

# BROWN TO GREEN

The G20 Transition Towards A Net-Zero Emissions Economy  
Jakarta, November 19, 2019



# 14 PARTNERS FROM G20 COUNTRIES

Partners:



Funders:



Supported by:



based on a decision of the German Bundestag

Data Partners:



## What people think about this report?

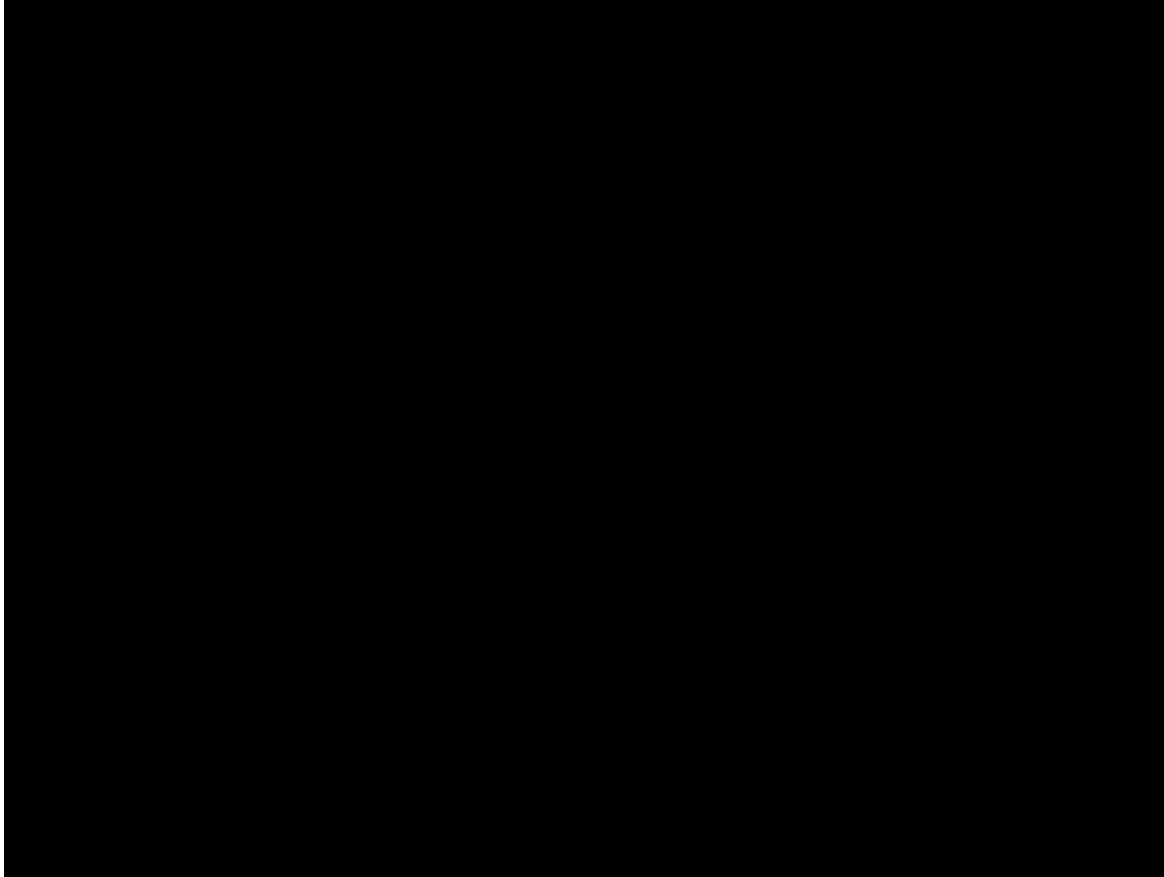


“The Brown to Green Report is instrumental in understanding, where Indonesia stands in comparison to other G20 countries and contributes to stimulating the national debate about climate change and necessary action.”

### **RACHMAT WITOELAR**

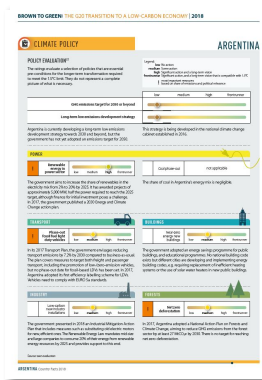
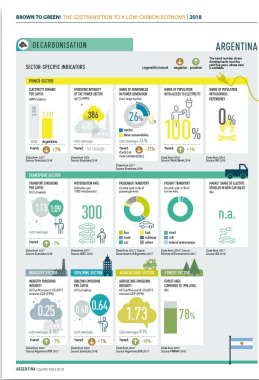
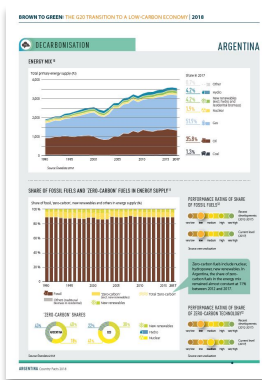
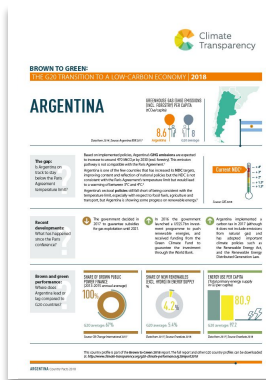
President's Special Envoy for Climate Change,  
former State Minister of Environment of Indonesia

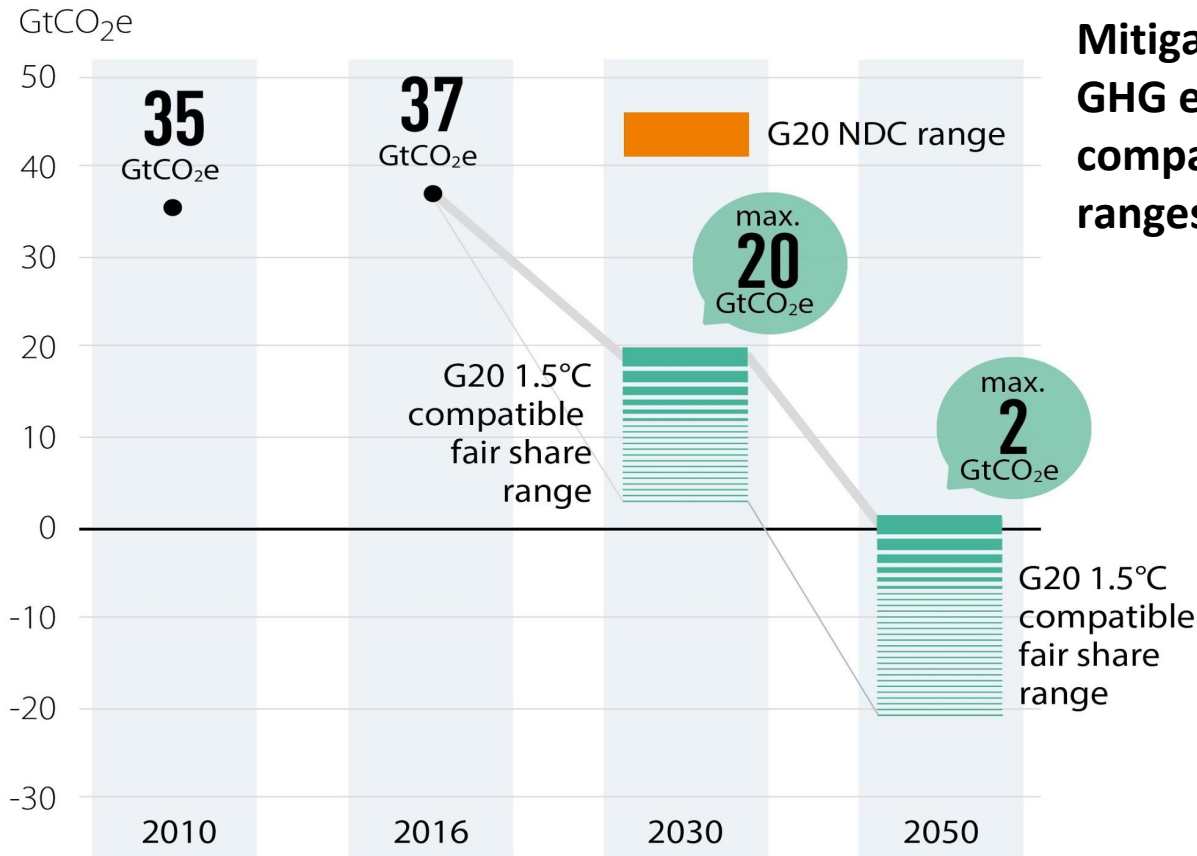
## Why we need to put attention to G20 countries?



# AMBITIOUS CLIMATE ACTION THROUGH COUNTRY COMPARISONS

- 80 indicators on emissions, decarbonization, policy, finance, vulnerability and just transition
- Most recent trends until 2018
- Reconciling international and national data

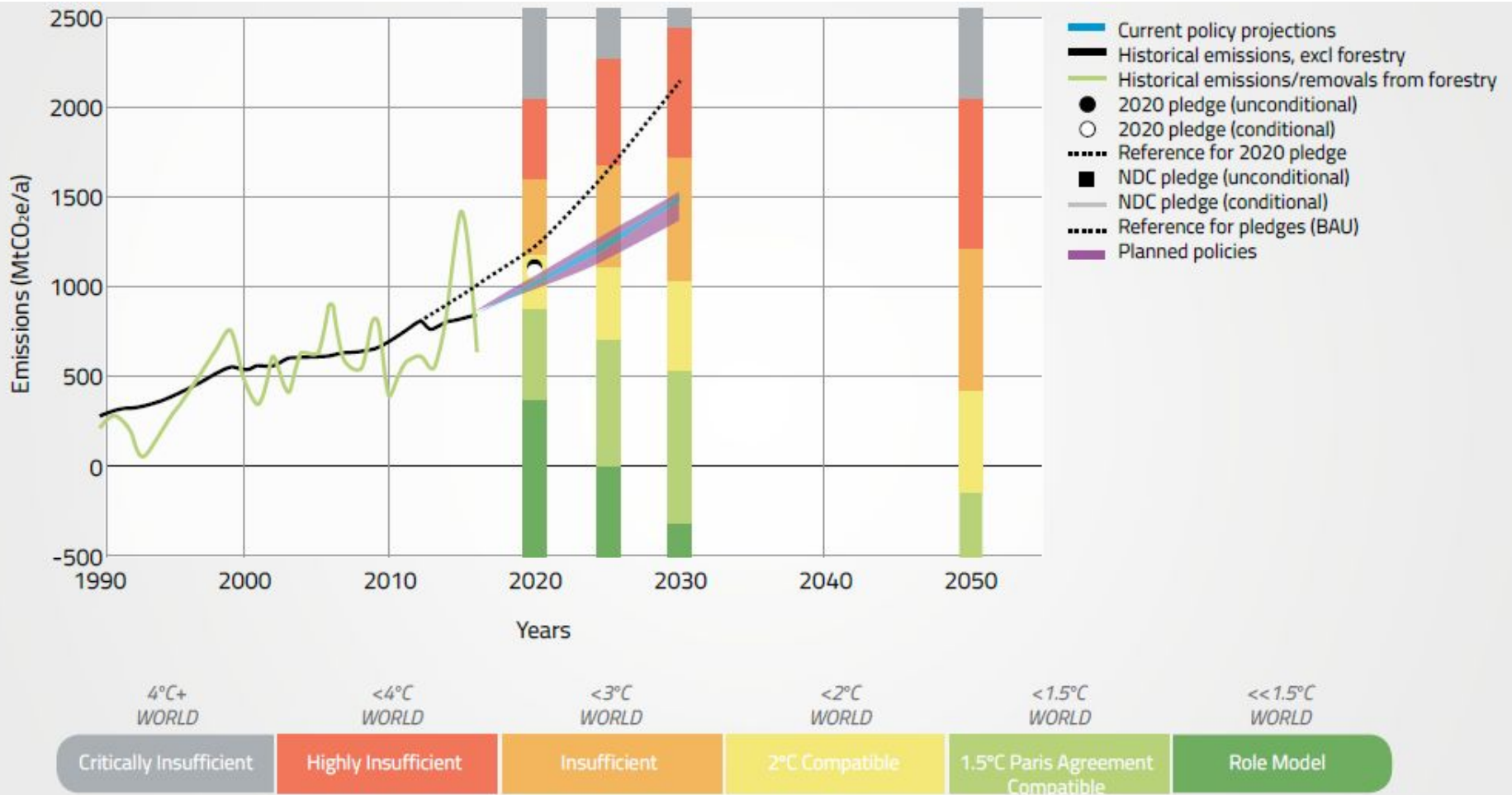


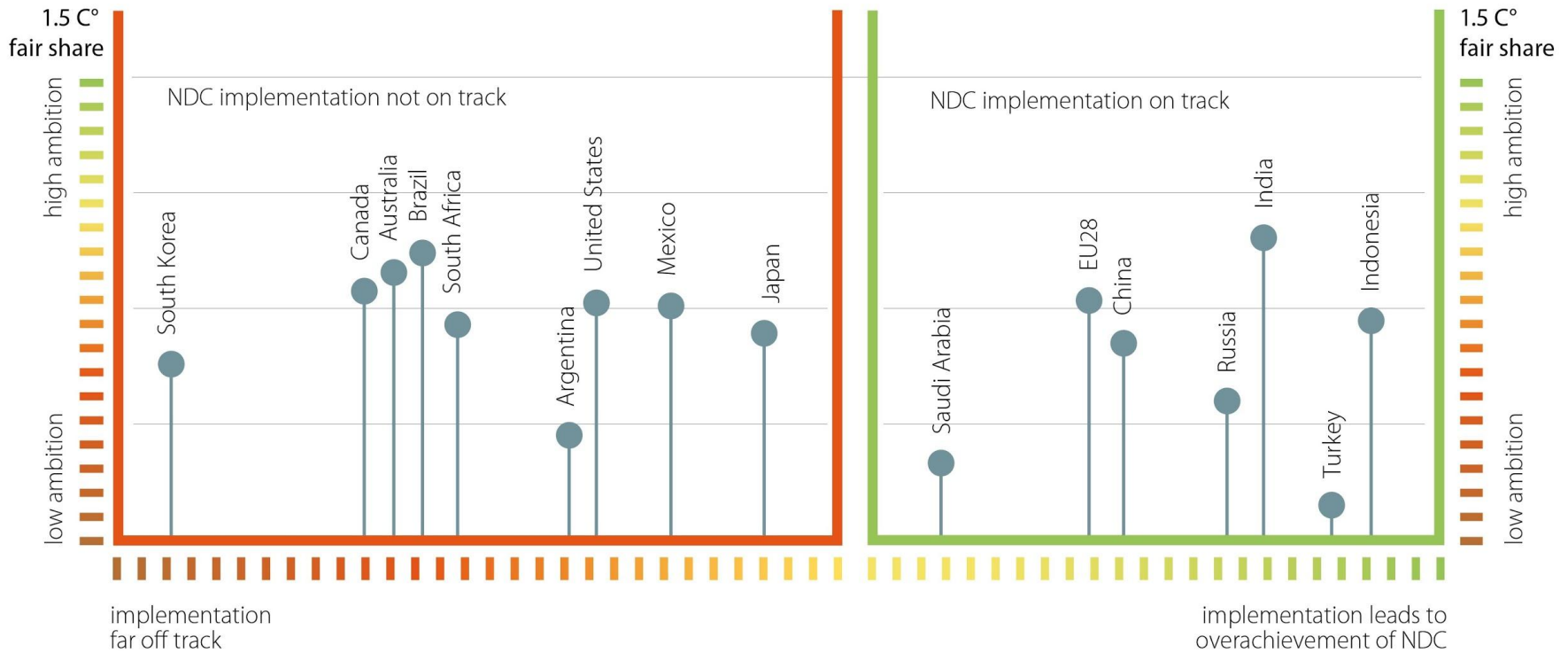


**Mitigation gap between current GHG emissions and 1.5oC compatible fair share emission ranges**

\*Maximum and minimum values for G20 in aggregate were derived by simple addition of values for individual countries and EU28 (not adding individual EU28 countries). Under CAT methodology, an equity range for a group of countries would be calculated specifically, taking into account the relationships and circumstances of countries within that group. The 2030 NDC range includes the US's 2030 emissions projections based on current policies as the country only has a 2025 NDC target. The country has decided to withdraw from the Paris Agreement.

## Indonesia's NDC Analysis to Paris Agreement Achievement





## Ambition related to G20 countries' 1.5 fair share ranges and current status of implementation

For comparability, Brazil's 2030 indicative NDC has been used. The US's NDC target is for 2025 only. This graph excludes LULUCF emissions due to data uncertainties, and for the purpose of comparability and consistency between countries. Taking LULUCF emissions into account, the rating in the graph changes for Indonesia. It is then likely to not be on track to implement its NDC, while it does not change for Argentina and Brazil.

Source: Own evaluation based on Climate Action Tracker 2019.



# MAIN FINDINGS of GLOBAL REPORT 2019

## Adaptation

- **Extreme weather events lead to around 16,000 deaths and economic losses of US\$ 142 bio in G20 countries every year**
- **Limiting global temperature increase to 1.5°C reduces negative impacts across sectors in G20 countries by over 70%.**
- **All G20 countries have adaptation plans with the exception of Saudi Arabia**




















## Mitigation

- G20 energy-related CO<sub>2</sub> emissions increased in 2018 by 1.8% due to high economic growth and greater fossil fuel energy supply.
- G20 countries need to cut their current GHG emissions by at least 45% in 2030 (below 2010 levels) to be on the track of 1.5°C.
- Most G20 countries have no or only insufficient long-term emission strategies.

## Finance

- G20 countries, excl Saudi Arabia, provided US\$ 127 bio in subsidies to coal, oil and gas in 2017 compared to US\$ 248 billion in 2013.
- A total of 18 G20 countries have implemented or are in the process of implementing carbon taxes.
- G20 public institutions financed coal and coal fired power production internationally at US\$ 17 bio and domestically at US\$ 11 bio on average in 2016-2017

## National adaptation strategies of G20 countries

	Document name	Year	Agriculture	Biodiversity	Coastal areas & fishing	Education & research	Energy & industry	Finance & insurance	Forestry	Health	Infrastructure	Tourism	Transport	Urbanism	Water	M&E process
Argentina	 <i>Adaptation plan under development</i>															
Australia	 National Climate Resilience and Adaptation Strategy	2015	X	X	X		X		X	X	X			X	X	yes
Brazil	 National Adaptation Plan to Climate Change	2016	X	X			X		X	X	X		X	X	X	yes
Canada	 PAN-Canadian Framework on Clean Growth and Climate Change	2016			X	X				X	X					yes
China	 National Strategy for Climate Change Adaptation	2013	X	X	X	X	X	X	X	X	X	X		X	X	yes
European Union	 EU Strategy on Adaptation to Climate Change	2013	n/a													yes
France	 Second National Adaptation Plan 2018-2022 (NAP-2)	2018	X	X	X	X		X	X	X	X	X	X		X	yes
Germany	 German Strategy for Adaptation to Climate Change (DAS)	2008	X	X	X		X	X	X	X	X	X	X	X	X	n/a
India	 National Action Plan on Climate Change	2008	X	X	X	X	X			X	X				X	n/a
Indonesia	 National Action Plan for Climate Change Adaptation (RAN-API)	2014	X	X	X	X	X	X	X	X	X		X	X	X	yes
Italy	 National Climate Change Adaptation Strategy	2015	X	X	X		X		X	X	X	X	X		X	yes
Japan	 National Plan for Adaptation to the Impacts of Climate Change	2015	X		X	X	X	X	X	X	X	X	X	X	X	yes
Mexico	 Mexico's National Strategy on Climate Change (ENCC)	2013	X	X	X	X	X		X	X	X				X	yes
Russia	 <i>Adaptation plan to be published this year</i>															
Saudi Arabia	 <i>No adaptation policy</i>															
South Africa	 Draft National Climate Change Adaptation Strategy	2018	X	X	X	X	X	X	X	X	X	X	X		X	yes
South Korea	 Korea's Adaptation Strategy to Climate Change	2011	X	X	X	X	X		X	X	X				X	yes
Turkey	 Turkey's National Climate Change Adaptation Strategy and Action Plan	2012	X	X	X	X	X	X	X	X		X	X	X	X	n/a
United Kingdom	 National Adaptation Programme and the Third Strategy for Climate Adaptation Reporting	2018	X	X	X	X	X	X	X	X		X	X	X	X	yes
United States	 U.S. Environmental Protection Agency Climate Change Adaptation Plan	2014	X		X	X	X		X	X			X		X	yes

Source: Own evaluation

## MAIN FINDINGS of GLOBAL REPORT 2019

### Adaptation

- Extreme weather events lead to around 16,000 deaths and economic losses of US\$ 142 bio in G20 countries every year
- Limiting global temperature increase to 1.5°C reduces negative impacts across sectors in G20 countries by over 70%.
- All G20 countries have adaptation plans with the exception of Saudi Arabia

### Mitigation

- **G20 energy-related CO2 emissions increased in 2018 by 1.8% due to high economic growth and greater fossil fuel energy supply.**
- **G20 countries need to cut their current GHG emissions by at least 45% in 2030 (below 2010 levels) to be on the track of 1.5°C.**
- **Most G20 countries have no or only insufficient long-term emission strategies.**

### Finance

- G20 countries, excl Saudi Arabia, provided US\$ 127 bio in subsidies to coal, oil and gas in 2017 compared to US\$ 248 billion in 2013.
- A total of 18 G20 countries have implemented or are in the process of implementing carbon taxes.
- G20 public institutions financed coal and coal fired power production internationally at US\$ 17 bio and domestically at US\$ 11 bio on average in 2016-2017

# MAIN FINDINGS OF GLOBAL REPORT 2019

## Emission number

### Power

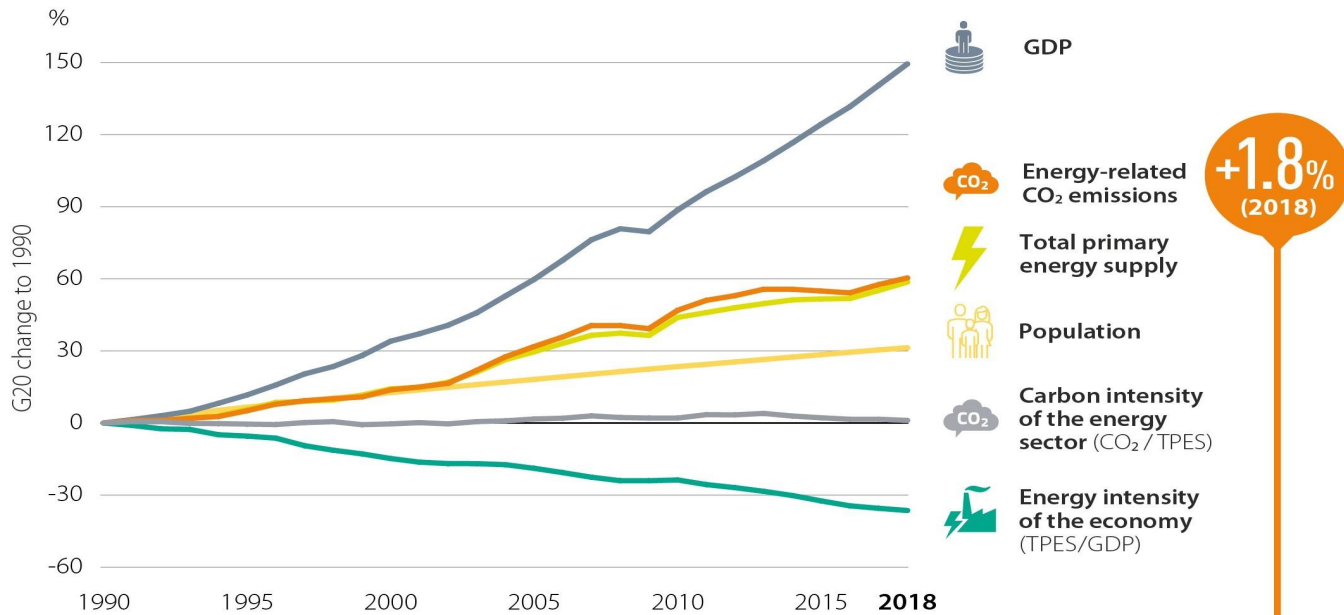


In 2018, emissions in the power sector incl electricity and heat production, increased by +1.6%, similar to the annual average of the last ten years.

### Transport





Transport emissions of the G20 continued to increase in 2018 (+1.2%). To keep global warming below 1.5°C, the share of low-carbon fuels in the G20 transport fuel mix (6%) would need to increase roughly ten times by 2050.



**+3.7%**   
**G20 GDP (2018)**  
 2017: +3.8%  
 2005-2016: +3.4%

**+2.2%**   
**G20 energy supply (2018)**  
 2017: +2.2%  
 2005-2016: +1.4%

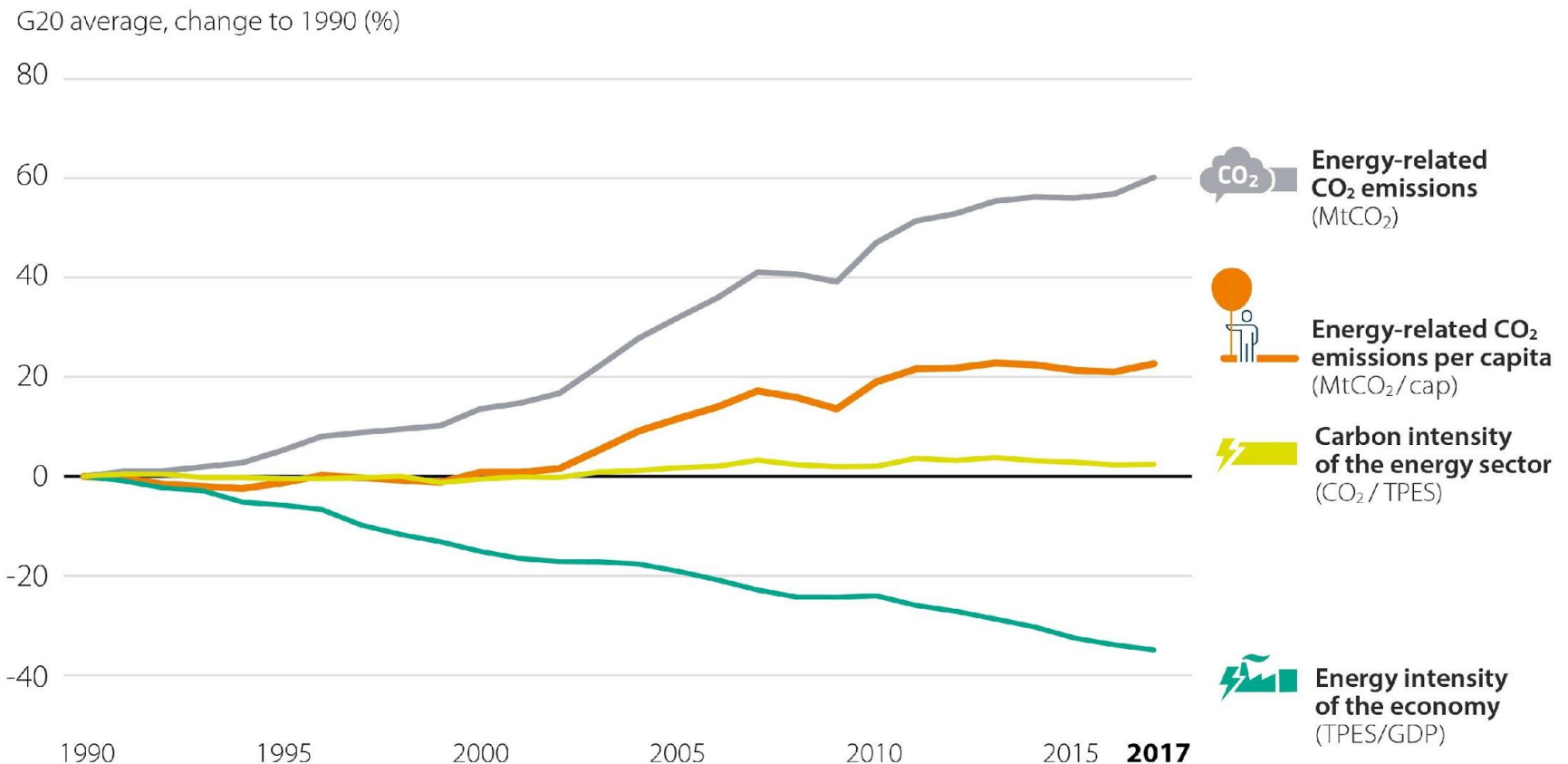
**+0.7%**   
**G20 population (2018)**  
 2017: +0.7%  
 2005-2016: +0.8%

**-0.5%**   
**G20 carbon intensity of the energy sector (2018)**  
 2017: 0%  
 2005-2016: 0%

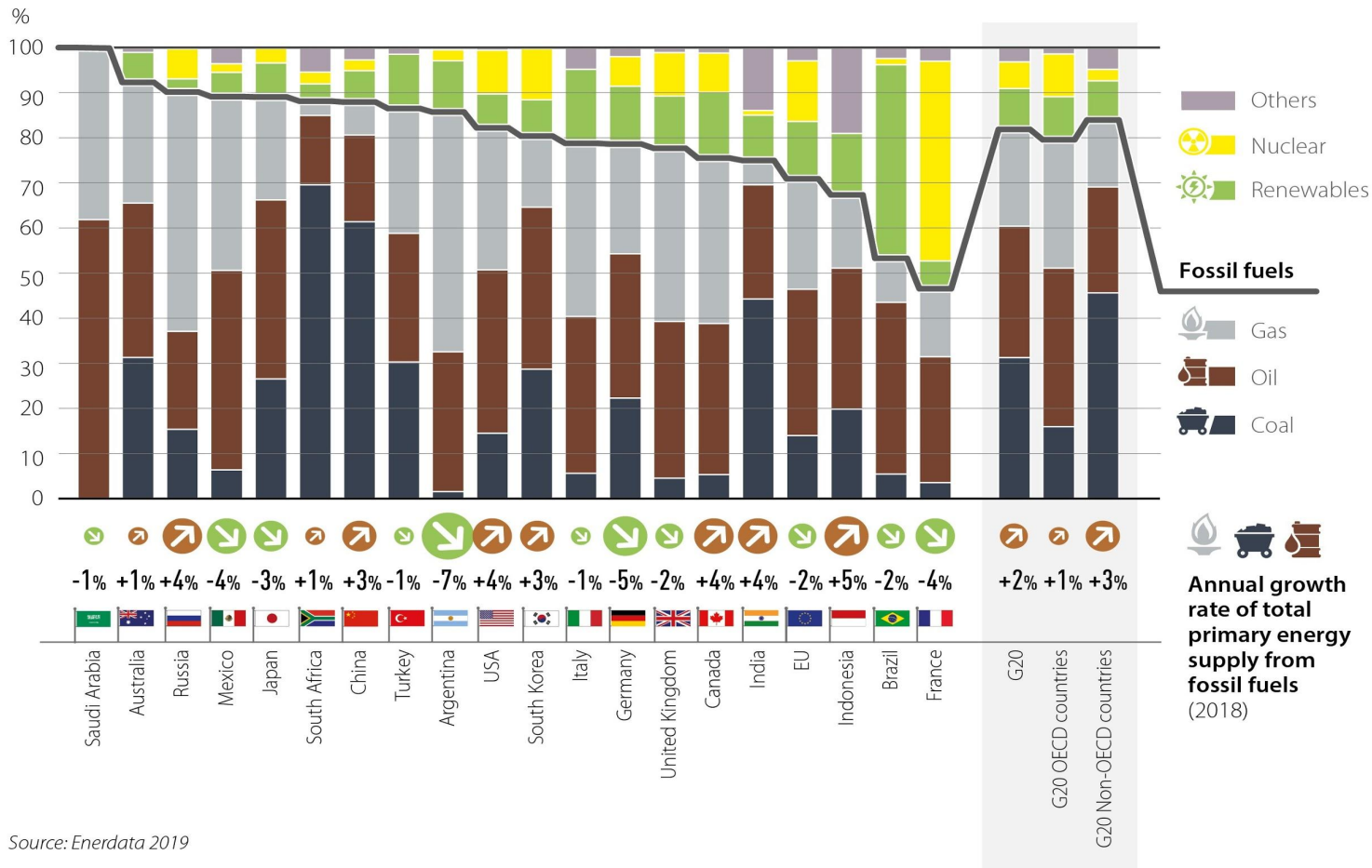
**-1.4%**   
**G20 energy intensity of the economy (2018)**  
 2017: -1.6%  
 2005-2016: -1.9%

**G20 CO<sub>2</sub> emissions 2017: +2.2%; 2005-2016: +1.4%**

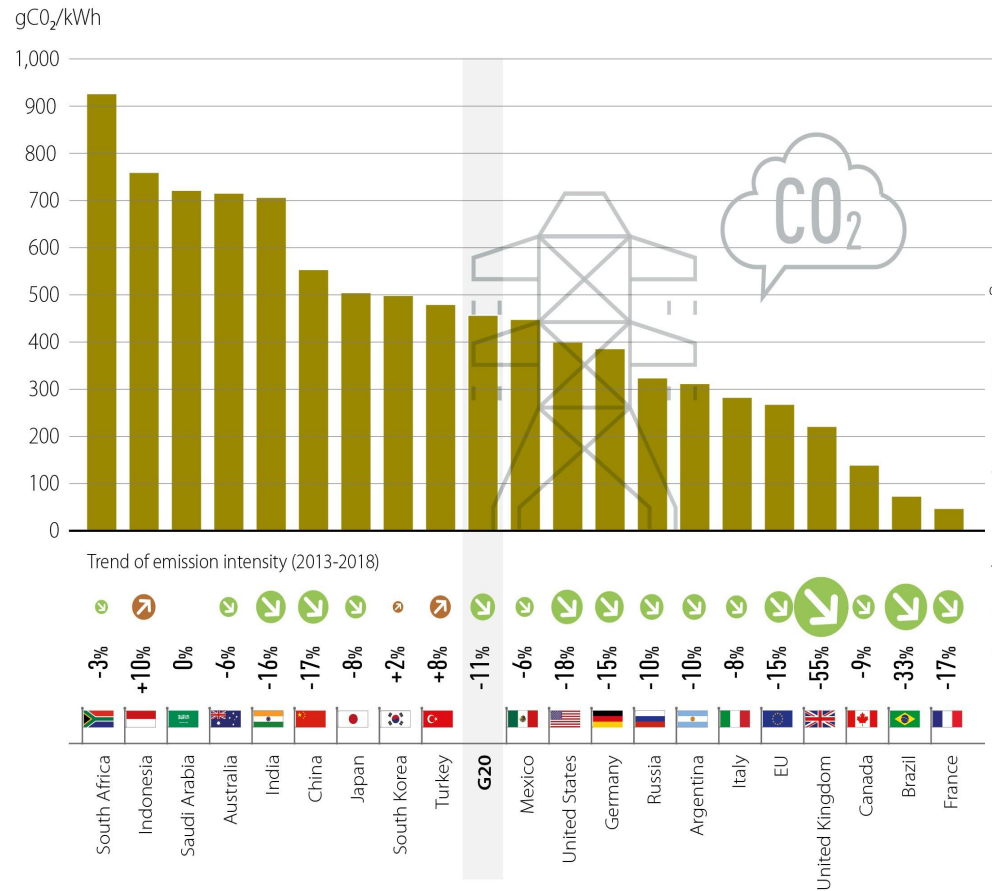
# Energy is not getting cleaner: greater energy supply boosted all fossil fuels with gas in the lead.



# 82% of the G20 energy mix comes from fossil fuels.

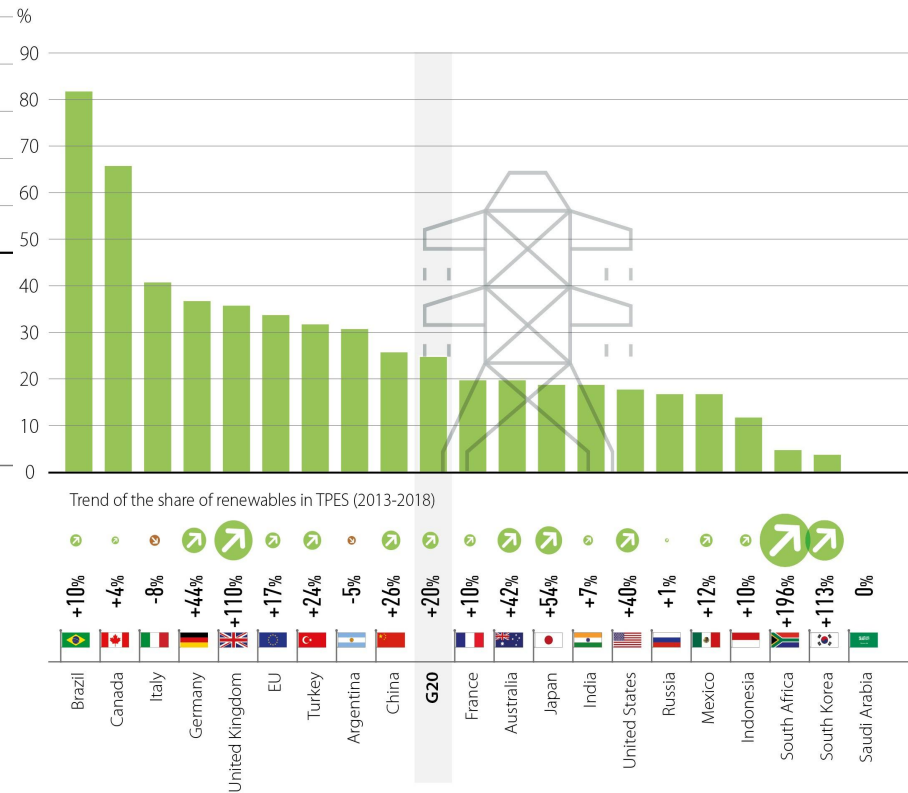


Source: Enerdata 2019








## Emissions intensity of the power sector in the G20, 2018






## Share of renewables in power generation (incl. large hydro) in the G20, 2018





## Power sector: Policy rating

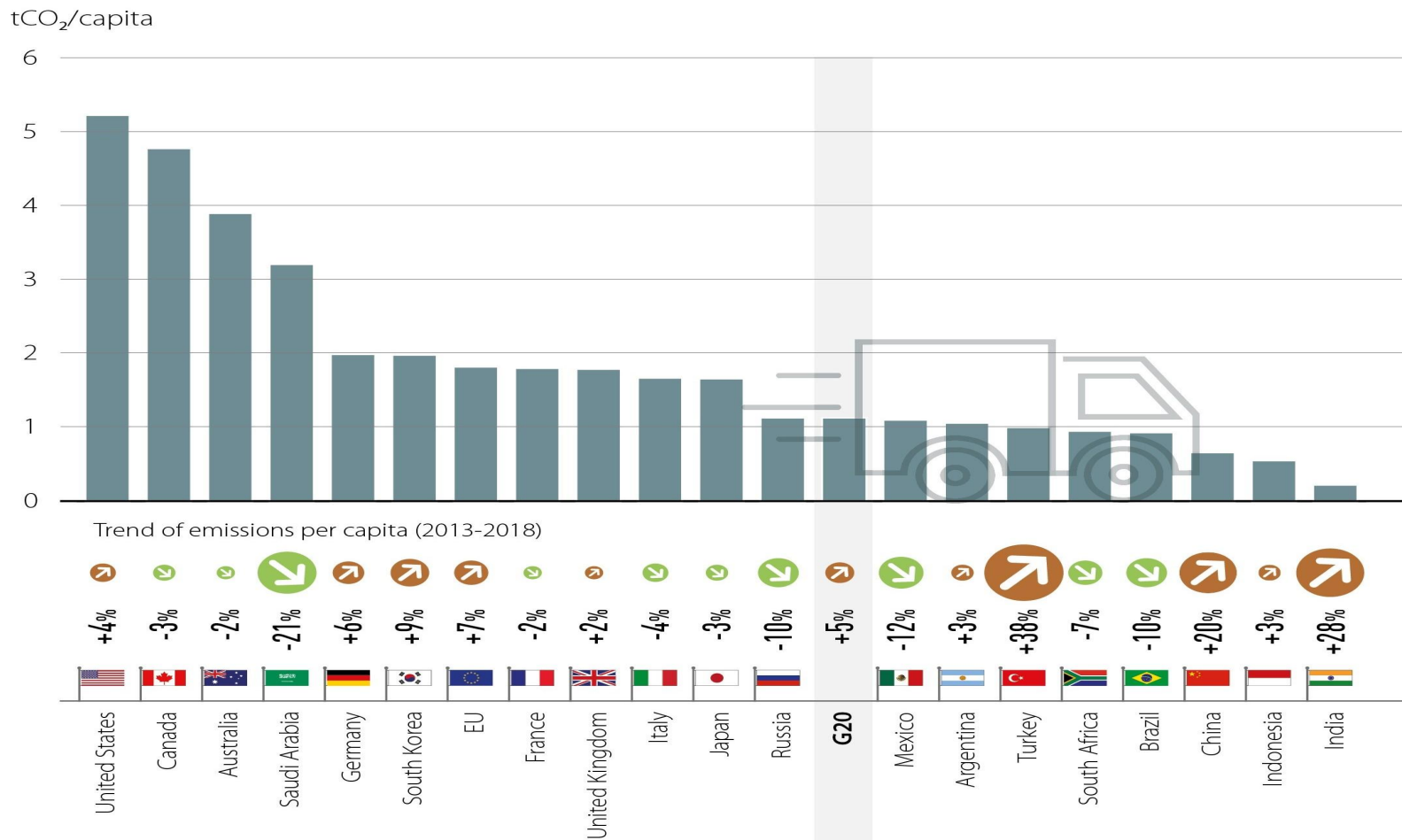
	 low	 medium	 high	 frontrunner
	No policy to increase the share of renewables	Some policies	Policies and longer-term strategy/target to significantly increase the share of renewables	Short-term policies + long-term strategy for 100% renewables in the power sector by 2050 in place
<b>Renewable energy in power sector</b>	Australia Canada Mexico US	Argentina China EU France India Indonesia Italy Japan Russia Saudi Arabia South Africa South Korea Turkey UK	Brazil Germany	






	 low	 medium	 high	 frontrunner
	No target or policy in place for reducing coal	Some policies	Policies + coal phase-out decided	Policies + coal phase-out date before 2030 (OECD and EU28) or 2040 (rest of the world)
<b>Coal phase-out in power sector</b>	Australia India Indonesia Japan Mexico Russia South Africa South Korea Turkey US	Brazil China EU	Germany	Canada France Italy UK

## How can the G20 countries get to a 1,5oc world?






- G20 OECD countries need to phase out coal-fired electricity generation no later than 2030 and G20 non-OECD countries no later than 2040.
- G20 countries need to have 100% zero carbon electricity in 2050.
- The incentives are: improving public health, reducing costs and economic growth opportunities , preventing stranded assets, gaining energy independence and maximizing fiscal benefits, increasing energy access






## Trend of transport emissions per capita (excl. aviation in the G20) 2013-2018



	 low	 medium	 high	 frontrunner
	No policy for reducing emissions from light duty vehicles	Some policies such as energy/emissions performance standards or bonus/malus support	Policies + national target to phase out fossil fuel LDVs	Policies + Ban on new fossil-based LDVs by 2035
<b>Phase-out of fossil fuel cars</b>	Australia Indonesia Russia	Argentina Brazil China EU Germany India Italy	Mexico Saudi Arabia South Africa South Korea Turkey US	Canada France Japan UK

## Transport sector policy rating











	 low	 medium	 high	 frontrunner
	No policy	Some policies such as energy/emissions performance standards or support	Policies + strategy to reduce absolute emissions from freight transport	Policies + innovation strategy to phase-out emissions from freight transport by 2050
<b>Decarbonise heavy duty vehicles</b>	Australia Indonesia Mexico Russia Saudi Arabia South Africa Turkey	Argentina Brazil Canada China EU France Germany	India Italy Japan South Korea UK US	

	 low	 medium	 high	 frontrunner
	No policy	Some policies such as support programmes to shift to rail or non-motorised transport)	Policies + longer-term strategy	Policies + longer-term strategy consistent with 1.5°C pathway
<b>Modal shift in (ground) transport</b>	Australia Russia	Argentina Brazil Canada China EU France Germany India Indonesia	Italy Japan Mexico Saudi Arabia South Africa South Korea Turkey UK US	






## How can the G20 countries get to a 1,5oc world?

- G20 countries need to ban the sale of new fossil fuel vehicles by 2035 at the latest.
- G20 countries need to develop and implement a long-term strategy to phase out emissions from freight transport by 2050.
- All G20 countries need to develop and implement long-term strategies to support a modal shift towards non-motorised transport modes and electricity-powered public transport. Policies to shift consumption patterns are equally necessary.
- All G20 countries need to increase efforts to phase out CO<sub>2</sub> emissions from aviation by reducing subsidies to the sector, taxing jet fuel, and reducing air transport.

## Building Sector: Policy Rating






	 low	 medium	 high	 frontrunner	
	No policies	Some policies such as building codes, standards or fiscal/financial incentives for low emission options	Policies + national strategy for near-zero energy buildings	Policies + national strategy for all new buildings to be near zero-energy by 2020 (OECD) or 2025 (non-OECD)	
<b>Near zero-energy new buildings</b>	Argentina China Indonesia Russia	Australia Brazil Canada India	Saudi Arabia Turkey US	Japan Mexico South Africa South Korea	EU France Germany Italy UK
	 low	 medium	 high	 frontrunner	
	No policies	Some policies such as building codes, standards or fiscal/financial incentives for low emissions options	Policies + retrofitting strategy	Policies + strategy to achieve annual deep renovation rates of 5% (OECD) or 3% (non-OECD by 2020)	
<b>Retrofit of existing buildings</b>	Argentina Australia Brazil India	Indonesia Mexico Saudi Arabia	Canada China Italy Japan Russia	South Africa South Korea Turkey UK US	EU France Germany

## Industry Sector: Policy Rating

	 low	 medium	 high	 frontrunner
	Mandatory energy efficiency policies cover less than 25% of industrial energy use	Mandatory energy efficiency policies cover 26–50% of industrial energy use	Mandatory energy efficiency policies cover 51–100% of industrial energy use	Policies + strategy to reduce industrial CO <sub>2</sub> emissions by 65-90% from 2010 levels by 2050
<b>Energy efficiency in industry</b>	Argentina Australia Brazil Canada EU France Germany Italy	Mexico Russia Saudi Arabia South Africa South Korea Turkey UK US	India Indonesia	China Japan

Source: Own evaluation

## Land use Sector: Policy Rating

	 low	 medium	 high	 frontrunner
	No policy or incentive to reduce deforestation in place	Some policies: Incentives to reduce deforestation or support schemes for afforestation /reforestation in place	Policies + national target for reaching netzero deforestation	Policies + national target for reaching zero deforestation by 2020s or for increasing forest coverage
<b>(Net) zero deforestation</b>	Australia Canada	Argentina Brazil EU France Germany Indonesia Italy	Japan Russia South Africa South Korea Turkey UK US	China Mexico
				India



# MAIN FINDINGS of GLOBAL REPORT 2019

## Adaptation





















- Extreme weather events lead to around 16,000 deaths and economic losses of US\$ 142 bio in G20 countries every year
- Limiting global temperature increase to 1.5°C reduces negative impacts across sectors in G20 countries by over 70%.
- All G20 countries have adaptation plans with the exception of Saudi Arabia

## Mitigation

- G20 energy-related CO<sub>2</sub> emissions increased in 2018 by 1.8% due to high economic growth and greater fossil fuel energy supply.
- G20 countries need to cut their current GHG emissions by at least 45% in 2030 (below 2010 levels) to be on the track of 1.5°C.
- Most G20 countries have no or only insufficient long-term emission strategies.

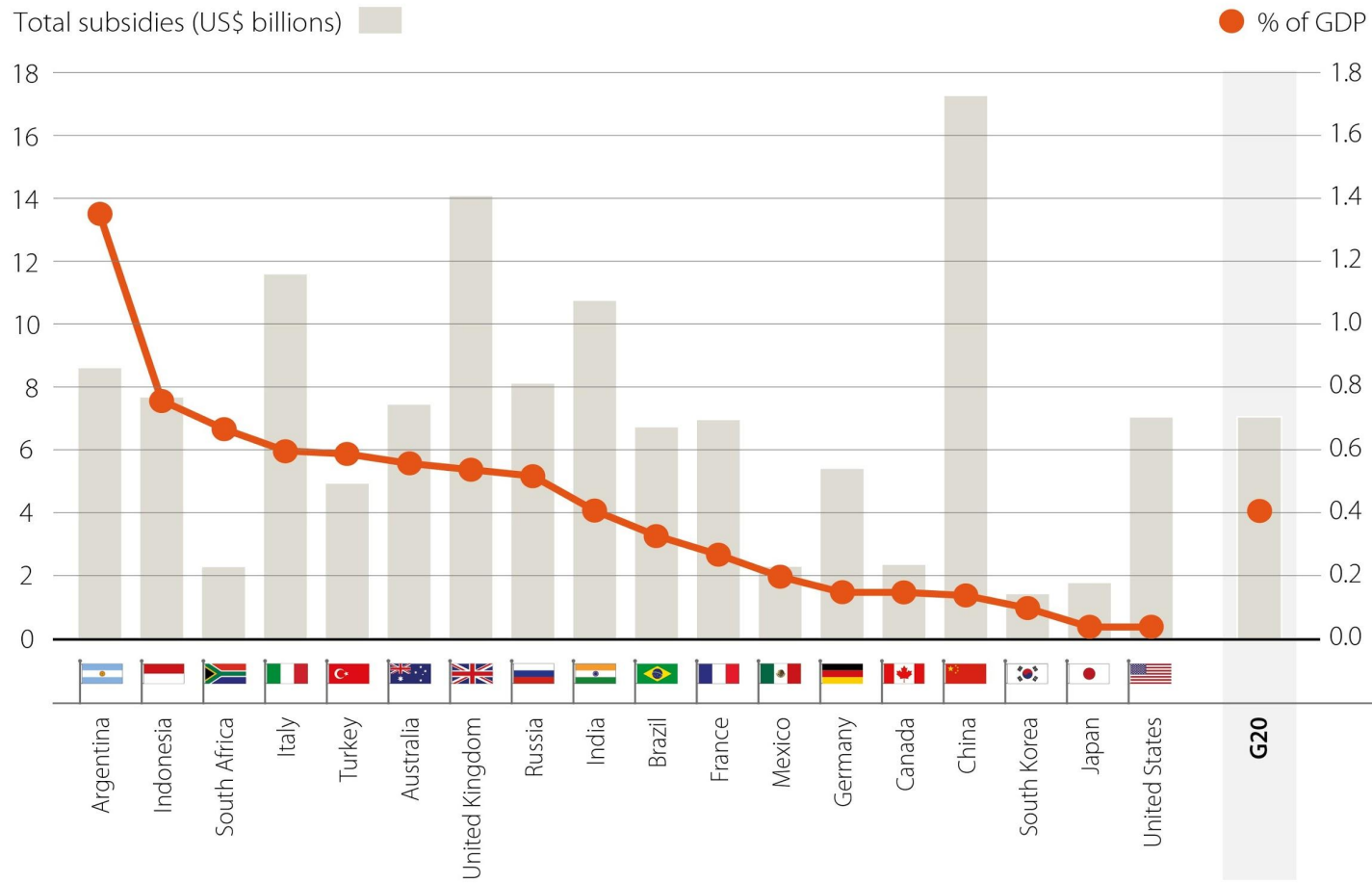
## Finance

- **G20 countries, excl Saudi Arabia, provided US\$ 127 bio in subsidies to coal, oil and gas in 2017 compared to US\$ 248 billion in 2013.**
- **A total of 18 G20 countries have implemented or are in the process of implementing carbon taxes.**
- **G20 public institutions financed coal and coal fired power production internationally at US\$ 17 bio and domestically at US\$ 11 bio on average in 2016-2017**

Category	Green financial principles	Enhanced supervisory review, risk disclosure and market discipline		Enhanced capital and liquidity requirements			
		Instruments	Climate risk disclosure requirements	Climate-related risk assessment and climate stress test	Liquidity instruments	Lending limits	
Objective	General discussion/process of implementation of principals aligning prudential and climate change objectives in the national financial architecture	Disclose the climate-related risks to which financial institutions are exposed	Evaluate the resilience of the financial sector to climate shocks	Mitigate and prevent market illiquidity and maturity mismatch	Limit the concentration of carbon-intensive exposures	Incentivise low-carbon-intensive exposures	Limit misaligned incentives and canalise credit to green sectors
Argentina	 Yes	none	none	none	none	none	none
Australia	 Yes	none	none	none	none	none	none
Brazil	 Yes	mandatory	none	none	none	none	none
Canada	 Yes	under discussion	voluntary	none	none	none	none
China	 Yes	none	none	none	none	mandatory	none
European Union	 Yes	none	none	none	none	none	none
France	 Yes	mandatory	under discussion	none	none	none	none
Germany	 Yes	under discussion	under discussion	none	none	none	none
India	 Yes	none	none	mandatory	none	mandatory	none
Indonesia	 Yes	none	mandatory	none	under discussion	none	none
Italy	 Yes	none	none	none	none	none	none
Japan	 Yes	under discussion	none	voluntary	none	none	none
Mexico	 Yes	none	none	none	none	none	none
Russia	 Yes	none	none	none	none	none	none
Saudi Arabia	 Yes	none	none	none	none	none	none
South Africa	 Yes	voluntary	none	none	none	none	none
South Korea	 Yes	none	none	none	none	none	none
Turkey	 Yes	none	none	none	none	none	none
United Kingdom	 Yes	under discussion	under discussion	none	none	none	none
United States	 Yes	none	none	none	none	none	none

## Financial policies and regulations in G20 countries supporting a brown to green transition

## Fossil fuel subsidies in G20 countries, 2017



## How can the G20 countries get to a 1,5oc world?

- G20 countries should ensure the **integration of both physical and transition-related climate risks into monitoring and prudential supervision** of the finance sector.
- All G20 countries need to **phase out fossil fuel subsidies** by 2025 at the latest.
- All G20 countries need to introduce **carbon pricing Schemes**
- All G20 countries need to **end public finance for fossil fuels**
- All G20 countries are advised to include information on **aligning financial flows in their NDCs and LTS**



## Recent developments



The 2019-2028 electricity plan of state-owned electricity company PLN raised the 2025 target for the share of coal in the power mix by 0.2 percentage points compared to the previous plan.



A new decree on electric vehicles (EVs) (August 2019) creates the legal basis for battery production, local content requirements, charging stations and tax incentives.



In October 2019, the Government established an agency to manage revenues from carbon trading and other funds related to climate change mitigation.



## Key opportunities for enhancing climate ambition

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.

# Thank you for your attention

Contact point in Indonesia:

Fabby Tumiwa

Institute for Essential Services

Reform (IESR)

[fabby@iesr.or.id](mailto:fabby@iesr.or.id)

Erina Mursanti

Institute for Essential Services

Reform (IESR)

[erina@iesr.or.id](mailto:erina@iesr.or.id)

