant change can only occur when they work together toward common goals.

**Cathy Koch**

EY Global Sustainability  
Tax Co-Leader

## Businesses are taking action.

They are building on past success and finding new, often innovative ways to mitigate climate change. The inaugural EY Climate Cash and Tax Barometer offered an overview of the broad actions of major and diverse companies. This edition shares an update on the new actions they have taken or set in motion in the last year, focusing on six megatrends we have observed. Each page spotlights the goals and progress of the following contributors.

### ConocoPhillips

An independent exploration and production company with operations and activities in 15 countries

### E.ON

An international energy company, which focuses on energy networks and sustainable customer solutions across Europe

### FedEx

A collection of operating companies providing a broad portfolio of transportation, e-commerce and business services

### Procter & Gamble

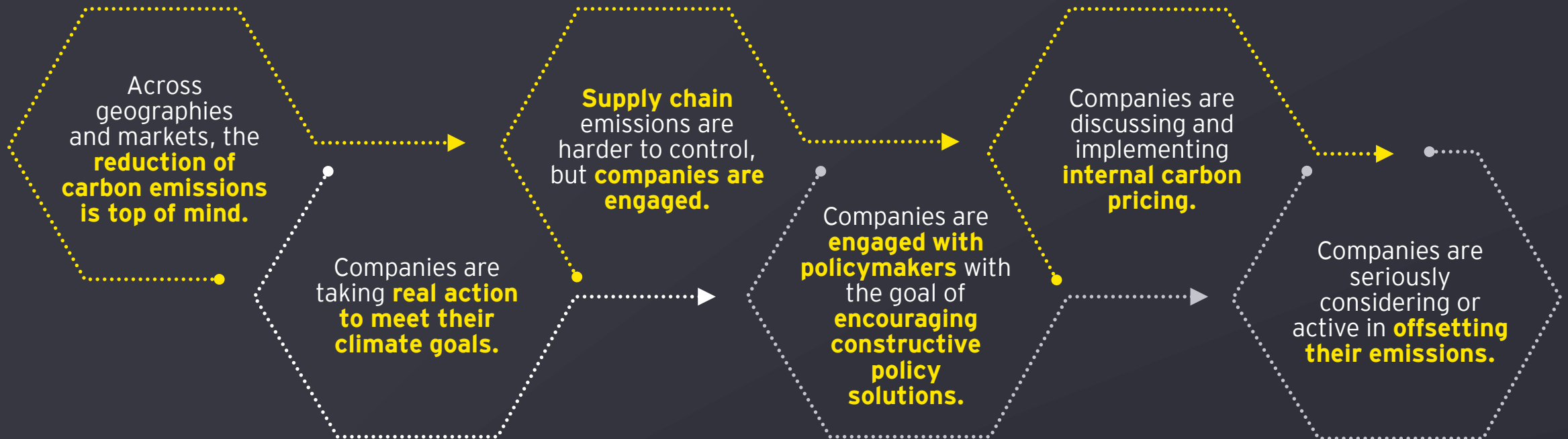
A multinational corporation focused on providing branded products of superior quality and value to improve the lives of the world's consumers

### The Coca-Cola Company

A total beverage company with trademarked products sold in more than 200 countries and territories

# Snapshot of corporate views – megatrends

Key business trends spanning various industries and jurisdictions



# Across geographies and markets, the reduction of carbon emissions is top of mind

## 2021-2022 actions

- ▶ **ConocoPhillips** is increasing their previously announced operational GHG emissions intensity reduction target from 35-45% to 40-50% by 2030.
- ▶ **Coca-Cola** undertook a far-reaching new study across their company and agricultural supply chain in 2021, looking at three outcome scenarios to identify a refined set of climate-related risks and opportunities—including both physical and transition impacts—in a range of possible futures.
- ▶ **P&G** created a Climate Transition Action Plan which outlines a comprehensive approach to accelerating climate action and the key challenges ahead.
- ▶ **FedEx** is investing more than \$2 billion over the next several years to support bold action in three key areas: vehicle electrification, sustainable energy and carbon sequestration.
- ▶ **E.ON** received Science Based Targets initiative (SBTi) validation for emission reduction targets in May 2022 to confirm that they're consistent with keeping global warming to 1.5° C above pre-industrial levels.

## ConocoPhillips

### Goal

To become net-zero by 2050

“

ConocoPhillips' triple mandate is to responsibly meet transition energy demand, deliver competitive returns, and achieve our net-zero emissions ambition. We aim to deliver long-term value to our stakeholders by competing to meet the world's demand for oil and gas with a focus on ESG performance, and through strategic investment in transition-related opportunities.

### Lloyd Visser

Vice President Sustainable Development

# Companies are taking real action to meet their climate goals

## 2021-2022 actions

- ▶ **Coca-Cola** released a Renewable Energy Implementation Guidebook, a step-by-step guide for company owned facilities and bottling partners to build knowledge and increase facilities' generation and procurement of renewable energy.
- ▶ **FedEx** is generating on- and off-site solar energy at a total of 26 global locations across their operating companies. Additionally, through a phased approach, FedEx is converting their entire parcel pickup and delivery fleet to zero-emission electric vehicles.
- ▶ **ConocoPhillips** established a multi-disciplinary Low Carbon Technologies focused on growing opportunities in carbon capture and storage (CCS) and hydrogen, to leverage their expertise and adjacencies.
- ▶ Using 98% renewable electricity helped **P&G** reduce Scope 1 & 2 emissions by 56%, exceeding their Ambition 2030 goal. They are on their way to utilizing 100% purchased renewable electricity.
- ▶ **E.ON** plans to invest a double-digit million Euro amount in ecological corridor management. Moreover, E.ON drives cluster development by securing green hydrogen sourcing and developing hydrogen infrastructure.

## The Coca Cola Company

### Goal

A science-based target to reduce absolute emissions by 25% by 2030

“

Our approach to addressing climate change has accelerated in recent years in keeping with the scale and urgency of the issue. Even as we achieved our 2020 “drink in your hand” goal to reduce our relative carbon emissions by 25% against a 2010 baseline, we increased our climate ambition. Our World Without Waste initiative works in tandem with this plan, as lightweighting our packaging, using more recycled material and reusable packaging and recycling more all contribute to carbon footprint reduction.

### Michael Goltzman

Vice President, Global Policy & Sustainability

# Supply chain emissions are harder to control, but companies are engaged

## 2021-2022 actions

- ▶ **P&G** has specific strategies to reduce supply chain emissions that include, increasing material mass efficiency, using bio-based materials, using recycled carbon, developing new materials and technologies that reduce GHG emissions and partnering with suppliers to explore new processes.
- ▶ **ConocoPhillips** holds an annual Supplier Sustainability Forum to discuss strategic sustainability objectives and collaborate to manage and mitigate the environmental and social impacts from activities and operations throughout the supply chain.
- ▶ **E.ON** assesses their suppliers' ESG performance prior to doing business with them. They also record the emissions in connection with purchased goods and services and design decarbonization roadmaps for high-spending categories.
- ▶ **Coca-Cola** encourages suppliers—representing approximately 80% of spend across most major procurement categories—to respond to the CDP Supply Chain Climate Change questionnaire and is recognized by CDP as a 2021 Supplier Engagement Leader. Through those efforts they saw a threefold increase in the number of supplier responses in 2021 compared to 2020.
- ▶ **FedEx's** Sourcing Sustainability Impact Team shares best practices and benchmarks findings to determine where they can improve.

## Procter & Gamble

### Goal

To reach net-zero GHG emissions across their supply chain and operations by 2040

“

As we seek to advance progress towards net zero, driving absolute reductions in our GHG emissions is our primary focus. We have accelerated our purchase of renewable electricity to 98% and reduced our operational emissions by over 50%. Collaboration will be key to enabling further progress and we continue to engage with our suppliers and external partners to refine our roadmaps towards net zero.

**Jack Mcaneny**

Vice President Global Sustainability

# Companies are engaged with policymakers with the goal of encouraging constructive policy solutions

## 2021-2022 actions

- ▶ **E.ON** strongly positions itself for Paris-aligned engagement with policymakers. This involves being part of the CEO alliance consisting of 13 European companies to support the Green Deal and foster cooperation between industry, politics and society; additionally, their board members are valued consultants for high-level policymakers.
- ▶ **Coca-Cola** uses their influence to drive meaningful policy changes in partnership with peer companies, civil society and all levels of government.
- ▶ **FedEx** is collaborating with power utilities, state and local governments, and regulatory agencies on vehicle charging infrastructure and advocating for incentives that accelerate sustainable aviation fuel production and make low-carbon fuel more available and affordable.
- ▶ **P&G** states that harmonized, holistic, and science-based climate policy can provide business the predictability and consistency needed to help inform investment choices and help accelerate global progress on emissions reductions.
- ▶ **ConocoPhillips** actively advocates for an economy-wide US carbon price that would directly reduce consumer energy demand and thus end-use (Scope 3) emissions.

## E.ON

### Goal

To be climate-neutral by 2040 and for its supply chain to be so by 2050

“

We are proud to have our climate targets validated by the SBTi this year and attached these to the compensation of our management.

**David Radermacher**

Vice President Sustainability

# Companies are discussing and implementing internal carbon pricing

## 2021-2022 actions

- ▶ **P&G** has implemented an internal carbon price. They are also seeking to advance projects to protect, improve, and restore key ecosystems and by doing so will deliver a carbon benefit that is equal to their cumulative Scope 1 and 2 emissions between 2020-2030.
- ▶ **Coca-Cola** recently implemented a new data system for collecting sustainability metrics and updated their GHG emissions accounting methodology aligned with the GHG Protocol and undertook an assessment to evaluate and expand the emissions sources included within their reporting boundary to align with requirements of the SBTi.
- ▶ **ConocoPhillips** began including non-operated net equity investments in their net-zero by 2050 goal. They are also refocusing their portfolio on assets with the low cost of supply and low emissions intensity.
- ▶ **E.ON's** investment program is aligned with the EU taxonomy; 80% of their core business investments fall within the scope of the taxonomy. More than half of the funds for these investments will be raised through the issuance of green bonds.

## FedEx

### Goal

To achieve carbon-neutral operations globally by 2040

“

As we work toward carbon neutral operations, FedEx takes two paths. For technology that's ready to scale, we set interim goals that we believe are achievable. When low-carbon technology is nascent or absent, we look to make investments designed to promote new thinking and collaboration across stakeholders to spur innovation.

### Mitch Jackson

Staff Vice President Environmental Affairs & Chief Sustainability Officer

# Companies are seriously considering or active in offsetting their emissions

## 2021-2022 actions

- ▶ Starting in 2021, **E.ON** is elaborating a holistic Carbon Offsetting Strategy to ensure high quality and integrity when buying carbon offsetting certificates. While E.ON clearly prioritizes emission avoidance and reduction over offsetting, emissions that are currently unavoidable are partially offset. E.ON's flagship offsetting program is a partnership with the Lowering Emissions by Accelerating Forest finance (LEAF) Coalition. LEAF offsets help protect tropical forests and manage them sustainably.
- ▶ In 2021, **FedEx** pledged \$100 million to help establish the Yale Center for Natural Carbon Capture to encourage interdisciplinary research to create natural solutions for sequestering CO2 from the atmosphere, focusing on three major categories: biological, geological and industrial.
- ▶ **ConocoPhillips** will invest in voluntary offsets beginning in 2022. They plan to develop and support their own offset projects and make diversified investments in offset projects or funds, including nature-based options.
- ▶ For residual emissions that cannot be eliminated, **P&G** will use natural or technical solutions that remove and store carbon.



An aerial photograph of a natural landscape. The top half of the image shows a dense forest with trees in various shades of green, yellow, and brown, suggesting an autumn or winter setting. A winding river or stream flows through the forest from the top left towards the bottom left. On the right side, a large, dark blue lake or reservoir is visible, with a small peninsula or island extending into it. The overall scene is serene and natural.

# Technical appendix

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## Carbon emissions in the G20 jurisdictions - technical note

### About the source(s)

Organisation for Economic Co-operation and Development (OECD)

*Carbon dioxide emissions embodied in international trade*

- ▶ The Organisation for Economic Co-operation and Development (OECD) is an international organization that works to build better policies for better lives. Its member countries work with other countries, organizations and stakeholders worldwide to **address the pressing policy challenges of our time.**
- ▶ It's report, "**Carbon dioxide emissions embodied in international trade,**" presents a set of indicators to reveal patterns of CO2 demand compared to CO2 production (via resident industry or household emissions). The aim of this report is to **provide policy makers with new insights into the environmental impacts of global production systems.**

### Notes

- ▶ Estimates for carbon emissions are in tons of CO2.
- ▶ The carbon emissions data shown reflects production-based estimates of CO2 emissions for each jurisdiction. Notably there are other methods of emissions accounting, for instance, demand-based emissions.
- ▶ Estimates for the European Union (EU) include all EU members. This includes France, Germany, and Italy, which are also separately members of the G20. Therefore, estimates for emissions, and share of emissions will not sum to total.
- ▶ Figures are rounded.

## Carbon pricing in G20 - technical note

### About the source(s)

Organisation for Economic Co-operation and Development (OECD)

*Carbon Pricing in Times of COVID-19: What Has Changed in G20 Economies?*

- ▶ The Organisation for Economic Co-operation and Development (OECD) is an international organisation that works to build better policies for better lives. Its member countries work with other countries, organisations and stakeholders worldwide to **address the pressing policy challenges of our time.**
- ▶ It's report, "**Carbon Pricing in Times of COVID-19: What Has Changed in G20 Economies,**" takes stock of how carbon prices have evolved across G20 economies between **2018 and 2021.** It estimates carbon prices resulting from carbon taxes, emissions trading systems, and fuel excise taxes.

### Notes

- ▶ Due to overlapping coverage between carbon pricing initiatives, the sum of components can be larger than the components (carbon prices, ETS).

## Green tax expenditures in the G20 - technical note

### About the source(s)

Global Tax Expenditures Database (GTED)

- ▶ The Global Tax Expenditures Database "provides timely and consistent information on **preferential tax treatments.**"
- ▶ The database contains **22,685 tax expenditures** from **102 countries** over **31 years.**
- ▶ GTED relies **solely on official and publicly available data** on tax expenditures.
- ▶ The database includes data on **forgone revenue, policy objectives, beneficiaries,** and other information for each tax expenditure.

### Notes

- ▶ G20 aggregate numbers are those of its 16 member countries and exclude Japan, China, Saudi Arabia, and the rest of European Union's policies and population due to data limitations.
- ▶ GTED, which is the most comprehensive dataset of tax expenditures comparable across countries, relies solely on official and publicly available data on tax expenditures. This underestimates the actual amount of green tax expenditures.
- ▶ The GTED database is frequently updated, and the data is therefore subject to change. Data was accessed 28 July 2022.

### Methodology

- ▶ For the purpose of this analysis, **EY researchers identified tax expenditures that directly related to climate action.** The process used to determine the above was as follows:
  1. GTED classifies the data by the policy objective pursued by the tax expenditure. All tax expenditures with their policy objective categorized as "**mitigate green house emissions,**" "**promote energy efficiency,**" "**promote renewable energy**" and "**support the adaptation to climate change**" were included in the analysis.
  2. Some tax expenditures had the policy objective of "Not stated/unclear." Such tax expenditures were reviewed by **two independent EY analysts** to determine if they should be included in the analysis. Any provisions promoting **energy conservation, energy efficiency, fuel efficiency, clean energy, renewable energy, bio fuels, alternative fuels, energy conservation bonds, environmental investment** or other policies targeting **GHG reduction** were included.

## Green recovery in the G20 – technical note

### About the source(s)

Energy Policy Tracker  
[energypolicytracker.org](http://energypolicytracker.org)

- ▶ The Energy Policy Tracker database provides the latest information about COVID-19 **government policy response** from a climate and energy perspective, specifically policies supporting **production and consumption of different energy types**.
- ▶ The tracker is contributed to by six core members: (1) International Institute for Sustainable Development (IISD), (2) Institute for Global Environmental Strategies (IGES), (3) Oil Change International (OCI), (4) Overseas Development Institute (ODI), (5) Stockholm Environmental Institute (SEI) and (6) Columbia University.
- ▶ The tracker currently covers more than **30 major economies** and the multilateral development banks.
- ▶ It relies on **publicly available information** on public spending commitments.
- ▶ The **OECD Green Recovery Database** mentions the Energy Policy Tracker as a prominent tracking tool.

### Methodology

- ▶ For the purpose of this analysis, **EY researchers identified energy policies leading to public money outflow that directly related to climate action**. The process used to determine the above was as follows:
  1. All energy policy categories were included except those labeled as **fossil unconditional** (i.e., policies that support production and consumption of fossil fuels without any climate targets or additional pollution reduction requirements).
  2. Policies leading to **public money inflow** were excluded.

### Notes

- ▶ G20 aggregate numbers are those of its 19 member countries and exclude the rest of European Union's policies and population.
- ▶ The data only includes policies that are approved by national, subnational or municipal governments; central banks; majority state-owned public finance institutions; majority state-owned enterprises (SOEs); or other government-related bodies. Policy proposals are not included.
- ▶ The research behind the data does not estimate any values committed or disbursed. The only values are drawn from publicly available sources.
- ▶ The Energy Policy Tracker is frequently updated, and the data is therefore subject to change. Data was accessed 26 July 2022.
- ▶ Figures may not sum due to rounding.

## Analyzing change in emissions of S&P500 companies - technical note

### About the source(s)

Refinitiv  
[www.refinitiv.com](http://www.refinitiv.com)

- ▶ Refinitiv, an LSEG (London Stock Exchange Group) business, is one of the world's largest providers of financial markets data and infrastructure.
- ▶ Refinitiv Emissions Data: The emissions data are collected by Refinitiv based on publicly available sources such as company websites, annual reports, and corporate social responsibility reports or contributed by firms.

### Notes

- ▶ The Refinitiv database is frequently updated, and the data is therefore subject to change. Data was accessed September 6, 2022.
- ▶ Emissions and emissions efficiency statistics included in this report are only inclusive of the S&P 500 companies (as of 2022) that consistently reported their Scope 1, 2, and 3 emissions for each year from FY 2017 through FY 2020.
- ▶ Although fiscal year is defined differently for each company, data reported by year is based on each company's fiscal year ended between the start and end of that year. For example, FY 2017 reports each company's fiscal cycle that ended between January 1, 2017, and December 31, 2017.
- ▶ Data reported for absolute emissions are in billion tonnes of CO<sub>2</sub> and CO<sub>2</sub> equivalents. CO<sub>2</sub> equivalent gases include methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorinated compound (PFC), sulfur hexafluoride (SF<sub>6</sub>), nitrogen trifluoride (NF<sub>3</sub>).

### Additional sources(s)

#### The World Bank

- ▶ With 189 member countries, staff from more than 170 countries, and offices in over 130 locations, the World Bank Group is a unique global partnership: five institutions working for sustainable solutions that reduce poverty and build shared prosperity in developing countries.
- ▶ The World Bank data on GDP and population by country is used consistently throughout the analysis to calculate each of the per \$GDP and per capita results presented.

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