EY Climate Cash and Tax Barometer 2021

Financial trends of governments and business addressing climate change

Building a better working world

Aligning financial flows with low-carbon strategies and action plans is now more critical than ever to meet the goals of the Paris Agreement and deliver on the United Nations' 2030 Agenda for Sustainable Development.

The Organization for Economic Co-operation and Development (OECD) estimates that US$6.9 trillion a year is required up to 2030 to meet climate and development objectives. Reversing deforestation to decarbonize the atmosphere would require US$100 billion a year for a period of 10 years.

Each year, EY's Climate Cash and Tax Barometer will provide a quantitative inventory of public and private financing in favor of the fight against climate change as well as, from one year to the next, the statistical evolution of these financial flows. It is designed to be a monitoring tool on the impact and effectiveness of climate finance. The tool will help us address the question: Are we getting the results we need?

This quantitative approach will be supplemented by the introduction of stories and testimonials from sustainable development managers of multinational companies. They will share their visions, strategy and action plans to catalyze economic transformation, contribute to the transition to a low-carbon economy and commit to the collective effort to reduce the global carbon footprint. These examples will be set up as a library of approaches and best practices and will provide reference models for EY teams and others to be reproduced and scaled with EY clients and other market operators.

With this combined quantitative and qualitative approach, the EY organization is making a sustained investment to support the climate finance ecosystem with a robust gauge of financial commitments, based on objective and verified data. This effort reflects the desire of the EY organization to actively contribute to building a better world by supporting transparent and more effective implementation of programming to address climate change.

This is a new step in commitment to sustainable development by the EY organization, and we would like to warmly thank all of the companies and individuals whose critical contribution collectively led to creation and successful launch of the first edition of the EY Climate Cash and Tax Barometer.

Carmine Di Sibio
EY Global Chair and CEO

Kate Barton
EY Global Vice Chair – Tax

Executive summary

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 inaugural study has identified significant investment 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.

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 towards global climate goals.

Table of contents

Introduction

EY Climate Cash and Tax Barometer 2021

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 as well as in the private sector by major companies via private investments and climate finance. By summarizing trends in these financial flows, the Barometer helps to track progress on the critical goal of mitigating global warming.

Public sector			Private sector	
Carbon pricing	Green tax expenditures	Green recovery	Private investments	Climate finance
Carbon pricing initiatives in the G20 jurisdictions (e.g., carbon taxes and cap-and-trade/emissions trading schemes)	Tax expenditures by the G20 jurisdictions that incentivize households and businesses to reduce emissions	Government efforts to accelerate toward a low-emission economy by focusing on a green recovery from COVID-19	Commitments by prominent energy companies globally to invest in directly reducing emissions	Green bond issuance and sustainable financing issued by global systemically important banks

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 is also supplemented by interviews with select companies that span a variety of geographies and markets to highlight what major companies are doing to facilitate mitigation of and adaptation to climate change. These companies include ConocoPhillips, E.ON, The Coca-Cola Company, Toyota, YNCORIS, Procter & Gamble (P&G), Microsoft and General Electric Company (GE). All content related to these companies has been reviewed and approved by the interviewee.

Barometer summary

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

Funds mobilized by the public sector in major economies (G20) and major companies in private companies

Public sector

Carbon pricing

Carbon pricing initiatives in the G20 jurisdictions (e.g., carbon taxes and cap-and-trade/ emissions trading schemes)

80%
of G20 jurisdictions have already implemented, scheduled or are currently considering a carbon pricing initiative.

36
regional, national or subnational carbon pricing initiatives had been implemented in G20 jurisdictions by 2020.

$38.8 billion
in carbon pricing revenues have been collected by G20 jurisdictions in 2019.

55%
of revenue generated by carbon pricing initiatives in G20 jurisdictions is earmarked for specific environmental or broader development projects.

Green tax expenditures

Tax expenditures by the G20 jurisdictions that incentivize households and businesses to reduce emissions

$222 billion
in revenue has been forgone by G20 jurisdictions due to carbon tax incentives from 1990 to 2020.

40.8%
of these carbon tax expenditures by G20 jurisdictions from 1990 to 2020 have been incurred since 2015.

70.7%
of the total carbon tax expenditures by G20 jurisdictions from 1990 to 2020 were in the US and France.

Green recovery

Government efforts to accelerate towards a low-emission economy by focusing on a green recovery from COVID-19

545
new or amended policies committed to supporting different energy sources have been introduced since the beginning of the COVID-19 pandemic in early 2020.

56%
of total budgetary commitment by G20 jurisdictions promote clean energy sources.

$411 billion
has been committed by G20 countries to support different energy types through new or amended policies.

72%
of the total funds committed by G20 jurisdictions affect energy production or consumption in the mobility and power generation sector.

Private sector

Private investments

Commitments by prominent energy companies globally to invest in directly reducing emissions

$20 billion
will be invested by 2021 to reduce greenhouse gas (GHG) emissions, including investments in renewable energy, emission reduction technology, energy efficiency, environmental protection measures, and carbon capture and storage.

>$100 billion
will be invested by 2030 to reduce GHG emissions.

Climate finance

Green bond issuance and sustainable financing issued by global systemically important banks

$162 billion
green bonds were financed and reported in sustainability reports of the global systemically important banks in 2020.

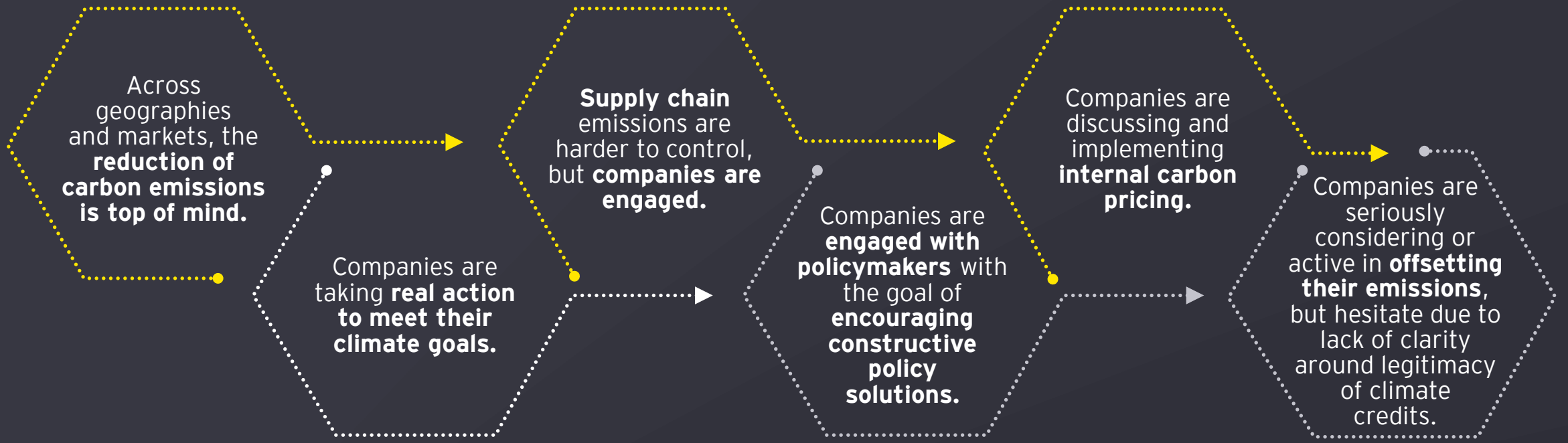
$1.4 trillion
green bonds have been issued and reported by the global systemically important banks since 2013.

$1.9 trillion
total climate financing has been reported by the global systemically important banks since 2013.

>$4.0 trillion
of additional climate financing is set to be issued by global systemically important banks by 2030.

Snapshot of corporate views – megatrends

Key business trends spanning various industries and jurisdictions



Public sector

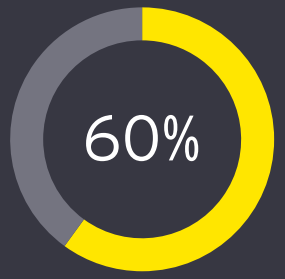
Examining funds mobilized in the G20 via carbon pricing, green tax expenditures and green recovery from the COVID-19 pandemic

Public barometer scope – G20 jurisdictions

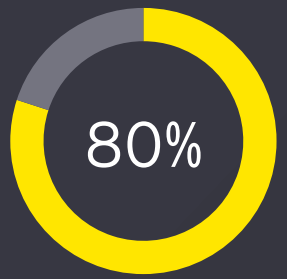
For the public sector, the EY Climate Cash and Tax Barometer examines the funds mobilized in the G20 jurisdictions via carbon pricing, green tax expenditures and green recovery from COVID-19

What are the G20 jurisdictions?

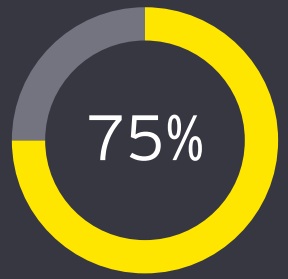
The G20 is the international forum that brings together the world's major economies. Its 20 members account for a significant proportion of the world GDP, world trade, population, and …



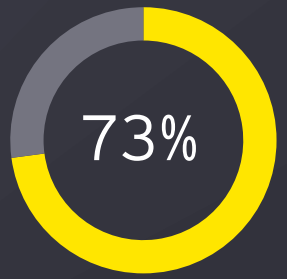
of world population



of world GDP



of world trade



of world emissions

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 pricing in the G20

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

Carbon pricing is a market approach to limiting carbon emissions that creates a direct tie between emissions and their public cost. Specifically, it places a price on carbon (e.g., $25 per ton). The alternative approaches to carbon pricing are:

- Cap-and-trade/emissions trading scheme (ETS) – set quantity and let price fluctuate
- Carbon tax – set price and let quantity fluctuate

GLOBAL

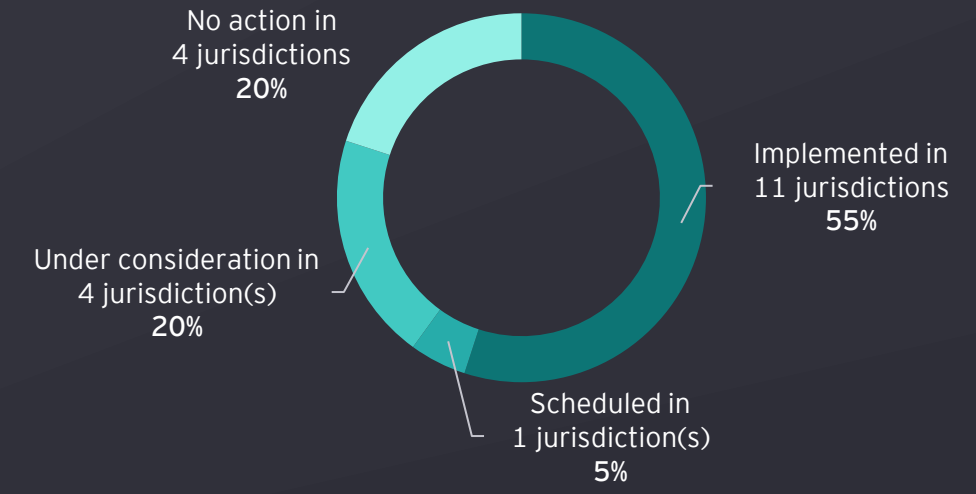
58 regional, national or subnational carbon pricing initiatives had been implemented by 2020 globally

In 2021, 6 new initiatives are scheduled to be implemented. Together, all 64 initiatives (58 pre-existing and 6 new) will cover 21.5% of global GHG emissions in 2021.

Examples of carbon pricing initiatives

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

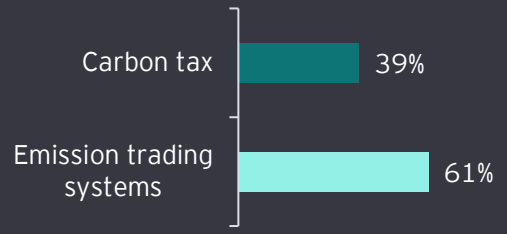
80% of G20 jurisdictions have already implemented, scheduled or are currently considering a carbon pricing initiative.



Carbon pricing in the G20

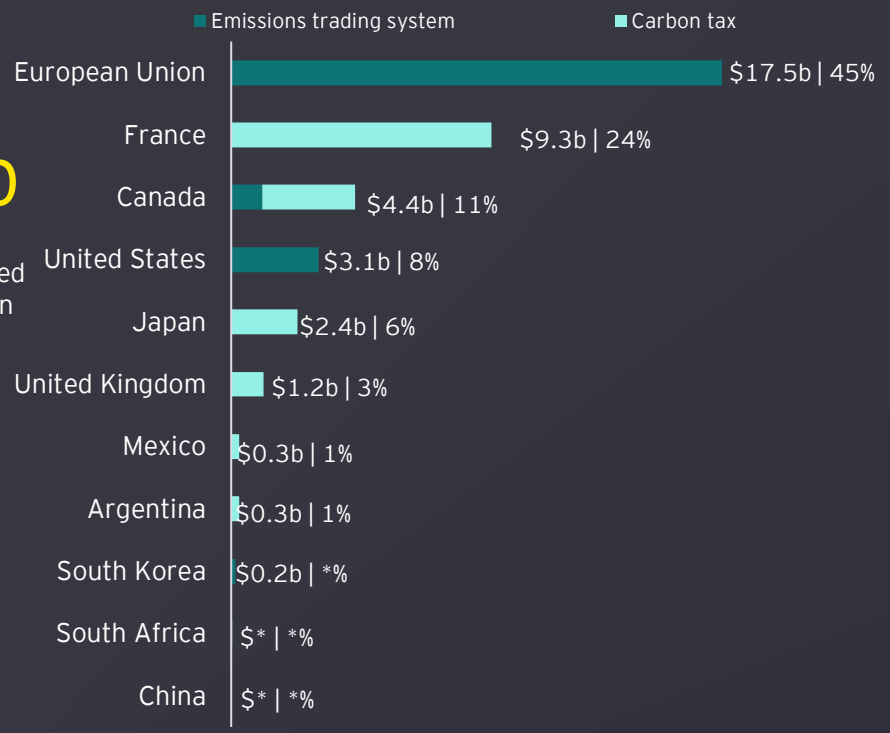
36

regional, national, or subnational carbon pricing initiatives had been implemented by 2020 in G20 jurisdictions.



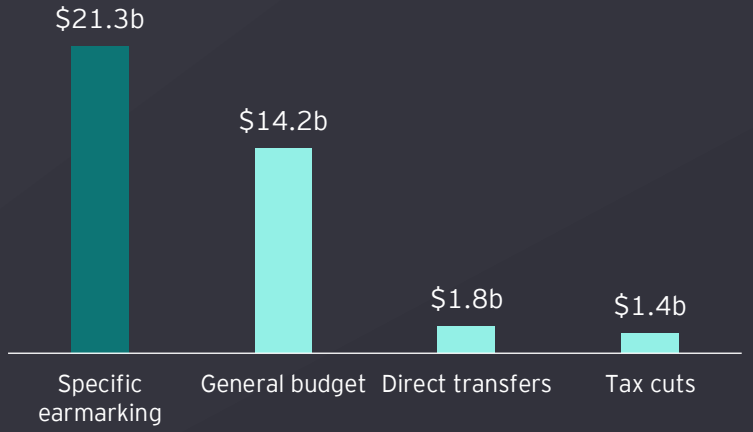
$38.8b

in carbon pricing revenues was collected by G20 jurisdictions in 2019.



55%

of revenue generated by carbon pricing initiatives in G20 jurisdictions is earmarked for specific environmental or broader development projects.



Key footnotes

- For the purposes of the G20 the EU is considered as a single jurisdiction. The countries that make up the EU may or may not be in the G20.
- The carbon revenue breakdown between 11 jurisdictions corresponds to the carbon pricing initiatives that had already been implemented in the 11 G20 jurisdictions by 2020.
- The latest revenue collected data available through I4CE is for the year 2019.
- Data for carbon revenue use (specific earmarking, general budget, direct transfers and tax cuts) is not available for South Africa and is, therefore, excluded from the analysis.
- "$*" denotes that the carbon revenue is less than $0.1 billion. "*%" denotes that the carbon revenue share is less than 0.5%.

Key sources

- Institute for Climate Economics (I4CE)
- World Bank Carbon Pricing Dashboard

See technical appendix for full list of footnotes and sources.

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.

Examples of tax incentives

Germany
Reduction of vehicle tax by 50% for pure electric vehicles

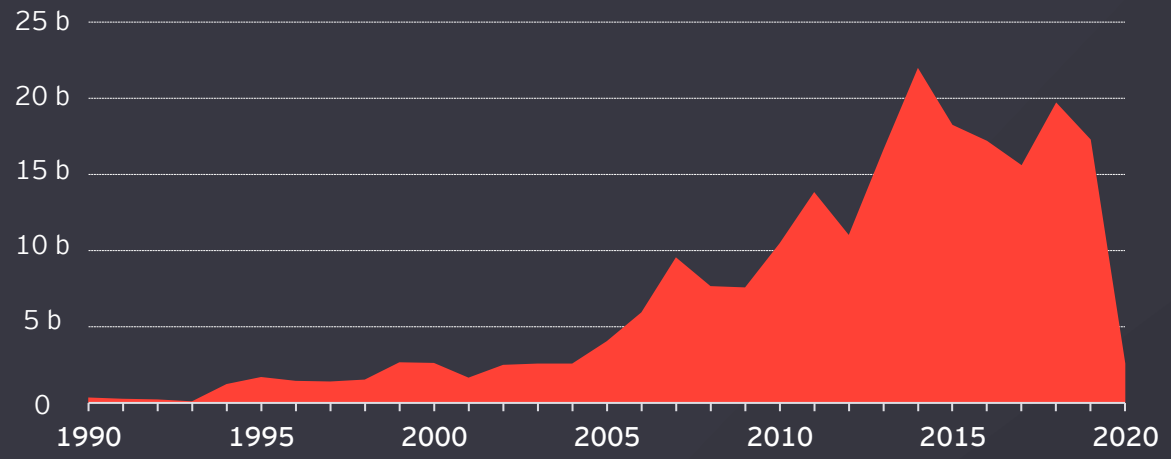
Italy
Deduction from personal income tax 20% of the replacement costs of refrigerators, freezers and their combinations with similar appliances of energy class not lower than A+

South Korea
Reduction of customs duties on renewable energy production container material

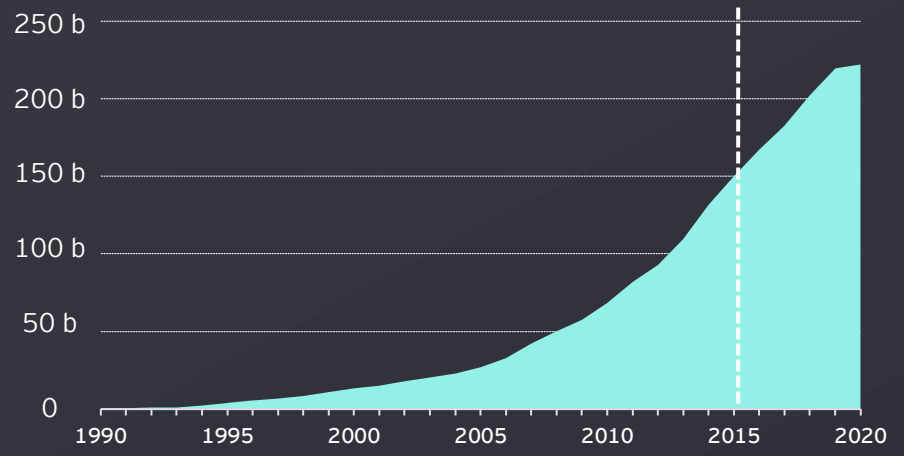
Breakdown of beneficiaries to tax expenditures in the G20, % share of total revenue forgone from 1990 to 2020

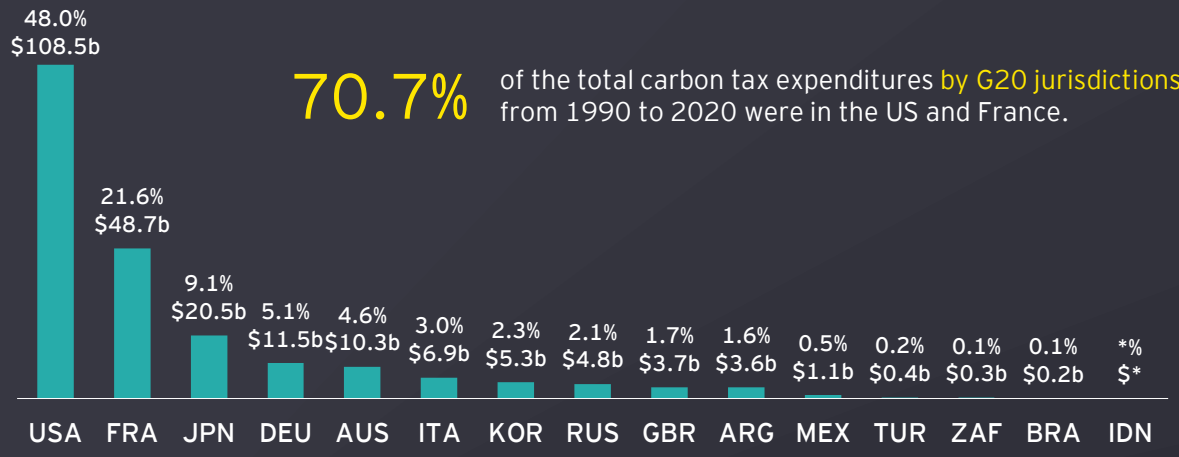
Green tax expenditures in the G20

$222b in revenue has been forgone by G20 jurisdictions due to carbon tax incentives from 1990 to 2020.



40.8% of these carbon tax expenditures by G20 jurisdictions from 1990 to 2020 have been incurred since 2015.





70.7% of the total carbon tax expenditures by G20 jurisdictions from 1990 to 2020 were in the US and France.

Key footnotes

- G20 aggregate numbers are those of its 19 member countries and exclude the rest of European Union's policies and population.
- 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.
- "$*" denotes that the revenue forgone is less than $0.1 billion. "*%" denotes that the revenue forgone share is less than 0.1%.

Key sources

- Global Tax Expenditures Database (GTED)

See technical appendix for full list of footnotes and sources.

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

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

545 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

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

Clean conditional

174 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.

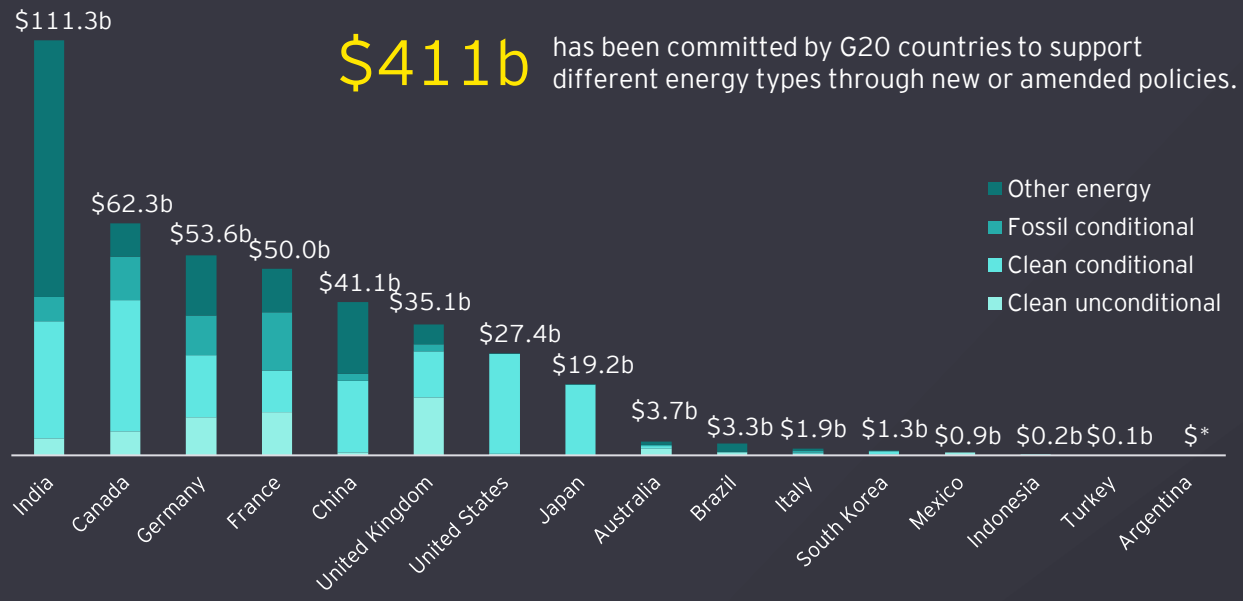
Fossil conditional

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

Other energy

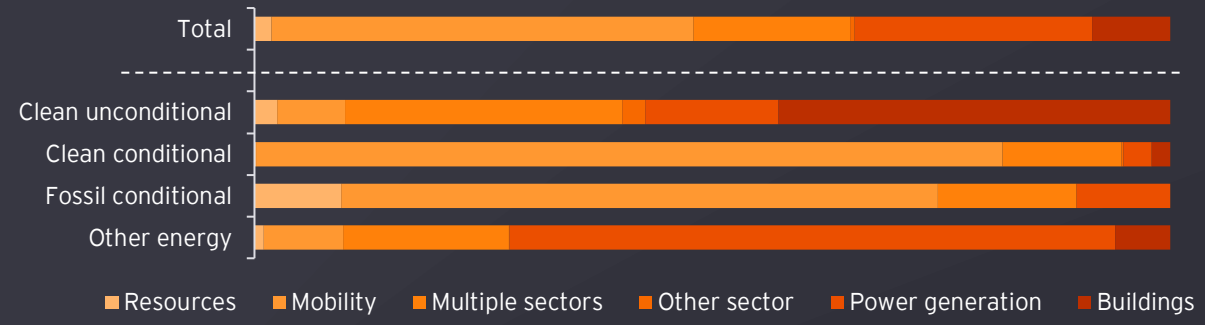
126 policies support nuclear energy, biofuels, biomass and biogas, incineration, and multiple energy types, e.g., intertwined fossil fuels and clean energy.

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



$411b has been committed by G20 countries to support different energy types through new or amended policies.

72% of the total funds committed by G20 jurisdictions affect energy production or consumption in the mobility and power generation sector.



Key footnotes

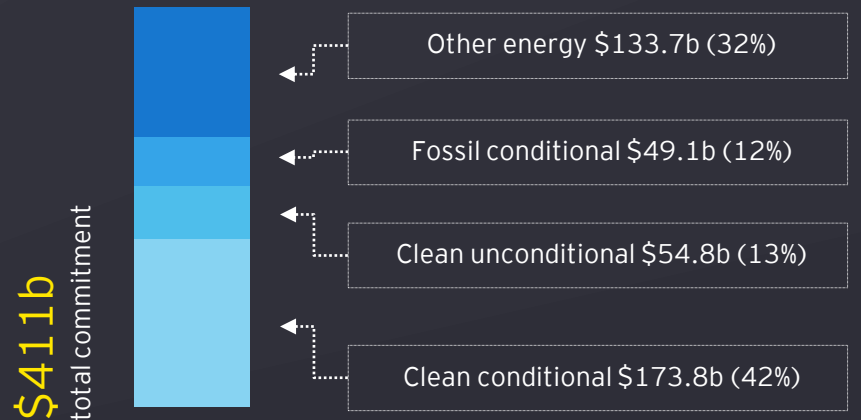
- G20 aggregate numbers are those of its 19 member countries and exclude the rest of European Union's policies and population.
- The Energy Policy Tracker is frequently updated, and the data, which was accessed 1 September 2021, is therefore subject to change.
- "$*" denotes dollar amount less than $0.1 billion.
- Figures may not sum due to rounding.

Key sources

- Energy Policy Tracker (energypolicytracker.org)

See technical appendix for full list of footnotes and sources.

56% of total commitment by G20 jurisdictions is in clean conditional and unconditional policies.



Private sector

Analyzing business investment in carbon reduction and climate financing

Carbon majors – investments in reducing carbon emissions

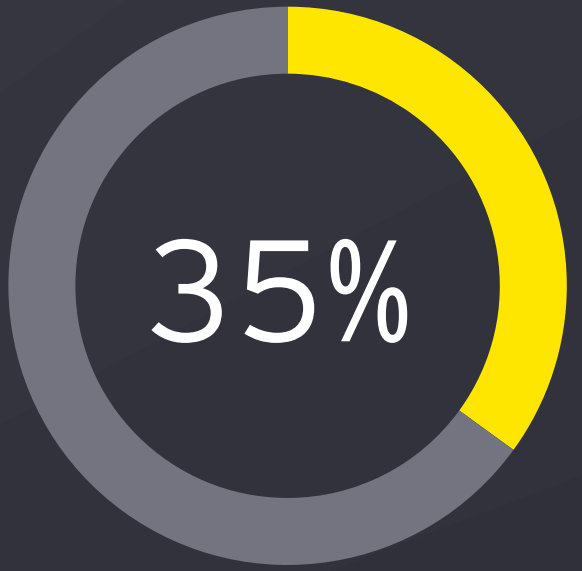
Public commitments from company sustainability reports

Sustainability reporting has enabled organizations to report on their sustainability practices, including those related to carbon emissions. EY researchers analyzed sustainability reports by the carbon majors (i.e., prominent energy companies) and identified public commitments made towards directly reducing carbon emissions.

Examples of private investments

Royal Dutch Shell PLC Sustainability Report 2020
In 2020, Shell invested around $90 million in nature-based projects that reduce or avoid emissions and can also benefit ecosystems by improving biodiversity, water quality and flood protection.

Petrobras 2020 Sustainability Report
The company's corporate program to mitigate greenhouse gas emissions aims to ensure compliance with the disclosed commitments. This program is part of Petrobras' forecasted $1 billion investment in sustainability commitments between 2021 and 2025.



of the **top 100 carbon majors** committed to a financial investment towards directly reducing carbon emissions.

Carbon majors – investments in reducing carbon emissions

Public commitments from company sustainability reports

What has already been invested

$20 billion

invested by 2021

These investments include

- Renewable energy
- Emission reduction technology
- Energy efficiency
- Environmental protection measures
- Carbon capture and storage

How investment will grow in the future

>$100 billion

will be invested by 2030

> "ExxonMobil has invested more than $10 billion on lower-emission energy solutions, including CCS, with plans to invest at least another $3 billion through 2025.
>
> ExxonMobil Updated 2021 Energy & Carbon summary

> "We're aiming to increase our low carbon investment to around $5 billion a year by 2030.
>
> BP Sustainability Report 2020

> "The Climate Investment Program (CIP) [...] aims to invest at least US$400 million over the CIP's five-year life in emissions reduction projects.
>
> BHP Annual Report 2021

> "The 2030 ambition is planned to be realized through large scale industrial measures, including electrification, energy efficiency and digitalization. This is expected to require USD 5-6 billion (NOK 50 billion) of investment from Equinor and its partners.
>
> Equinor 2020 Sustainability Report

Climate financing by global systemically important banks (G-SIBs)

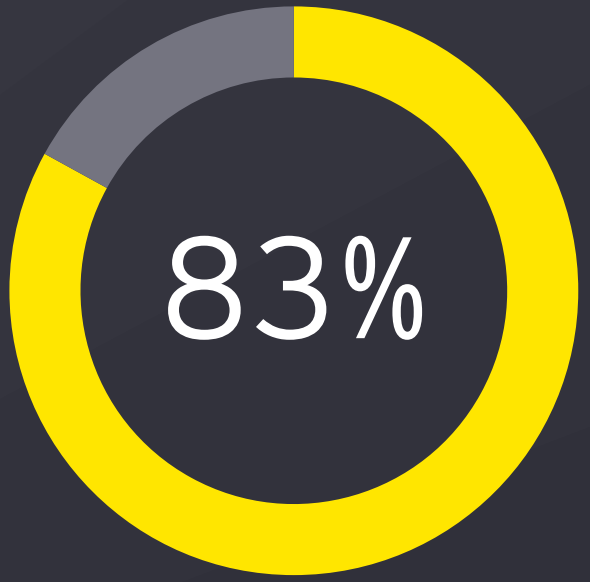
Public commitments from G-SIB sustainability reports

Climate finance refers to financing drawn from public and private sources to pay for climate change mitigation and adaptation. Given the need to mobilize billions of dollars to meet the Paris Agreement goals, climate finance plays an integral role in funding projects related to climate action.

EY teams analyzed sustainability reports by global systemically important banks (i.e., certain large banks of systemic importance) to identify commitments made towards climate financing, especially focusing on green bonds, which are debt securities issued to raise capital with the specific purpose of funding projects related to climate action and sustainability.

Green bonds fund climate projects including

- Green buildings
- Renewable energy
- Carbon emission reduction



of the **2020 G-SIBs** have reported issuance of at least one green bond.

Climate financing by global systemically important banks (G-SIBs)

Public commitments from G-SIB sustainability reports

Reported green bond issuance

$162 billion
issued in 2020

$1.4 trillion
issued since 2013

Reported climate financing

$1.9 trillion
since 2013

>$4.0 trillion
set to be invested by 2030

Examples of climate financing

> We identify three overarching [sustainable investing] approaches: exclusion (when individual companies or entire industries are excluded from portfolios because their activities conflict with and investor's values); ESG integration (which combines ESG factors with traditional financial considerations); and impact investing.

UBS Sustainability Report 2020

> In 2017, we committed that we would provide and facilitate $100b of sustainable finance and investment by 2025 ... by the end of 2020 we had already achieved $93b of that ambition.

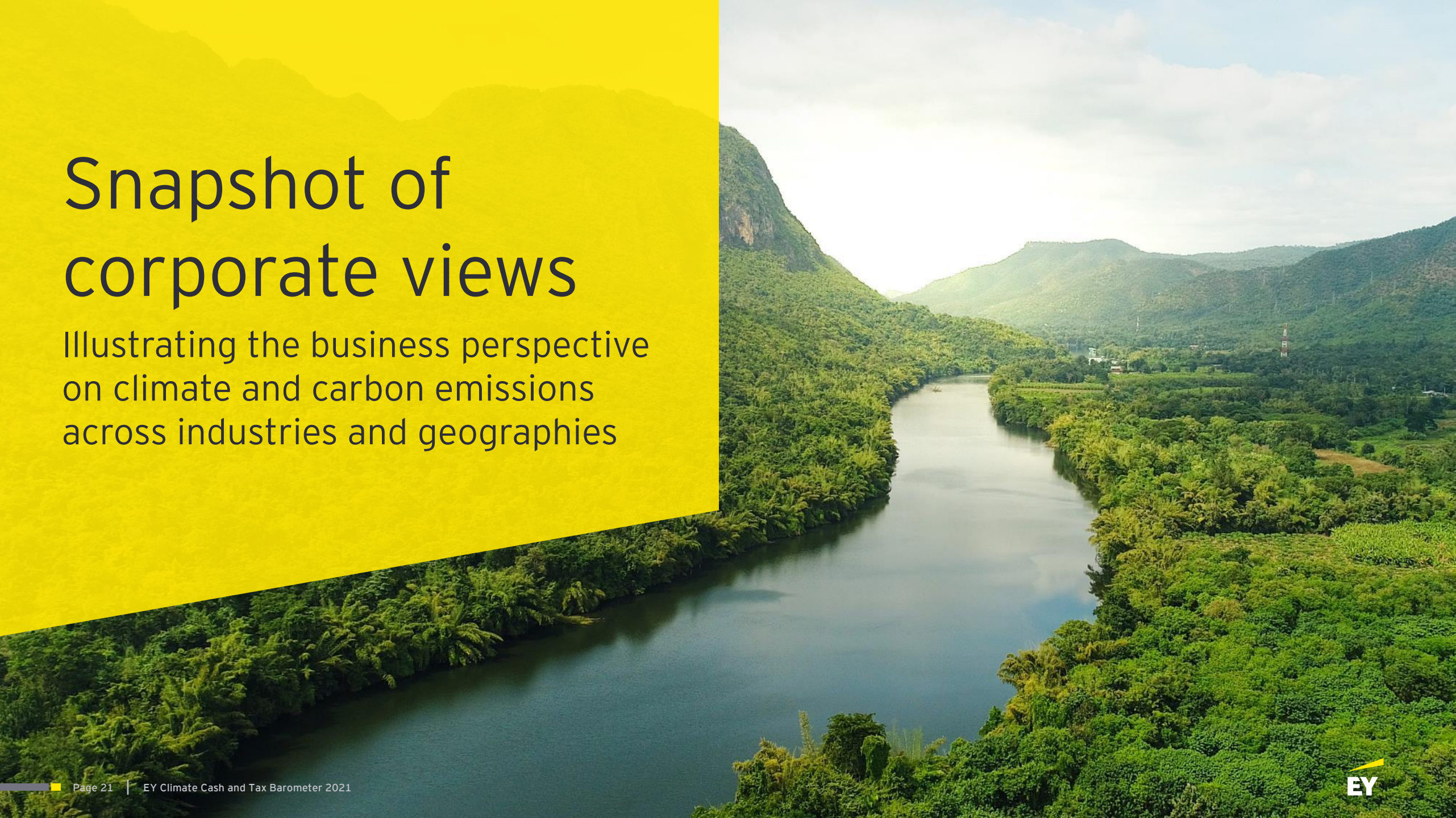
HSBC Holdings plc Annual Report and Accounts 2020

> Since 2003, our firm has committed over $23.9 billion in tax equity financing for wind, solar and geothermal energy projects in the US, including $5.7 billion for wind and solar projects in 2020.

JP Morgan Chase & Co. Environmental Social & Governance Report 2020

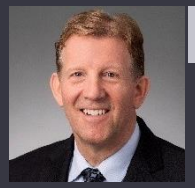
Snapshot of corporate views

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



Snapshot of corporate views

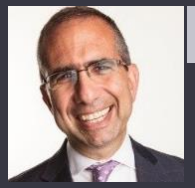
Feedback from a diverse group of businesses on climate and carbon emissions



ConocoPhillips

Lloyd Visser
Vice President, Sustainable Development

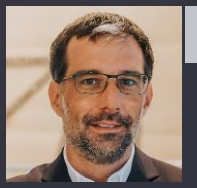
An independent exploration and production company with operations and activities in 15 countries



The Coca-Cola Company

Michael Goltzman
Vice President, Global Policy & Sustainability

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



E.ON

Dr. Andreas Breuer
Head of Hydrogen, Department of Regional Technology and Asset Management

An international clean energy company focused on building cutting-edge distributed energy systems across Europe

Toyota

Kevin Butt
Director of Environmental Sustainability, TMNA

A multinational automotive company manufacturing a diverse product lineup ranging from subcompacts to luxury and sports vehicles to SUVs, trucks, minivans and buses

Microsoft

Lucas Joppa
Chief Environmental Officer

A technology company whose mission is to empower every person and every organization on the planet to achieve more

FedEx

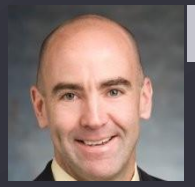
Mitch Jackson
Staff Vice President Environmental Affairs & Chief Sustainability Officer

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

General Electric Company

Roger Martella
Chief Sustainability Officer

A high-tech industrial company operating worldwide in the power, renewable energy, aviation, health care and financial services sectors



Procter & Gamble

Jack Mcaneny
Vice President Global Sustainability

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

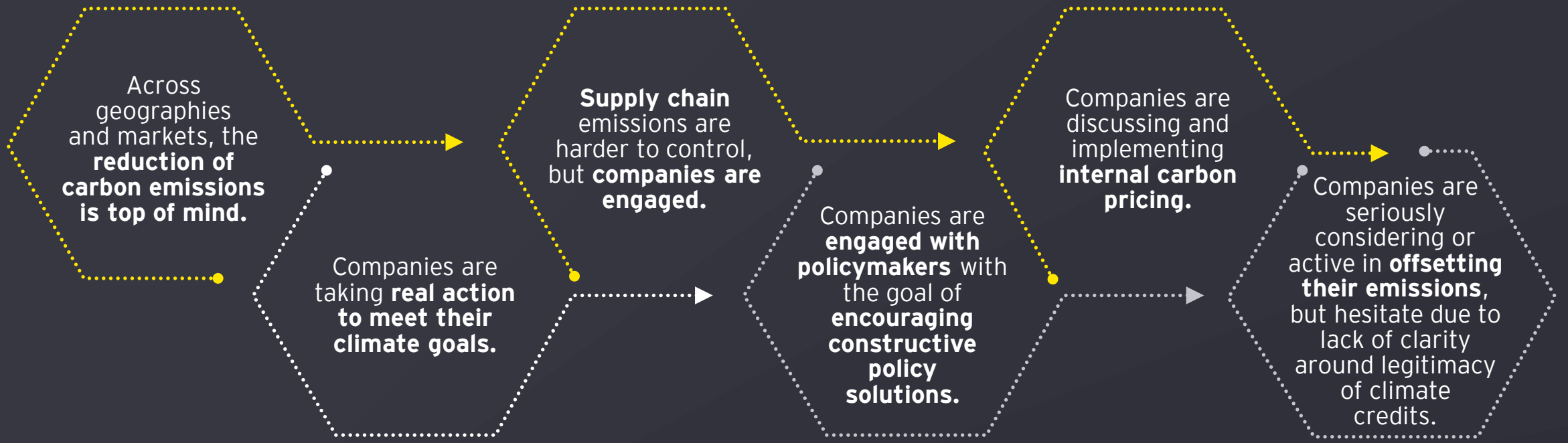
YNCORIS

Thomas Theisen
Group CTO

A service provider for the chemical industry. From complex maintenance service, via the whole range of engineering solution, YNCORIS provides as landlord their customers a full served production plot within the chemical park of Knapsack (south of Cologne)

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

“

Microsoft, and other organizations who are serious about an environmentally sustainable future, need to pull all our levers of influence as suppliers, investors, employers, policy advocates and partners to make an outsized impact on climate change. At COP26, public and private sectors will join forces to define real net zero, how to measure progress and build markets that can deliver a just, prosperous future for everyone.

Lucas Joppa
Microsoft

“

In 2020 we achieved a 25% reduction of what we call the ‘drink in your hand’, that is, a 25% reduction in the carbon embedded in each Coca-Cola beverage.

Michael Goltzman
The Coca-Cola Company

“

We have to look at breakthrough technologies that will drive the dramatic reductions people are asking for. We are investing in technology of today as well as the breakthrough technologies of tomorrow to enable products with less and less GHG emission in 5, 10 and 15 years.

Roger Martella
GE

“

This is an incredible time. As said in Field of Dreams, ‘Hardly anyone recognizes the most significant moments in their life when it happens to them.’ I think we are in that moment where we do have an influence on the future.

Kevin Butt
Toyota

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

- Microsoft has pledged to be carbon negative by 2030, and by 2050 Microsoft will remove from environment all the carbon the company has emitted either directly or by electrical consumption since it was founded in 1975.
- GE has committed to be carbon neutral (Scopes 1 and 2) by 2030 and has also set an ambition to be net zero by sold products by 2050. The company surpassed its 2020 goal ahead of schedule, delivering a 21% emissions reduction from facilities and operations between 2011 to 2019.
- ConocoPhillips has published its Paris-aligned strategy, including net-zero Scope 1 and Scope 2 by 2050 and intermediate goals.
- The Coca-Cola Company has a net-zero ambition for 2050 and a Science Based Target of a 25% absolute reduction by 2030.
- P&G has committed to a net-zero ambition by 2040 and FedEx has a goal to obtain carbon neutral global operations by 2040, emphasizing the need for urgent action.
- Toyota established its first sustainability office nine years ago and aims to be carbon neutral by 2035 for all North American operations. And it is holding itself accountable: Toyota is now in its seventh five-year Environmental Action Plan tracked using annual metrics with quarterly reporting summarized using a KPI dashboard shared regularly with the CEO.
- E.ON and YNCORIS see themselves as enablers for their customers: customer expectations are leading to more ambitious carbon reduction targets, and both E.ON and YNCORIS have positioned themselves as enablers to help customers reach these goals.

Companies are taking real action to meet their climate goals

"We invest a million dollars an hour, 24 hours a day, 365 days a year in R&D. That includes design of new vehicles — electrified vehicles, hybrid vehicles, fuel cell vehicles — and new technology for manufacturing. I can tell you that a large majority of that is spent in this [climate action] space.

Kevin Butt
Toyota

"You have to have a goal. But then you do have to put all the systems in place. We have a long history with this. We had a full three-scope, value chain goal in 2013: 25% reduction in the carbon embedded in each Coca-Cola beverage. Earlier this year, we reported and assured our actual achievement of that target, and we are now working on the new goal that we set back in 2019.

Michael Goltzman
The Coca-Cola Company

"FedEx is committing more than $2 billion to support initiatives designed to make company operations more sustainable across its fleet of motorized vehicles and aircraft, as well as its facilities. Future initiatives will focus on three key areas: carbon sequestration, vehicle electrification and sustainable energy investments — all geared to help us reach our goal of carbon neutral operations.

Mitch Jackson
FedEx

"We're going to run our sustainability program just like we do our businesses with the same operational rigor. Just like businesses hold themselves accountable for their financial performance, we're holding ourselves accountable for our sustainability performance. We're going to approach this with the same transparency.

Roger Martella
GE

Companies are taking real action to meet their climate goals

- For its 2030 targets, ConocoPhillips is focused on the emissions intensity of its portfolio: allocating capital to lower GHG intensity and lower cost of supply assets, taking on emissions-reduction projects, and establishing a Low Carbon Technologies organization.
- GE is heavily investing in innovating technology to address climate change in the future, specifically nuclear energy, carbon capture and sequestration, hydrogen, the next generation of jet engines, and more accessible health care.
- Toyota's transition to electrification and hybrid vehicles has saved billions of gallons of fuel, and the release of Toyota patents on fuel cell technology accelerated the greening of the transportation sector.
- FedEx is supporting initiatives to promote efficiency, electrification, sustainable energy and carbon sequestration.
- In addition to having met its climate goals set in 2010, P&G is seeking to continue optimizing the design of its products to drive material efficiency.
- E.ON is investing in hydrogen and energy efficiency, while YNCORIS is greening its energy fluxes and focused on sustainable biochemistry – producing base chemicals from regenerative hydrogen and green CO2 from exhaust streams.
- The Coca-Cola Company is investing in more efficient, climate-friendly cold drink equipment, while its distribution system is using hydrogen and other types of climate-friendly fuels. Moreover, the company is piloting carbon capture projects in both Europe and the United States.
- Microsoft is continuing to invest in new carbon reduction and removal technology.

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

"We are partnering with our procurement team and hundreds of our suppliers and have put down a marker on two things. One, we're going to start asking our suppliers for more data through the CDP supplier engagement platform. And two, we want them to help us achieve our ESG goals, in climate of course, but also in water, packaging and agriculture.

Michael Goltzman
The Coca-Cola Company

"We announced a new goal to achieve a 40% reduction in our supply chain emissions by 2030 that complements our existing goal to have a 50% reduction in emissions by 2030 from our manufacturing facilities.

Jack Mcaneny
P&G

"I see it in projects and in the discussion with our customers; they all have the pressure to reach these carbon reduction goals. We are an enabler for clients to reach net zero carbon.

Dr. Andreas Breuer
E.ON

"We have to be CO2 neutral by 2040. There are several drivers. First, we are pressed by our customers. Our customers have to report our emissions in their CO2 footprint, which is evaluated by the market. Second, as an energy provider, we have to cover the costs of these CO2 emissions. Third, if we are not able to enable our customers to meet this vision, then they will move their operations elsewhere. We are doing our best to change our energy sources to a much better CO2 footprint.

Thomas Theisen
YNCORIS

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

- The Coca-Cola Company is working with its suppliers to collect emissions data and encouraging its entire supply chain to set ESG goals.
- Combining product innovation and consumer education, P&G is committed to reduce its Scope 3 emissions. For example, two-thirds of all emissions in P&G's laundry detergent life cycle come from heating water. From 2010 to 2020, P&G has increased laundry done in low-energy or cold settings from 38% to 70%.
- Toyota has requested absolute carbon reductions from its supply base and supports its suppliers in this by managing a central database where suppliers can share best practices and useful metrics. Moreover, it is working with hotels, major airlines and rental car fleets that are committed to sustainability and offset carbon emissions for employee travel.
- FedEx includes the contracted transportation portion of its Scope 3 emissions in its 2040 carbon neutral operations goal.
- E.ON and YNCORIS act as enablers to help their customers reach their emission reduction targets.
- GE is focused on reaching net-zero Scope 3 emissions from the use of products.
- For ConocoPhillips, Scope 3 targets are premised on consumer decisions the company cannot control, but it advocates for carbon pricing policy to facilitate a reduction in Scope 3 end-use emissions.
- Microsoft has committed to reducing its Scope 3 emission by more than half by 2030.

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

“

These [green] projects are seen as not just good for GE, but necessary to advance technologies to solve climate change more globally. We’re always honored when a government recognizes the role we can play in being good stewards of these resources and knowing an investment in our research will pay dividends down the road.

Roger Martella
GE

“

Every change in the road map from our government gives us opportunities. What does that mean for our projects? What does it mean for our customers? And what can we provide?

Dr. Andreas Breuer
E.ON

“

What I try to do internally is to establish the thinking that as soon as we develop a technology, we are able to license it to share with others. This is what policymakers want to encourage with their policies — it’s not just leveling up the technology for our own use but something that we can spread out to the market. Everyone can benefit from our experience and knowledge.

Thomas Theisen
YNCORIS

“

We know that citizens in communities, cities and countries around the world want their political leaders to stand up for a sustainable future. FedEx is eager to work with policymakers and government leaders to help make this future a reality.

Mitch Jackson
FedEx

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

- Toyota, P&G and GE highlight the importance of partnerships and collaboration in addressing climate change, whether it is with NGOs (nongovernmental organizations), policymakers or suppliers, given the limited impact any single company can make on its own.
- Likewise, The Coca-Cola Company engages through membership in a variety of coalitions and is focused on aligning advocacy with the company's long-term sustainability goals.
- ConocoPhillips has demonstrated a sustained effort in policy engagement and advancing carbon pricing in many of the jurisdictions in which it operates, including Canada, Europe, Australia and the United States.
- FedEx is eager to work with policymakers and government leaders to help make a more sustainable future a reality.
- E.ON is heavily involved in discussions with and delivering solutions to policymakers.
- YNCORIS hopes policymakers will consider supporting not just the latest innovative solution, but also development of the infrastructure and framework needed to support those solutions. YNCORIS believes the path to CO2 neutrality is only possible under economically and regulatorily attractive circumstances.
- Microsoft is using its voice speak out on public policy issues, including the need to expand global research on carbon and scale carbon-reduction technologies. It is also serving as the Principal Partner for the COP26.

Companies are discussing and implementing internal carbon pricing

> We have to reframe how business thinks about financing, sustainability and what that really means. When you're considering the cost of carbon, the economics model changes dramatically.

Kevin Butt
Toyota

> We embed a carbon price into the long-range economics for all of our assets. So for all of our decisions, our new investments and our capital allocation decisions on existing assets, we apply a carbon price as a sensitivity.

Lloyd Visser
ConocoPhillips

- ConocoPhillips embeds a carbon price into the long-range economics for its assets and takes it into account for all company decisions on new investments and for company capital allocation decisions on existing assets.
- Microsoft is expanding its internal carbon fee, in place since 2012, to include Scope 3 emissions.
- Discussions are underway at The Coca-Cola Company, E.ON, P&G and YNCORIS.

Companies are seriously considering or active in offsetting their emissions, but hesitate due to lack of clarity around legitimacy of climate credits

> We're just now starting to turn our mind towards a voluntary market and what kind of credits we would need to offset and reach some of our targets. We're very much watching the Paris Agreement negotiations. How all that is going to land is going to play a big part into the type of offsets. It's a very uncertain market. It's tricky for a company to navigate those uncertainties.

Lloyd Visser
ConocoPhillips

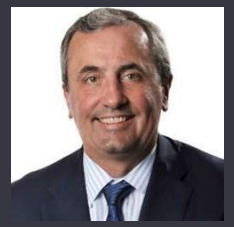
> We will advance what we call natural climate solutions to protect or restore critical ecosystems and, in doing so, will deliver a carbon benefit. We are partnering with a range of NGOs to advance such projects that will deliver this carbon benefit.

Jack Mcaneny
P&G

- Toyota is offsetting its emissions and is looking for more clarity around compliance.
- E.ON and ConocoPhillips are looking into offsetting their carbon emissions with Paris-compliant carbon credits.
- When their emission plans get to the stage where they are ready for offsets, The Coca-Cola Company will explore offsetting emissions with Paris-compliant carbon credits.
- P&G is investing in natural climate solutions, a suite of projects that derive a carbon benefit to make P&G manufacturing operations carbon neutral.
- YNCORIS is offsetting its emissions with Paris-compliant carbon credits under the EU ETS.
- GE is focused on reducing emissions as aggressively as possible before considering the widespread use of offsets.

EY perspective – climate stewardship cuts across generations

"Aligning financial flows with low-carbon strategies and action plans is now more critical than ever to meet the goals of the Paris Agreement and deliver on the 2030 Agenda for Sustainable Development.



Carmine Di Sibio
EY Global Chairman and CEO

"Companies that include the tax department in environmental, social and governance conversations will be better positioned to manage potential risks, identify changes and communicate with stakeholders, customers and regulators about ESG tax issues.

Cathy Koch
EY Global Sustainability Tax Co-Leader

"As the world is now in critical need of strong commitments from companies to mitigate climate change, they should more and more consider integrating internal carbon pricing as a key economic indicator. That can reshape their future investment strategies and foster the adoption of low-carbon solutions in businesses.

Mbeugue Diop
Climate Finance and R&D

"Promoting and fostering sustainable development is necessary for continued productivity and efficiency so that future generations have the opportunity to prosper.

Nahla Almbaid
EY Quantitative Economics and Statistics (QUEST)

Recommendations

1. Encourage corporations and local and national governments to consider Scopes 1 and 3 in the carbon footprint analysis and reporting
2. Encourage stakeholders, including government and businesses, to convene a series of high-level sessions on policy solutions under the United Nations Framework Convention on Climate Change (UNFCCC)
3. Provide guidance to determine internal carbon pricing and align with carbon market pricing
4. Encourage business to work with governments on climate risk disclosure policies, which should be standardized and consistent across jurisdictions
5. Raise large awareness campaigns to clarify carbon credit compliance with the Paris Agreement
6. Take appropriate steps to appoint a carbon market regulator and legal instruments to stop illegal and noncompliant carbon credits sales, based on rainforest nation expectations
7. Addressing climate change should be a partnership between the public and private sector; the public sector, NGOs, trade groups and others should facilitate best practices seen in the private sector such as carbon pricing
8. Mobilize the capital market to finance climate change and create a financial market for carbon as a new asset class according to developing economies' needs

For more information contact:

Patrice Lefeu

EY Global Climate & Sustainability Deputy Leader, Climate Finance Leader, EY & ASSOCIES

Paris, France
+33 1 46 93 88 66
patrice.lefeu@fr.ey.com

Dr. Brandon M. Pizzola

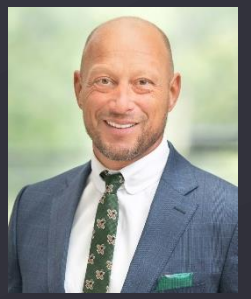
EY Quantitative Economic and Statistics (QUEST)

Washington, DC
+1 202 327 6864
brandon.pizzola@ey.com

Cathy M. Koch

EY Global Sustainability Tax Leader, EY Global Tax Policy Network Leader, EY Americas Tax Policy Leader

Washington, DC
+1 202 327 7483
cathy.koch@ey.com



Frank Burkert, LL.M.

EY Global Co-Leader GIILS, Global Climate Finance and Funding & Sustainability Services, EMEIA

Hamburg, Germany
+49 40 36132 21155
frank.burkert@de.ey.com

Technical appendix

Green recovery in the G20 – technical note

About the source(s)

Institute for Climate Economics (I4CE)
Global Carbon Account in 2020

- I4CE is a Paris-based think tank with expertise in economics and finance with the mission to support action against climate change.
- Its report, "Global Carbon Account in 2020," presents an overview of carbon pricing: countries that have adopted such policies, price levels, revenue generated, use of revenue.
- This information employs data from multiple sources, including the World Bank, OECD and International Carbon Action Partnership (ICAP).
- The World Bank cites the I4CE's research in its work "Using Carbon Revenues," published in 2019.

The World Bank
Carbon Pricing Dashboard

- Launched in May 2017, the Carbon Pricing Dashboard is an interactive online platform that provides up-to-date information on existing and emerging carbon pricing initiatives around the world.

Notes

- For the purposes of the G20, the EU is considered as a single jurisdiction. The countries that make up the EU may or may not be in the G20.
- The carbon revenue breakdown between 11 jurisdictions corresponds to the carbon pricing initiatives that had already been implemented in the 11 G20 jurisdictions by 2019.
- The latest revenue collected data available through I4CE is for the year 2019.
- Data for South Africa is not available through the principal source (I4CE) for revenue collected in 2019. To supplement, the revenue collected in 2020 available through the World Bank Carbon Pricing Dashboard is used for the analysis.
- Data for carbon revenue use (specific earmarking, general budget, direct transfers, and tax cuts) is not available for South Africa and is, therefore, excluded from the analysis.
- Count of initiatives data is current as of 2020 and does not account for initiatives that were implemented or terminated in 2021 except as otherwise noted.
- "$*" denotes that the carbon revenue is less than $0.5 billion. "*%" denotes that the carbon revenue share is less than 0.5%.
- The World Bank Carbon Pricing Dashboard, from which some of the information presented was collected, is frequently updated, and the data is therefore subject to change. Data was accessed 2 August 2021.
- Figures may not sum due to rounding.

Carbon majors – 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 20,814 tax expenditures from 97 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 19 member countries and exclude the rest of European Union's policies and population.
- GTED, which is the most comprehensive data set 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.
- Breakdown of beneficiaries to tax expenditures in the G20 includes an additional category "others." However, it is not labeled in the figure as it accounts for less than 0.1% of total revenue forgone.
- "$*" denotes that the revenue forgone is less than $0.1 billion. "*%" denotes that the revenue forgone share is less than 0.1%.

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 three 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

- 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 1 September 2021.
- "$*" denotes dollar amount less than $0.1 billion.
- Figures may not sum due to rounding.

Carbon majors – technical note

About the source(s)

Company Sustainability Reports

Latest company-issued reports

- The latest available company-specific sustainability reports were used for collecting data on private commitments to reducing greenhouse gases and sustainable practices:
  1. The reports include sustainability reports, ESG reports and CSR reports.
  2. Each report was published by the company in question and is publicly available on company websites.

Notes

- Financial values were recorded as published. Values for prior years were not adjusted for inflation.
- The list of carbon majors was retrieved from the CDP Carbon Majors Report 2017.
- For the purpose of this study, only reports officially published by the companies were considered.

Methodology

- For the purposes of this analysis, EY researchers identified private investments from the top 100 carbon majors that directly related reducing GHG emissions. The process used to determine the above was as follows:
  1. Data points were collected and cross-checked independently by three EY analysts from each company's report where available.
  2. Investments in renewable energy, energy efficiency, emissions reduction technology, environmental protection measures, carbon capture and other activities directly contributing to a GHG reduction were included.
  3. Some companies reported 2030 goals in terms of reaching a certain threshold of investment per year. In such cases, their investments for years 2021–29 were estimated by linearly interpolating between their investment in 2020 and their 2030 goal.
  4. Some private investments included temporary investment projects/programs committing an annual financial amount committed with a definite starting year, but without a definite termination year. In such cases, it was assumed that the temporary programs would end in 2025.
  5. Each amount was recorded in its reported currency and subsequently converted into US dollars using its average 2020 conversion rate.

Climate financing – technical note

About the source(s)

G-SIB sustainability reports

Bank issued reports for 2020

- Each of the 2020 global systemically important banks issued a report that covers their sustainable finance activities:
  1. The reports include sustainability reports, ESG reports, CSR reports and green bond issuance reports.
  2. Each report was published by the bank itself and is available directly from its respective website.

Notes

- Monetary values were recorded as published. Values for prior years were not adjusted for inflation.
- The 2020 list of global systemically important banks was retrieved from the Financial Stability Board.
- For the purpose of this study, only reports officially published by the banks were considered.
- Reported sustainable finance includes green bond financing activities.

Methodology

- For the purpose of this analysis, EY researchers identified climate financing that directly related to climate action. The process used to determine the above was as follows:
  1. Data points were collected and cross-checked independently by two EY analysts from each bank's individual report.
  2. Sustainable finance activities, such as issuance of green bonds and commitments to sustainable finance, were only recorded if they were directly related to reduction of greenhouse gases. If financial breakdowns by activity were not available, the entire amount of reported sustainable finance was used.
  3. Each amount was recorded in its reported currency then converted into US dollars using the IRS average 2020 conversion rate.

EY | Building a better working world

EY exists to build a better working world, helping create long-term value for clients, people and society and build trust in the capital markets.

Enabled by data and technology, diverse EY teams in over 150 countries provide trust through assurance and help clients grow, transform and operate.

Working across assurance, consulting, law, strategy, tax and transactions, EY teams ask better questions to find new answers for the complex issues facing our world today.

EYG no. 009139-21Gbl
ED None

ey.com