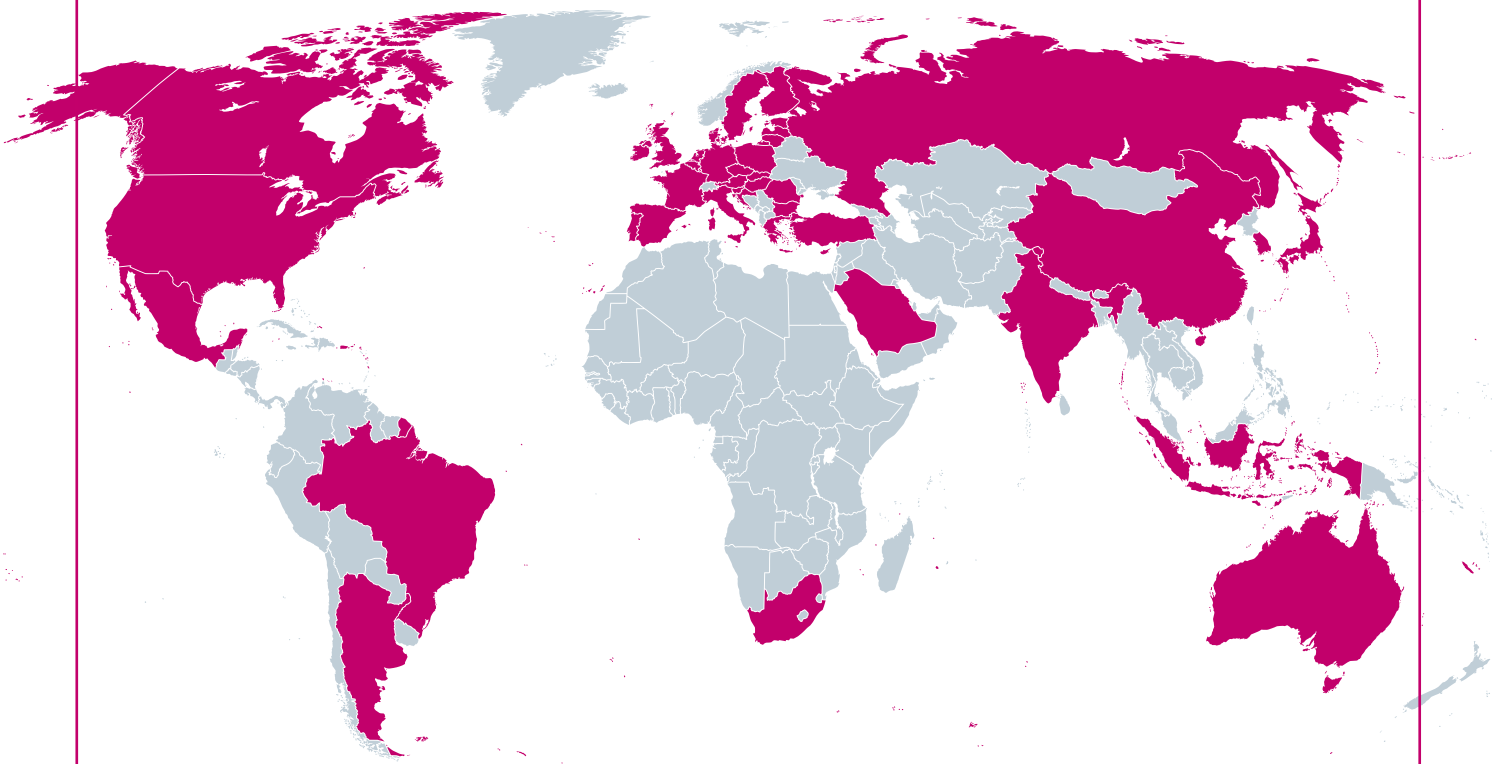


Pushing the G20 towards a Net-Zero Emissions Economy:

Country Profiles and Policy Recommendations[1]

[1] **This F20 Policy Briefing is based on the 2019 Brown to Green Report that was compiled by Climate Transparency and actively contributed to by several F20 partners.**
The Brown to Green Report is the world's most comprehensive annual review of G20 climate action: it provides concise and comparable information on mitigation, finance and vulnerability. The report is published annually by "**Climate Transparency**", a global partnership of 14 climate research organisations and NGOs from the majority of G20 countries, many from emerging economies. The report consists of 20 country profiles and a summary report.

For a transformation that leaves no one behind.

Lead-Author: Lena Donat (Germanwatch)

Content

F20 - Policy Briefing #1/2020

For a transformation that leaves no one behind.

With 1.5°C, around 70% of future climate impacts can be avoided in G20 countries

Climate change is one of the most pressing challenges of our time. Across the world, extreme weather events are becoming more frequent, more severe and longer lasting. Record-breaking heatwaves in Europe, unprecedented wildfires in Australia or accelerating sea level rise are becoming everyday news. **In G20 countries, extreme whether events caused US$ 216 billion of economic losses in 2018.**[1] These numbers do not even take the effects of other climate impacts such as sea level rise into account.

The Intergovernmental Panel on Climate Change (IPCC) expects such events to become even more dramatic if global mean temperature rises above 1.5°C from the pre-industrial period. In 2019, we were already at 1.1°C – and on the current trajectory we are heading towards a world beyond 3-4°C. **Around 70% of future climate impacts in G20 countries could be avoided if temperature increase would be limited to 1.5°C instead of 3°C.**

The year 2020 is a turning point

Scientists have calculated that the global carbon budget for staying below 1.5°C will be exhausted in 8 years if the world keeps emitting greenhouse gas (GHG) emissions at the current level. Instead global emissions need to start dropping by 2020 and decline rapidly, getting to net zero before 2070.

For this to happen, all countries need to accelerate climate action. The G20 countries play a decisive role in finding solutions to this challenge. They are not only responsible for around 80% of annual carbon emissions, but also for 85% of global GDP and two thirds of global foreign direct investment. This gives G20 countries a powerful position for bringing about the required change towards global net-zero emissions.

AT A GLANCE:

G20 countries are responsible for 80% of global emissions and are to a large extent responsible for the global climate crisis, while also being able to change course and set sails for a global energy transition and the successful implementation of the 2030 Agenda with its 17 Sustainable Development Goals (SDGs) agreed by all countries of the United Nations

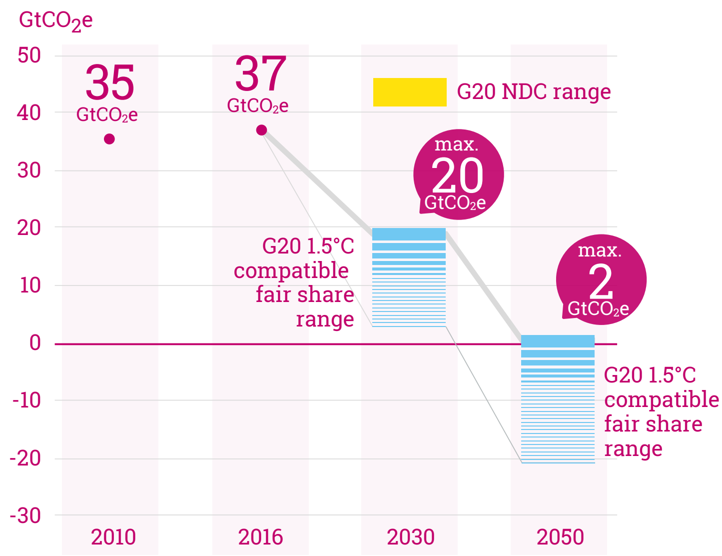
The Brown to Green report 2019 shows where these countries currently stand in their transition towards net-zero emission economies.

The year 2020 will decide whether the G20 can speed up this transition to limit global warming to 1.5°C.

Read in this briefing where the G20 countries stand and what they should do to accelerate climate action.

[1] **MunichRE.** 2016. NatCatSERVICE. Downloadcenter for statistics on natural catastrophes. Available at www.munichre.com/en/reinsurance/business/non-life/natcatservice/index.html (27 Nov 2019).

Even under current targets, G20 countries will be emitting twice as much above the 1.5°C limit



Source: Brown to Green Report's own evaluation based on Climate Action Tracker 2019

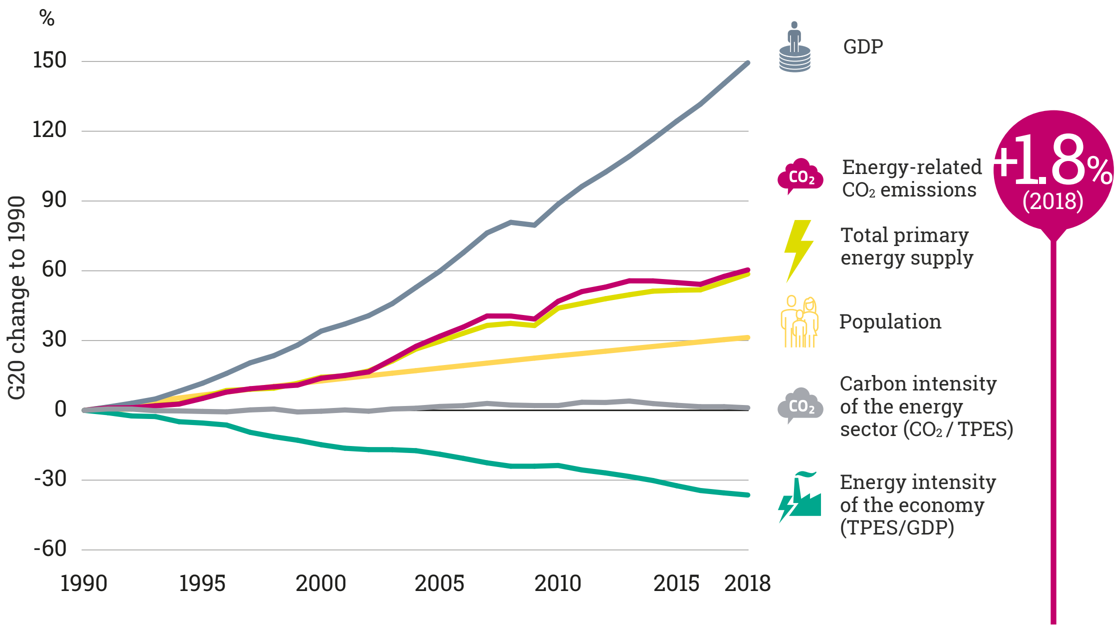
G20 countries, with their economic power and past emission record, need to get to net-zero emissions much earlier than other countries. By 2030, they need to roughly cut their emissions in half and get to zero around the year 2050. Unfortunately, currently none of the G20 countries is on track for 1.5°C. Under the current climate targets (according to the national climate plans, the so called Nationally Determined Contributions, NDCs, set in 2015), G20 countries together would emit twice as much in 2030. India's NDC is closest to a 1.5°C pathway but the country still needs to prepare for the deep transition required. Around half of the G20 countries might not even achieve their climate targets (Argentina, Australia, Brazil, Canada, Japan, Mexico, South Africa, South Korea, US). The other half is projected to surpass their 2030 climate targets.

G20 countries thus need to (1) tighten their climate targets, and (2) make sure to achieve their climate targets.

Why are emissions still so high? G20 energy supply has not become cleaner – 82% still comes from fossil fuel combustion

The lion's share of GHG emissions comes from energy – used for electricity, transport, heating buildings, fuelling industrial processes etc. Over the last decades, high GDP growth rates in the G20 have overridden energy efficiency gains. G20 energy supply has been constantly increasing. G20 countries have covered this additional energy demand only to a small extent with renewable energy. Simultaneously, they keep expanding fossil fuel energy, like coal, oil and increasingly also gas – fossil fuels still make up 82% of the G20 energy mix. On average, the carbon intensity of the energy mix (i.e. how much CO2 is emitted per unit of GDP) is thus still the same as in 1990. In other words: G20 energy supply has not yet become cleaner.

Half of the G20 countries have increased fossil fuel energy supply in 2018

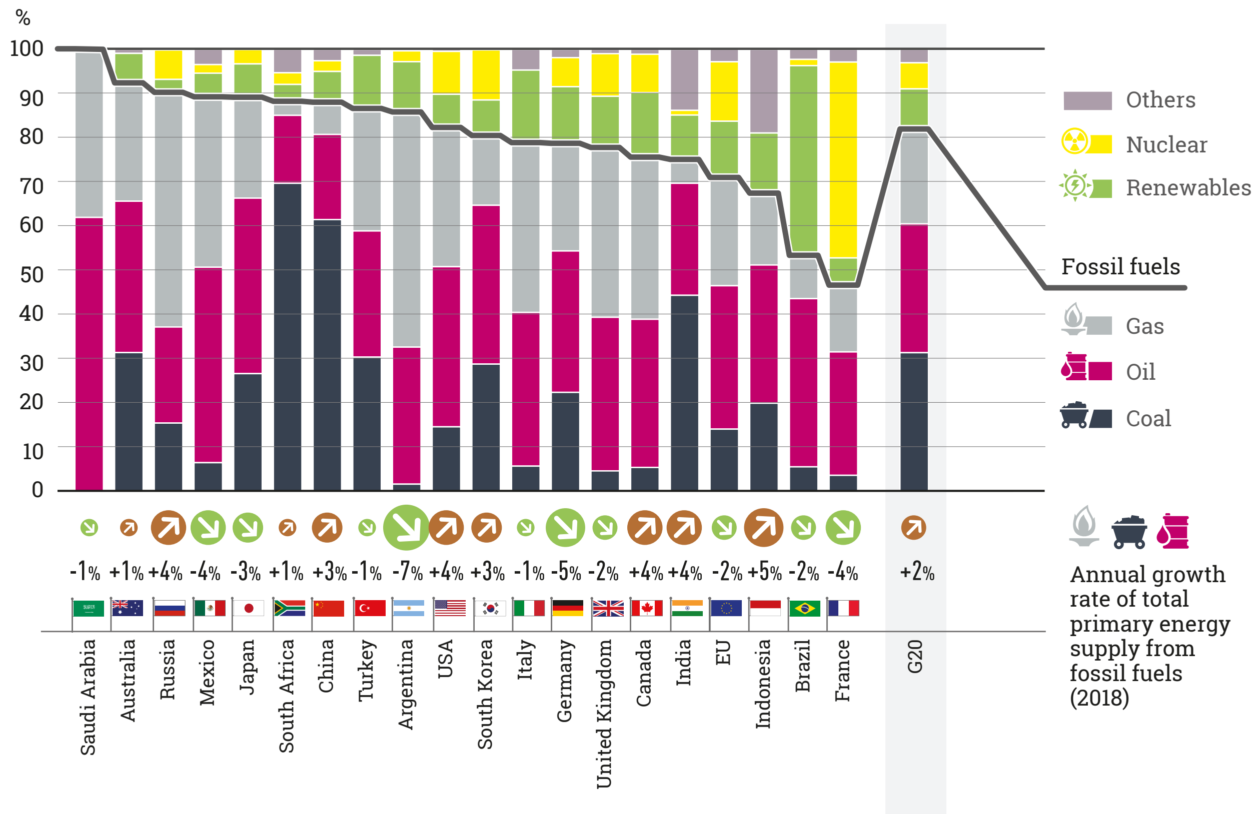


Source: Enerdata 2019, World Bank 2019

Half of the G20 countries have increased fossil fuel energy supply in 2018. China, India, Indonesia, Russia, South Africa, South Korea and Turkey have increased coal supply in 2018, and plan to add additional coal capacities. Natural gas has increased rapidly in many countries but especially in China (+18%), US (+10%) and Canada (+10%). China pursues a transition to renewables and gas; in the US and Canada abundant natural gas reserves are available.

To keep global warming to 1.5°C, the share of fossil fuels in the energy mix needs to fall to 67% by 2030 and to 33% by 2050 – globally. The G20 countries will need to move faster.

G20 emissions have increased in all sectors – but some promising political decisions



Source: Enerdata 2019

To reduce energy emissions, G20 countries need to shift to clean fuels, with renewables being the most promising option. But they also need to increase energy efficiency across sectors and reduce overall energy demand. The table below shows what is needed in the different sectors for limiting global heating to 1.5°C, and where the G20 stand.

	What is needed for the 1.5°C limit?	Where are G20 countries?
POWER	Global power generation needs to be decarbonised before 2050.	G20 emissions from the power sector increased on average by 1.6% in 2018. UK, France, Brazil managed to reduce emissions by 10-26%. China implemented progressive energy efficiency policies and played a key role in bringing down the costs for renewable energy. No G20 country has a 100% renewables strategy yet.
	Unabated coal needs to be phased out by 2030 in EU/OECD, by 2040 in rest of the world.	France, UK, Canada and Italy plan to phase out coal by 2023-2030. Indonesia, Turkey, South Africa, India and China plan to build additional coal power stations.
TRANSPORT	The share of low-carbon fuel in transport needs to increase to 60% by 2050.	Emissions from transport increased by 1.2% in 2018. Only Saudi Arabia and Mexico managed to reduce emissions two years in a row. Biofuels and electricity account for only 6% of the G20 transport fuel mix. Policies are mostly focussing on electrifying cars but not on shifting to sustainable transport modes.
	The last internal combustion engine should be sold in 2035.	France, UK, Canada and Japan have announced to phase out new fossil fuel cars by 2040/2050.
	Freight trucks need to be almost fully decarbonised by 2050.	No G20 country has a long-term strategy for decarbonising freight transport.
BUILDINGS	Global emissions from buildings need to be halved by 2030.	Emissions from buildings grew more than in any other sector (+4.1%) in 2018.
	New buildings must be zero energy by 2020 (OECD) or 2025.	Only EU countries aim to make new buildings near-zero energy in the early 2020s. Japan, Mexico, South Africa and South Korea aim for 2030-2050.
	The existing building stock needs annual deep renovation rates of 5% (OECD) or 3% by 2020.	Only the EU, France and Germany have long-term retrofitting strategies, but the speed is insufficient.
INDUSTRY	Global industrial CO_2 emissions need to be reduced by 65-90% from 2010 levels by 2050.	G20 emissions from industry increased by 3.1% in 2016. Only France, UK and Italy managed to reduce emissions since 2010.

Source: Based on the Brown to Green Report 2019

Shifting the trillions: How can G20 governments support the shift of finance from brown to green?

Governments can shape the transition of finance through financial policies and regulations, fiscal policy instruments, and through public finance.

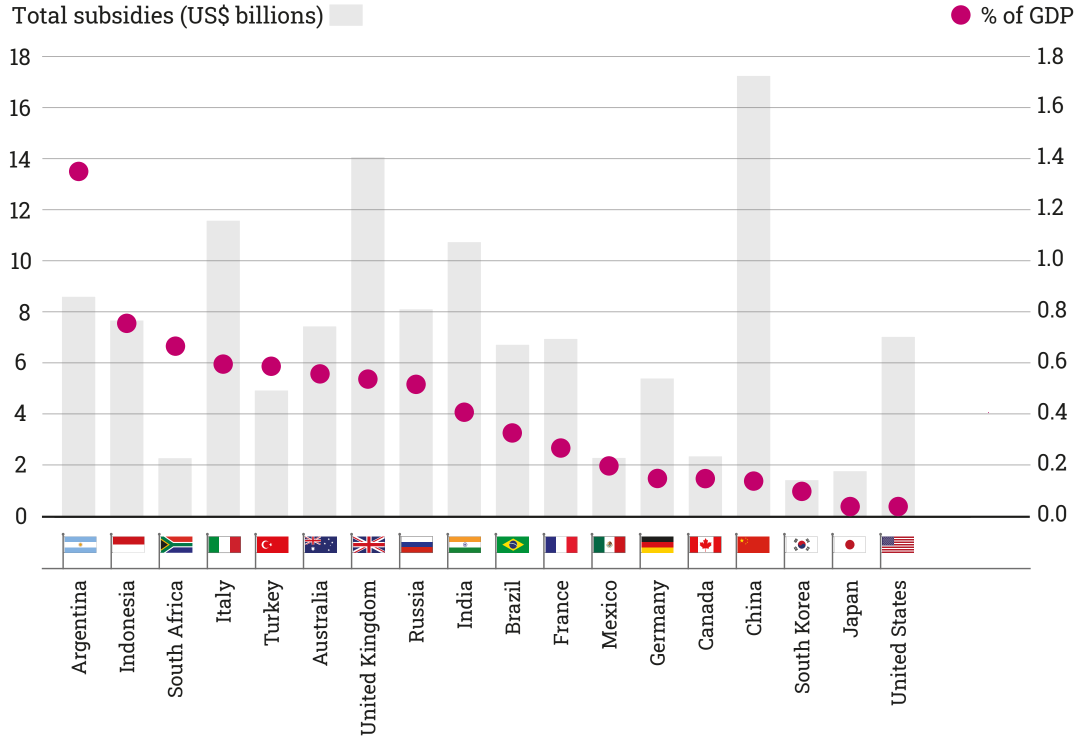
FINANCIAL POLICIES: G20 countries have already embarked on greening the financial system.

- All the G20 countries have started to discuss green financial principles;
- Brazil, France, South Africa, Canada and Indonesia have introduced policies that reduce climate related risks for the financial system;
- China, India and Japan set capital and liquidity requirements that favour green loans and investments.

These promising developments now need to be sustained, accelerated and transferred to other G20 countries. G20 countries need to ensure that both physical and transition-related climate risks are integrated into monitoring and prudential supervision of the finance sector. This includes disclosure requirements, such as recommended by the Task Force on Climate-related financial disclosure (TCFD).

FISCAL POLICIES: G20 countries pledged already back in 2009 to phase out fossil fuel subsidies. Argentina, Brazil, China, India, Indonesia, Italy, Japan, UK and the US have reduced but not abolished these subsidies – France and Turkey have even increased their subsidies. In other countries, they remain unchanged. Overall G20 countries' subsidies to fossil fuels still totalled US$ 127 billion in 2017. Notable is the increase in subsidies for natural gas infrastructure and production. Fossil fuel subsidies need to be phased out until 2025 at the very latest.

Fossil fuel subsidies in G20 countries, 2017



Source: OECD 2019, adapted from Brown to Green Report 2019

At the same time, 18 G20 countries have implemented or are in the process of implementing explicit carbon pricing schemes. The latest announcement came from the incoming G20 Presidency of Saudi Arabia. Almost all G20 countries already price carbon implicitly through energy taxes. However, many emissions are exempt or priced at only very low rates. A price of US$ 40-80/tCO2 by 2020, and of US$ 80-100 by 2030 are recommended for Paris alignment.

Both eliminating fossil fuel subsidies, and introducing carbon pricing, can generate substantial revenues that in turn can be redistributed to protect the poor and vulnerable, and to finance sustainable investments in infrastructure and public goods.

PUBLIC FINANCE: G20 governments can steer investment through their public finance institutions, such as development banks. G20 countries provided around US$ 27.6 billion for coal per year in 2016-2017 – most of which went to projects overseas. Renewables are already cheaper than coal in some areas or will become so in the next decade. Investment in coal will thus result in stranded assets, with significant economic and social costs. There is, however, a growing dynamic around restricting public spending on coal. The latest announcement in this regard came from the European Investment Bank which will end its financing of oil, gas, and coal projects after 2021.

Industrialised countries have promised in the context of the international climate negotiations to mobilise at least US$ 100 billion annually of climate finance from public and private for developing countries. Industrialised G20 countries have provided only US$ 31 billion per year in 2015-2016.

Which political signals are needed from G20 countries?

ARGENTINA	• Set a clear pathway for **renewable energy** by progressively eliminating fossil fuel subsidies and halting the exploitation of new oil and gas reserves. • Shift to sustainable agricultural practices and stop deforestation. • Support a modal shift in **passenger transport** modes providing alternatives such as electricity-powered public transport and non-motorised transport modes.
AUSTRALIA	• Develop a strategy and plan to phase out **coal** by 2030 and for 100% renewable electricity generation in the 2030s. • Adopt vehicle emissions standards and a target for the phase-out of sales of new fossil fuel **cars** by 2035 at the latest. • Adopt better **energy efficiency** standards for appliances and buildings, and policies to encourage energy management in industrial and commercial facilities.
BRAZIL	• Strengthen policies on **land use** emissions and increase monitoring to reach zero illegal deforestation as soon as possible. • Stop **subsidising fossil fuels**. • Strong investment plan to promote modal shifts and electrification of the **transport** sector.
CANADA	• Adopt a Clean Fuel Standard and enhance measures for zero-emission **vehicles**, including light and heavy-duty trucks. • Legislate a fair and equitable target to achieve **carbon neutrality** by 2050 at the latest. • The federal government needs to lead by example to encourage provinces to undertake deep energy retrofits of existing **buildings**.
CHINA	• Restrict investment in new coal to avoid risks on the investments. • Control the rate of electricity demand growth through stringent **efficiency** policies. • **Enhance the NDC** by announcing an earlier peak of energy-related CO2 emissions, ideally before 2025. • Continue ambitious commitment to renewable energy growth to reduce energy emissions.
EU	• Substantially increase the 2030 NDC target in order to drastically ratchet up action in the short term, and adopt a strategy for **net-zero** GHG emission by 2050 at the very latest. • Adopt goal of 100% sales of zero-emission personal **vehicles**, buses and delivery trucks by 2030. • Introduce a moratorium to stop expansion of **gas** infrastructure (pipelines and Liquefied Natural Gas (LNG) ports).
FRANCE	• Scaling up renovations to low-energy **building** standards to reach 500,000 houses per year as soon as possible. • Ramp up deployment of **renewables** to at least double the rate of energy production per year (including electricity and heat). • Review economic incentives to promote low-carbon **vehicles**, and ban the sale of fossil-fuel cars by 2040 at the latest (2030 would be 1.5°C compatible).
GERMANY	• Adopt a climate change act with a more ambitious 2030 target and a **coal** phase-out by 2030. • Raise the **carbon price** level and prolong a clear price signal beyond 2025. • Introduce mandatory **climate-related risks disclosure** no later than December 2020.

Source: Based on the Brown to Green Report 2019

INDIA	• Strengthen policy framework and manufacturing capacity to ensure long-term growth of the **renewable** energy sector. • Adopt **fuel efficiency** standards for all HDVs heavier than 3.5t. • Develop a roadmap for the phase-out of **coal subsidies** and ensuring a just transition for workers and communities.
INDONESIA	• Reduce the number of coal power plants and triple renewable energy share in the power sector by 2030. Improve the **efficiency** of household appliances and lighting in order to avoid a peak demand of more than 25 GW in 2030. • Enact a permanent **forest clearing moratorium** incl. primary and secondary forests, and peat restoration to save at least 66Mha of forest.
ITALY	• Phase out **fossil fuel subsidies** by 2025 at the latest. • Ban new fossil-fuel based light-duty **vehicles** by 2025, phase out emissions from freight transport by 2050, and develop a long-term strategy to shift from individual motorised transport to public and non-motorised transport. • Develop a strategy to achieve deep **building renovation** rates of 5% annually by 2020 to keep global warming below 1.5°C.
JAPAN	• Include the phasing out of **coal** in its next strategic energy plan. • Phase out **fossil fuel subsidies** by 2030 and introduce higher carbon pricing. Phase out **international finance for coal** to keep global warming below 1.5°C and reduce the risk of stranded assets.
MEXICO	• Adopt the target of **net-zero** emissions for 2050. • Adopt a strategy to phase out fossil fuel light-duty **vehicles**. • Decide to phase out **coal** by 2030.
RUSSIA	• Adopt a low-carbon development strategy for **100% renewable** energy by 2050 at the latest. • Introduce subsidies for energy efficiency renovation of **buildings** and develop a strategy to achieve deep renovation rates of 3% annually by 2020. • Phase out **fossil fuel subsidies** by 2025 at the latest.
SAUDI ARABIA	• Phase out fossil fuel **cars** by 2035. • Develop a long-term strategy for **renewable** energy that leads to net CO2 emissions in the power sector by 2050 building on the Saudi Vision 2030. • Conduct a peer review, together with another G20 country, and develop a strategy to phase out **fossil fuel subsidies** by 2025.
SOUTH AFRICA	• Halt new **coal** plants, cancel construction of units 5 and 6 at Kusile, and accelerate decommissioning of plants too costly to retrofit to meet air quality standards. • Prioritise construction of mass electrified **public transit** in urban centres by 2030. • Establish better mandatory **building** codes for new residential, and commercial buildings and shift to more efficient appliances.
SOUTH KOREA	• Commit to a **coal** phase-out no later than 2030. • Create better incentives and raise public awareness of **energy efficiency** policies. • Adopt goal of 100% sales of zero-emission cars by 2035.
TURKEY	• Ratify the **Paris Agreement** and adopt a 2050 low-emission strategy to prevent lock-in of sectors and maintain global warming at 1.5°C. • Decide to phase out **coal**, at the latest by 2030. • Establish energy efficiency standards for light-duty **vehicles** (LDVs) and heavy-duty vehicles, and ban new fossil-fuel based LDVs by 2035.
UNITED KINGDOM	• Establish a moratorium on current and new permits for North Sea oil and **gas** exploration and extraction. • Adopt a goal of 100% sales of zero-emission **cars** by 2030 and ban further airport expansions. • Develop a strategy to achieve deep **building** renovation rates of 5% annually and future-proof construction of new social housing and government buildings.
UNITED STATES	• Adopt a goal of **climate neutrality** by 2050 at the latest. • Adopt a goal of 100% sales of emission free cars by 2035. • Aggressively support the growth of renewable generation capacity, using best practice from several states, such as California and Texas.

Source: Based on the Brown to Green Report 2019

Key pressure points in 2020

2020 will be an important year for climate policy. First, the Paris Agreement requests countries to update their 2030 targets (NDCs) by 2020. Most likely, countries will present their updated NDCs at the climate negotiations in **Glasgow (COP26, 9-20 November 2020)**. The presidency of COP26 will be in the hands of the United Kingdom, which has been positioning itself as a climate leader over the last year and has announced to focus the COP on sustainable finance.

Three G20 countries have already indicated their intention to make their targets more ambitious (Argentina, Mexico, South Africa, see: https://www.climatewatchdata.org/2020-ndc-tracker), others have so far only indicated to update their target without promising it to be more ambitious (EU, South Korea). In the coming months, G20 governments will prepare internally for the NDC updates, providing an important moment for influencing the outcome of those internal debates.

Second, countries are also invited to present their long-term strategy by 2020. In this context, it is notable that the concept of carbon neutrality is increasingly establishing itself as a long-term target. Thirdly, 2020 is also the year by which industrialised countries promised to jointly mobilise US$ 100 billion in climate finance annually.

The **G7 and G20 summits** have in the past sent decisive signals to the general climate negotiations process, sometimes helping to overcome deadlocks or bringing momentum to the negotiation table. However, 2020's presidencies of the G7 and G20 would positively surprise the global community if they invested the time necessary for finding adequate responses to the global climate crisis. Prior to the G7 presidency of the US (G7 Summit 10-12 June 2020) President Trump has started the formal withdrawal process from the Paris Agreement in November 2019. And the G20 presidency is with the Kingdom of Saudi Arabia (G20 Summit 21/22 November 2020), the world's top oil exporter. Therefore, other G20 countries could help create an international momentum by building a frontrunner coalition and presenting their new and more ambitious NDCs in advance of COP26.

Other relevant occasions:

- Coalition of Finance Ministers for Climate Action (March 2020, London, UK): the coalition formed in 2018 to spur climate action through fiscal policies and public finance. Eight G20 countries are members.
- IUCN Summit (11-19 June 2020 in Marseille, France): Nature-based solutions have received growing attention during 2019 - this is likely to continue in 2020. With ongoing strong deforestation in Brazil and Indonesia and dying forests in e.g. Germany due to extensive heat periods, it is crucial to strengthen carbon sinks.
- BRICS Summit (Summer 2020 in Russia): GHG emissions in BRICS countries are growing strongly. These countries are decisive in determining outcome of COP26.
- EU-China Summit in 2020 (12-14 September 2020 in Leipzig, Germany): EU and China might use this occasion to make announcements on NDC enhancements and Sustainable Finance – these are top items on agenda; it is important for these top economies to move ahead.
- Convention on Biological Diversity (CBD) COP15 (5-10 October 2020 in Kunming, China): will adopt the post-2020 global biodiversity framework, Theme "Ecological Civilization: Building a Shared Future for All Life on Earth".
- World Bank and International Monetary Fund Annual Meeting (16-18 October 2020, Washington D.C., USA): multilateral development banks and IMF use these annual meetings for making important announcements, such as climate targets.

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It is a full decade since the G20 states first declared they would end fossil fuel subsidies, but these words have still not been backed up with actions. The G20 cannot be laggards on climate action. They need to pioneer ambitious action and reflect this in the revision of their NDCs.

"

MARY ROBINSON
of the Elders at the F20 Reception
during COP25

"

G20 countries must take leadership for climate action and a just transition. Their ambitions are far off-track for solving the climate crisis. F20 is part of the solution for national climate action in the G20 countries to implement the Paris Agreement and the 2030 Agenda.

"

KLAUS MILKE
F20 Chair

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