

# JAPAN'S G20 PRESIDENCY: INNOVATION FOR CLIMATE ACTION

BRIEFING PAPER

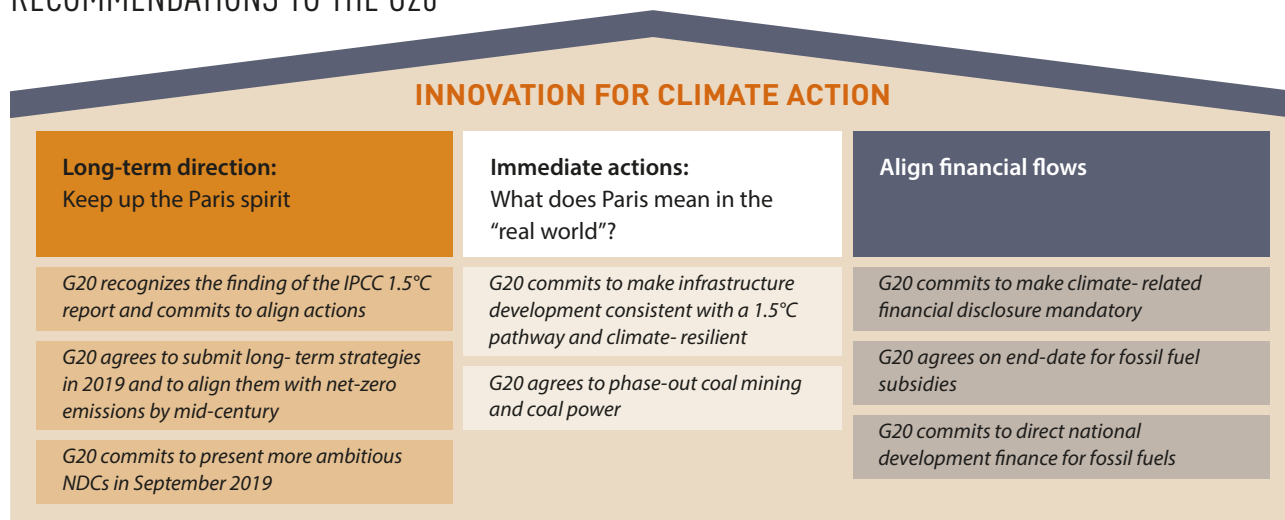
MAY 2019

## EXECUTIVE SUMMARY

- The G20 has a strong **economic interest** in limiting global warming to 1.5°C due to climate change's negative impact on total economic activity, the productivity of the workforce and the smooth functioning of financial markets.
- The G20 countries are **key for driving this global transition** since they account for approximately 80% of global GHG emissions, 85% of global GDP and 75% of foreign direct investment flows. Over the last decade, the G20 has regularly expressed support for the international climate negotiations and has established its own climate initiatives for translating international climate policies into financial and economic policies. However, the G20 countries are not on track: they need to follow up on past commitments and take further steps to accelerate the transition.
- Japan has declared **disruptive innovation for climate action** a priority of its 2019 G20 presidency. Past G20 work on innovation has only focused on research and development finance as well as best practice sharing. To drive low-carbon and climate-resilient innovation, however, the G20 needs to take a wider look at the enabling conditions and incentives. These include long-term directions, immediate actions and aligning financial flows with those directions and signals.

This paper proposes **eight actions** through which the G20 could foster innovation for climate action.

## RECOMMENDATIONS TO THE G20



## 1. INTRODUCTION: WHY SHOULD THE G20 CARE ABOUT CLIMATE CHANGE?

According to the IPCC Special Report on 1.5°C, global CO<sub>2</sub> emissions need to decrease to net zero by 2050 in order to keep global temperature rise below 1.5°C. The report notes that exceeding that limit would substantially increase risks of e.g. extreme heat events, sea level rise or species loss.<sup>1</sup> The G20 countries have an economic interest in limiting warming to 1.5°C as well as the capability – to varying degrees – to induce the required transition to low-carbon, climate-resilient economies.

Global warming beyond 1.5°C is likely to have disastrous effects on the global economy. In the year 2017 alone, weather- and climate-related disasters created USD 320 billion in losses, of which USD 223 billion occurred in G20 countries alone.<sup>2</sup> It is thus not surprising that the Global Risk Report 2019 of the World Economic Forum identified extreme weather events and failing climate policies as the top risks.<sup>3</sup> While not all weather- and climate-related disasters can be attributed to climate change, the latter will alter the frequency, intensity, duration, timing and location of sudden- and slow-onset climate-related hazards.<sup>4</sup> These physical risks of climate change can have a significant impact on the wider economy, affecting labour, trade, public budgets and the insurance sector.

Even without further climate action, the G20 countries will need to invest USD 64 trillion in infrastructure from now until 2040 (USD 85 trillion globally) – this is more than the current infrastructure stock.<sup>5</sup> If the G20 countries keep investing in fossil fuels, the goal

of limiting global warming to 1.5°C will no longer be feasible, and there is a substantial risk of creating stranded assets – estimated at USD 12 trillion until 2035.<sup>6</sup> In contrast, ambitious climate action could create global economic benefits of USD 26 trillion by 2030 compared to a business-as-usual scenario, e.g. through subsidy reforms.<sup>7</sup> In other words, taking the correct decisions could lead to a boost for economic development in the G20.

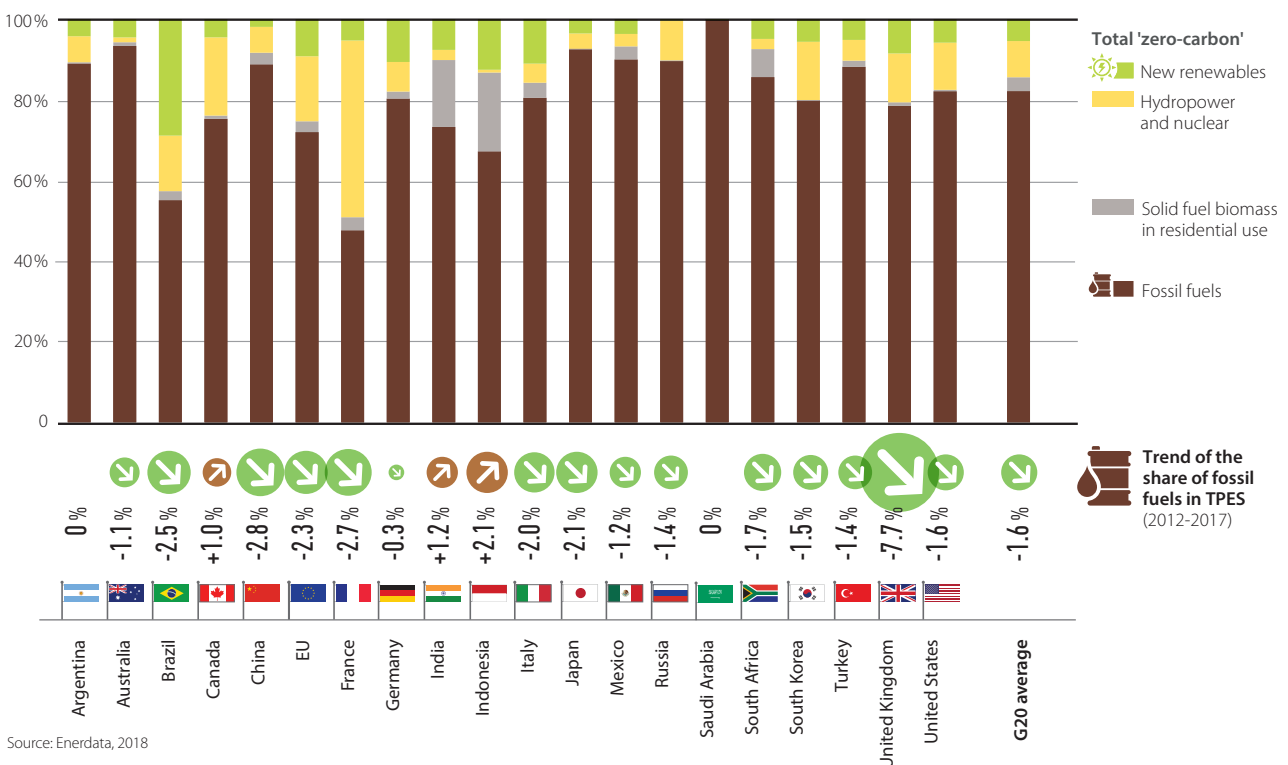
The good news is that the G20 has the capability to achieve a turnaround of current global GHG emissions trends: first of all, G20 countries are responsible for approximately 80% of global CO<sub>2</sub> emissions.<sup>8</sup> They thus have a dominant impact on the level of global emissions.

Furthermore, G20 countries are also leading in the promotion of fossil fuels, as they derive 82% of their total energy supply from coal, oil and gas.<sup>9</sup> Many G20 countries are not only large consumers of fossil fuels but also significant producers. A decision on their part to exit fossil fuels would therefore have a major impact on global fossil fuel consumption.

Finally, the G20 countries produce around 85% of the global gross domestic product<sup>10</sup>, account for two thirds of global outward foreign direct investment flows<sup>11</sup>, and are the most important shareholders of multilateral development banks<sup>12</sup>. Their decisions influence the direction of financial flows, technological innovation, lifestyle choices and business models worldwide.

This paper presents several options how the G20 could advance global climate policy under the current Japanese G20 presidency.

**Share of fossil fuels and 'zero-carbon' fuels in total primary energy supply (TPES)**



Source: Enerdata, 2018

## 2. CLIMATE CHANGE ON THE G20 AGENDA

The G20 was launched in the 1990s as a forum of finance ministers and central bank governors. While the G20 was primarily geared towards fostering economic growth and financial stability, the G20 Finance Ministers had already recognised climate change as a global challenge back in 2006. Since G20 was elevated to the level of Heads of State and Governments (Leaders) in 2008, the G20 has opened its agenda to a broader range of issues, including climate change as a stand-alone item.

The G20 is now organised in two tracks, and climate plays a role in both: The Finance track, which deals with the traditional core issues of the G20, has been discussing, among others, climate finance. The Sherpa track, which is coordinated directly by the G20 leaders, established a dedicated working group on climate and energy in 2017, which became a stand-alone working group in 2018. Additionally, G20 presidencies have routinely invited other ministers (e.g. energy, health, development) to address climate-related issues. For example, energy ministers have opened the subject of fossil fuel subsidies.

The G20 leaders have included statements on climate change in each of the final communiqués of their annual summits, in order to:

- **support the international climate negotiations:** The G20 unites players from a vast spectrum of international climate negotiations. Their joint statements can help to overcome deadlocks and bring positive spirit to the negotiation table. This was especially important in the run-up to the Paris summit in 2015.
- **translate the international climate negotiations into economic and financial policies:** The G20 has discussed how to implement decisions taken in the international climate negotiations. For example, the G20 Climate Finance Study Group (2012-2016) examined possible paths for promoting public climate finance. The 2017 Hamburg Action Plan on Climate and Energy offers the most comprehensive account of how 19 of the G20 countries (with the exception of the US) agreed to cooperate in implementing the Paris Agreement.<sup>13</sup>

- **establish its own climate initiatives:** the G20 has also been an agenda-setter, e.g. by requesting international organizations to conduct specific research or by establishing its own initiatives. A prominent example is the 2015 launch (under Turkish presidency) of the Task-Force for Climate-related Financial Disclosure (TCFD) which has developed guidelines for company reporting on climate risks.

However, the G20 faces a general problem of continuity, transparency and accountability. Successive G20 presidencies have launched numerous initiatives on climate issues, but following presidencies often failed to follow up on the respective commitments and initiatives.<sup>14</sup> The G20 lack an official site where outcome documents are made publicly available. And while the G20 publishes a growing number of accountability reports on financial stability, anti-corruption and development<sup>15</sup>, an official tracking of past promises, such as the 2009 commitment to phase-out fossil fuel subsidies is lacking.

This discontinuity applies in particular to the issue of climate change where international political dynamics have been changing. For example, US-President Trump and Brazilian President Bolsonaro have positioned themselves against the Paris Agreement. Consequently, there has been no official follow-up to the 2017 Hamburg Action Plan on Climate and Energy for Growth in the 2018 Leader's communiqué.<sup>16</sup> Leaders only stated that they had exchanged experiences, "acknowledging that each country may chart its own path to achieving a low emission future."<sup>17</sup>

### 3. PROMOTING INNOVATION FOR CLIMATE UNDER THE JAPANESE PRESIDENCY

In 2019, Japan is hosting the G20 for the first time. Japan has not yet officially published its priorities for the leaders' summit in June 2019. However, it is a promising sign that Japan has – for the first time in G20 history – invited environmental ministers to convene with energy ministers in mid-June of this year.

Japanese Prime Minister Abe has promised to “exert strong leadership in discussions aimed towards resolving global issues such as climate change [...]”<sup>18</sup>, and has named “disruptive innovation” a decisive topic if the world is to reach net zero emissions by 2050.<sup>19</sup> Indeed, all types of innovation – whether technological, social, process- or governance-level innovation – are required for the phase-out of GHG emissions

In 2016, the G20 adopted an Innovation Action Plan under the Chinese presidency. The listed actions, however, did not go beyond a general commitment to stimulate dialogue and best practice sharing.<sup>20</sup> Over the last two years, the G20 discussions on innovation have focused mainly on the digital economy.<sup>21</sup>

In Hamburg, the G20 leaders recognised that innovation plays a role for decarbonisation<sup>22</sup>, and most G20 members are members of the Mission Innovation, a global initiative aiming to double research development and demonstration (R,D&D) finance.<sup>23</sup> However, public R,D&D investment has only a limited impact on green innovation, while other policy instruments create stronger incentives.<sup>24</sup>

To drive low-carbon, environmentally sound and climate-resilient innovation, the G20 needs to focus on the policy environment and incentives:<sup>25</sup>

- reliable, long-term directions because companies and people need to know where to invest:<sup>26</sup> renewed commitment to combating climate change, signal to speed up in recognition of 1.5°C IPCC report and NDC enhancement
- clear short- and mid-term actions to make the transformation tangible for companies and individuals: infrastructure decisions and coal phase-out
- redirection of financial flows to create incentives for companies and people to pursue the transformation:<sup>27</sup> climate-risk disclosure, price signals, targeted RD&D support (e.g. of energy storage rather than coal)
- and knowledge exchange to share costs and increase spillovers.<sup>28</sup>

#### Recommendations to the G20

INNOVATION FOR CLIMATE ACTION		
Long-term direction: Keep up the Paris spirit	Immediate actions: What does Paris mean in the “real world”?	Align financial flows
<i>G20 recognizes the finding of the IPCC 1.5°C report and commits to align actions</i>	<i>G20 commits to make infrastructure development consistent with a 1.5°C pathway and climate-resilient</i>	<i>G20 commits to make climate-related financial disclosure mandatory</i>
<i>G20 agrees to submit long-term strategies in 2019 and to align them with net-zero emissions by mid-century</i>	<i>G20 agrees to phase-out coal mining and coal power</i>	<i>G20 agrees on end-date for fossil fuel subsidies</i>
<i>G20 commits to present more ambitious NDCs in September 2019</i>		<i>G20 commits to direct national development finance for fossil fuels</i>

## 4. LONG-TERM DIRECTIONS: KEEP UP THE PARIS SPIRIT – AND SAY IT

### G20 recognises the finding of the IPCC 1.5°C report and commits to align actions

The 1.5°C special report is the most up-to-date and comprehensive reference document on the impacts of climate change and on how to remain within the 1.5°C limit. In Buenos Aires, the G20 leaders already took note of the IPCC report in their final communiqué.<sup>29</sup> In his speech at the World Economic Forum in January 2019, Japanese Prime minister Abe outlined issues for the G20, referring to the 1.5°C report and highlighting the need to reach net zero CO<sub>2</sub> emissions by around 2050.

In order to induce the rapid decline in CO<sub>2</sub> emissions that is required to keep warming below 1.5°C, G20 countries need to draw clear lessons from the report and communicate this decision to economic actors.

#### Recommendations:

- The G20 recognises that the level of greenhouse gas emissions in 2030 should be 25-30 GtCO<sub>2</sub>e in order to hold the increase in global average temperature to 1.5°C above pre-industrial levels and net zero CO<sub>2</sub> by 2050.
- The G20 commits to align G20 actions with a 1.5°C compatible pathway.

Environment  
Ministers →  
Leaders

### G20 countries agree to submit long-term strategies in 2019 and to align them with net-zero emissions by mid-century

Long-term emission strategies are an important tool for each country to align short- and mid-term national actions with the long-term 1.5°C limit. These strategies can offer long-term certainty to investors and businesses, ensure a just and coordinated transition, and enable G20 countries to remain one step ahead of a potential climate-induced financial crisis.

The Paris Agreement states that all countries should prepare long-term GHG development strategies. 19 of the G20 members recalled in Hamburg (2017) that these strategies should be submitted to the UNFCCC by 2020, and that they would share best practices.<sup>30</sup> During the 2018 Buenos Aires summit, countries shared their practices but did not make any commitments.<sup>31</sup> Therefore, the 2019 Osaka summit would be the ideal opportunity to signal to the world that the G20 is making fast progress in the development of long-term strategies, and will be the first to submit them to the UNFCCC.

Six G20 countries have already submitted a strategy to the UNFCCC; nine countries are in the final stage of developing their strategies, including Japan. None of the submitted strategies, however, envisages a net-zero target for 2050 in line with the 1.5°C IPCC report.









































#### Recommendations:

- The G20 countries commit to submitting their long-term strategies by the end of 2019 or early 2020 latest.
- The G20 countries commit to align their long-term strategies with net zero emissions by mid-century, and include interim and sectoral targets

Climate Sustainability  
Working Group →  
Environment Ministers  
→ Leaders

Or: Energy Transition  
Working Group →  
Energy Senior Officials

## Development of long-term strategies in the G20 countries

Country	Status	Comments
 Canada	 Submitted to UNFCCC	No 2050 target; exploring options for -80% from 1990 levels
 France	 Submitted to UNFCCC	2050 target: -75% from 1990 levels; France is among those EU countries calling for a net zero EU target
 Germany	 Submitted to UNFCCC	2050 target: -80 to -95% from 1990 levels
 Mexico	 Submitted to UNFCCC	2050 target: -50% from 2000 levels
 United Kingdom	 Submitted to UNFCCC	2050 target: 80% reduction from 1990 levels; UK announced to strengthen 2050 target; exploring "net zero" as an option
 United States	 Submitted to UNFCCC	No 2050 target; exploring options for -80% from 1990 levels
 Argentina	 In preparation	Has established a participatory process for addressing energy and land use.
 China	 In preparation	
 India	 In preparation	
 Indonesia	 In preparation, expected by end 2019	Three low-carbon development scenarios have been established to support the development of the mid-term national development planning 2020-2024
 South Korea	 In preparation, expected by end 2020	Draft expected in 2019
 EU	 In preparation, expected by end 2019	The EU adopted a 2050 roadmap as early as 2011 which included a 80-95% reduction target for 2050, but is currently preparing a new strategy, probably with an adjusted 2050 target.
 South Africa	 In preparation, expected by end 2019	A draft of South Africa's Low-Emission Development Strategy 2050 was published in December 2018, under public consultation until January 2019.
 Japan	 In preparation, expected in May or June 2019	Japan has already published a "basic concept" of its strategy; the draft strategy is on the table of the government cabinet.
 Australia	 No action	
 Russia	 No action	
 Brazil	 No action	The Brazilian Forum on Climate Change adopted a long-term strategy in 2018, and submitted it to former president Michel Temer in December 2018. The proposal was to completely decarbonise Brazilian economy by 2060. It is still unclear whether President Bolsonaro will follow up on this proposal.
 Saudi Arabia	 No information	
 Turkey	 No information	
 Italy	 No information	

## G20 commits to present more ambitious NDCs at UNSG Summit

The IPCC 1.5°C report finds that global emissions need to be roughly halved by 2030 – covering approximately 80% of global GHG emissions, the G20 countries play a decisive role. The Paris Agreement requires all countries to present their 2030 (or 2025) climate targets in form of Nationally Determined Contributions (NDCs), which are to be resubmitted every five years. With every renewed submission, the NDCs are intended to reflect an increase in ambition level. With the first round of NDCs submitted in 2014/15, the next round of updates is due in 2020. Analysis by the Climate Action Tracker suggests that none of the G20's NDCs is currently compatible with the 1.5°C limit. In order stay below this limit, the G20 countries as a whole would need to halve the emission targets currently envisaged in their NDCs.

While during the G20 summits in Hamburg and Buenos Aires, 19 of the G20 members (without the US) committed to the full implementation of the Paris Agreement<sup>32</sup>, the G20 has so far remained silent on the issue of NDC enhancement. However, during the last climate conference in Katowice eight G20 members joined the “High Ambition Coalition”, stating that they would enhance the ambition levels of their NDC targets (Argentina, Canada, EU, France, Germany, Italy, Mexico, United Kingdom).<sup>33</sup>

UN Secretary General Guterres has called for a world leader summit in September 2019 to “come with [...] concrete, realistic plans to enhance their nationally determined contributions by 2020”.<sup>34</sup> Presenting enhanced NDCs that are in line with the findings of the IPCC 1.5°C report and their long-term strategies would be the clearest signal that G20 countries could send to economic actors. The collective presentation of enhanced NDCs at the Guterres summit could create considerable momentum and encourage other countries to follow their example.

## Climate Action Tracker rating of NDCs

Country	Rating of NDC
India	2°C compatible
Australia	Insufficient
Brazil	Insufficient
EU	Insufficient
Mexico	Insufficient
Argentina	Highly insufficient
Canada	Highly insufficient
China	Highly insufficient
Indonesia	Highly insufficient
Japan	Highly insufficient
South Africa	Highly insufficient
South Korea	Highly insufficient
Russia	Critically insufficient
Saudi Arabia	Critically insufficient
Turkey	Critically insufficient
USA	Critically insufficient

Source: Climate Action Tracker 2019; no rating for individual EU member states due to the submission of a joint EU NDC.

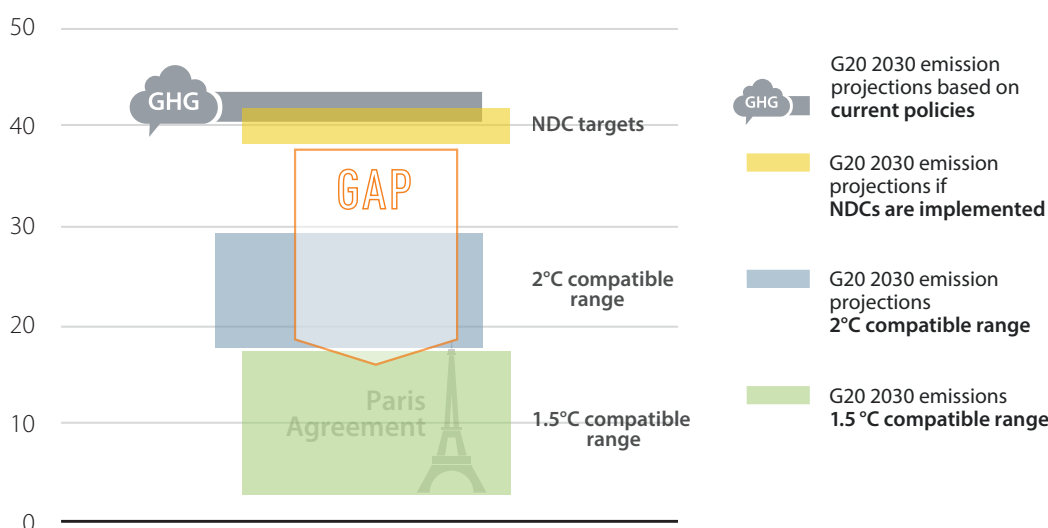
### Recommendations:

→ The G20 commits to present enhanced NDCs at the UN Secretary General summit in September 2019.

Environment Ministers → Leaders

## Gap between NDC targets and 1.5°C Paris Agreement temperature limit

GHG emissions range (excl. LULUCF) (GtCO<sub>2</sub>e)



Source: CAT, 2018

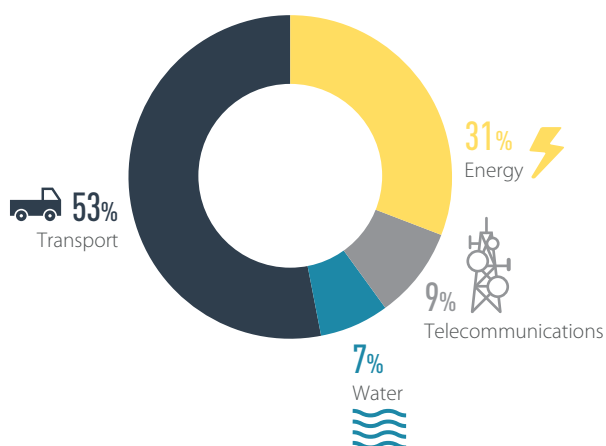


## 5. IMMEDIATE ACTIONS: WHAT DOES PARIS MEAN IN THE “REAL WORLD”?

### G20 commits to making infrastructure development both consistent with a 1.5°C pathway and climate-resilient

Infrastructure is a key item on the G20 agenda due to aging infrastructure in developed countries and strong demand in developing countries. In 2014, the G20 launched the Global Infrastructure Hub to increase infrastructure investment. In Buenos Aires, G20 leaders recognised that “[i]nfrastructure is a key driver of economic prosperity, sustainable development and inclusive growth”<sup>35</sup>. Japan has announced to continue Argentina’s work on infrastructure for development, with a focus on adopting G20 principles for “quality infrastructure investment” such as transparency and economic efficiency.<sup>36</sup>

**Global Infrastructure Investment Needs by Sector (2019-2040)**



Source: calculation based on data from the Global Infrastructure Hub 2019

The G20’s work on infrastructure has so far been largely isolated from the G20’s discussions on climate and sustainability – although the two issues are intertwined.

The Global Infrastructure Hub estimates that USD 85 trillion of investment in global infrastructure is needed between 2019 and 2040. This amounts to an average of USD 3.9 trillion per year, or 3.5% of global GDP.<sup>37</sup> One third of this sum relates to the power sector, and over 50% to transport infrastructure – clearly sectors that are both crucial for reducing GHG emissions and vulnerable to climate impacts.

Due to the high capital intensity and the long lifetime of most infrastructure (e.g. gas transmission grid has a life span of 60 years<sup>38</sup>), decisions taken today have the potential to lock us in to high-carbon development – and many of these decisions will be taken over the next 2 to 3 years.<sup>39</sup> Similarly, access to appropriate infrastructure can support adaptation and resilience to climate

change.<sup>40</sup> Building water-storage capacity and improving water-use efficiency could provide greater access to clean water and sanitation and support agriculture, for example. Failure to integrate or consider climate risk in existing infrastructure policy, planning, design and operation can increase vulnerability (e.g. choices concerning the placement of infrastructure) or lead to costly retrofitting (e.g. housing, roads and transport).<sup>41</sup>

In Buenos Aires, the G20 discussed possible ways to make infrastructure an asset class in order to attract more investment. In line with its original intention to foster financial stability, the G20 also has an interest in protecting asset returns. Investors need clear and reliable policy directions to avoid “stranded assets” (e.g. a power plant being removed from the grid before end of lifetime due to regulatory changes or climate impacts).

→ It is critical that the G20 countries align their infrastructure planning with 1.5°C pathways (and their long-term strategies). While there are different paths for achieving 1.5°C, the direction for the power and transport sector is particularly clear. For example, oil, coal and gas infrastructure (exploration, power plants, transmission) are not in line with a 1.5°C pathway. The expansion of most infrastructure implies increasing demand for construction materials, which is traditionally linked to high-carbon activities. There is a need for researching alternative construction practices and for rethinking approaches to infrastructure planning, e.g. in light of digitalisation.<sup>42</sup>

→ New infrastructure must be climate-resilient in order to minimise the economic and social impact of physical climate risks in particular. This could include increased use of heat-resistant materials for road surfaces, or building roads at a greater distance from coastal areas.<sup>43</sup> G20 leaders already recognised “the importance of comprehensive adaptation strategies, including investment in infrastructure that is resilient to extreme weather events and disasters”<sup>44</sup> during the Buenos Aires summit. Through spatial planning, project appraisal (e.g. environmental impact assessment), regulatory standards (e.g. building codes) and climate risk disclosure, G20 policy makers can improve the reliability of infrastructure and increase asset life.<sup>45</sup>

#### Recommendations:

- **The G20 commits to make infrastructure policies, plans and projects consistent with a 1.5°C compatible pathway**
- **The G20 commits to make resilience a focus in the planning, design, construction and operation of infrastructure.**

Quality Infrastructure Working Group → Finance Ministers and Leaders



## G20 agree to phase out coal mining and coal power

The G20 has so far avoided taking positions on energy technology choices. The energy ministers stated that “there are different possible national paths to achieve cleaner energy systems” in 2018 in Argentina. However, they also stressed “the need to successfully transform energy systems, by increasing investments in cleaner technologies, cooperation in energy efficiency and deployment of renewables and innovation.”<sup>46</sup>

The IPCC 1.5°C report finds that coal power must be terminated by mid-century. A coal phase-out also makes sense from an economic point of view: already today, building new renewables is less costly than the upkeep of many existing coal plants (roughly 35%). By 2030, this figure is expected to climb to 96%.<sup>47</sup> In the US, new renewables are already cheaper than 74% of operating coal plants.<sup>48</sup> Coal is responsible for around

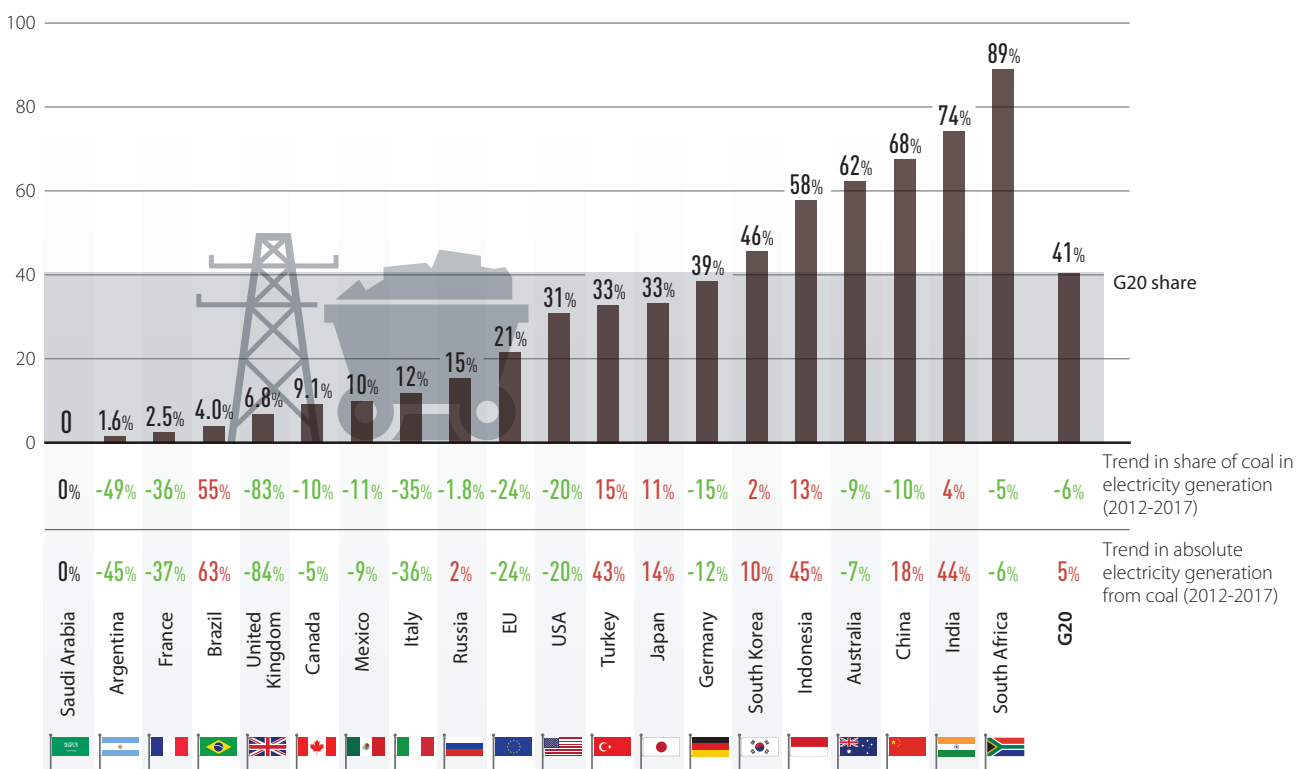
800,000 premature deaths globally.<sup>49</sup> For Europe alone, the health impacts of coal are estimated to create annual economic costs of USD 70 billion.<sup>50</sup>

The G20 countries rely to varying degrees on coal power or coal mining. Some countries rely on coal as the easiest option to reach development objectives such as electricity access.

Five G20 countries (Canada, France, Italy, UK and Mexico) are already members of the Powering Past Coal Alliance, which aims to phase out coal by 2030 (or 2050 for non-OECD countries).<sup>51</sup>
















## Share of coal in electricity generation (%), 2017

Share of coal in electricity generation (%)



Source: Enerdata 2018

## Status of coal phase-out in G20 countries

G20 countries	Official coal phase-out
 Canada	 Yes: 2030
 France	 Yes: 2021
 Italy	 Yes: 2025
 United Kingdom	 Yes: 2025
 Germany	 No, but coal commission has presented a strategy for a 2038 phase-out, which chancellor Merkel has announced to translate into law by autumn 2019
 Mexico	 No, but member of 'Powering Past Coal Alliance'
 Australia	 No, but 5 coal power plants have been closed over the last 5 years.
 Brazil	 No
 China	 No, but aims to reduce the share of coal in the total energy mix from 64% (current) to 58% (2020).
 EU	 No but ten of the 28 EU states have committed to a coal-phase out.
 India	 No
 Indonesia	 No, but aims to reduce the share in the total energy mix to 30% (2025) and 25% (2050).
 Japan	 No, but aims to reduce the share in the electricity mix to 26% (2030) and requires the phase-out of inefficient coal power plants.
 Russia	 No
 South Africa	 No, but aims to reduce the share in the energy mix to 20% (2050).
 South Korea	 No, only one province (Chungnam) has joined the 'Powering Past Coal Alliance' and pledged to close 14 power plants by 2026.
 Turkey	 No
 United States	 No
 Argentina	 Share of coal in energy mix is negligible (around 1%).
 Saudi Arabia	 No coal used for power generation

Coal phase-out dates will differ for individual G20 countries. However, it would be a clear and much-needed signal if the G20 were to publicly announce the development of national plans to phase out coal over the next three decades at the latest.

**Recommendations:**

→ **G20 countries commit to adopt national coal phase-out plans**

Energy Transition Working Group → Energy Ministers  
→ Leaders

## 6. ALIGN FINANCIAL FLOWS

The IPCC 1.5°C report found that limiting warming to 1.5°C will require a “major reallocation of the investment portfolio”.<sup>52</sup> In Hamburg, 19 G20 members have committed to “create an enabling environment that is conducive to making public and private investments consistent with the goals of the Paris Agreement”.<sup>53</sup>

To drive disruptive innovation for decarbonisation and climate resilience, the G20 countries need to ensure that all finance (both public and private, domestic and international) supports and does not undermine the transition towards low-carbon, climate-resilient economies. Making infrastructure consistent with a 1.5°C pathway requires a shift in respective investments.

The G20 has recognised existing challenges to greening finance, “among others, difficulties in internalizing environmental externalities, maturity mismatch, lack of clarity in green definitions, information asymmetry and inadequate analytical capacity”.<sup>54</sup> While both public and private actors need to change, governments play a crucial role in incentivizing, informing and imposing decisions.<sup>55</sup> To this end, they have four types of tools at their disposal: (1) financial policies and regulations (e.g. financial disclosure; lending requirements for banks); (2) fiscal policy levers (e.g. subsidies, taxes, carbon pricing); (3) public finance (e.g. grants, debt, equity, insurance guarantees); and (4) information instruments (e.g. voluntary standards and labelling).<sup>56</sup>

The G20 has already discussed some of these tools in the context of fossil fuel subsidies, climate-related financial disclosure, or aligning development finance with the Paris Agreement. As with many other topics, however, the G20 has failed to follow up on respective commitments and initiatives.

### G20 makes climate-related financial disclosure mandatory

The G20 has an interest in making the financial system resilient to risks. Climate risks are financial risks: on the one hand, climate impacts such as droughts and floods can destroy assets and lead affected parties to seek compensation for losses; on the other hand, assets can become stranded assets if they are not aligned with long-term climate policies, especially in fossil fuel industries.<sup>57</sup> Currently, investors lack the necessary information to adjust to climate change.<sup>58</sup>

In 2015, the G20 asked the Financial Stability Board (an international body that monitors and makes recommendations on the global financial system)<sup>59</sup> to consider climate risks. In response, the FSB launched the industry-led Task Force on Climate-related Financial Disclosures (TCFD) to develop a framework for companies to disclose their climate-related risk in financial filings, which is made available to investors, lenders, insurers and other stakeholders.<sup>60</sup>

The recommendations are currently voluntary; however, several countries have started engaging with the private sector or even begun to encode the recommendations into law. In December 2018, Japan issued guidance on information disclosure for companies of different sectors, in accordance with the TCFD Recommendations.<sup>61</sup> In 2016, the People’s Bank of China established the Green Finance Committee to develop green finance standards, approaches for evaluation and environmental risk analysis.<sup>62</sup> And the European Union is currently negotiating a sustainable finance strategy, which includes disclosure requirements for institutional investors.<sup>63</sup>

So far, however, France is the only G20 country that has encoded the TCFD recommendations into law and has made carbon disclosure mandatory for asset owners and asset managers.<sup>64</sup>

#### Recommendations:

- **G20 agrees to the mandatory implementation of the recommendations made by the FSB’s TCFD**
- **G20 agrees to track the collective process in implementing the TCFD recommendations**

Sustainable Finance  
Study Group →  
Finance Ministers

### Approaches to implementing the recommendations of the TCFD

		No formal engagement with TCFD	Political and regulatory engagement	Formal engagement with private sector	Publication of guidance and action plans	Encoding into law
Argentina		<div></div>				
Australia			<div></div>	<div></div>		
Brazil			<div></div>			
Canada			<div></div>	<div></div>		
China			<div></div>			
European Union (28)			<div></div>	<div></div>	<div></div>	
France			<div></div>			<div></div>
Germany			<div></div>			
India		<div></div>				
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Saudi Arabia		<div></div>				
South Africa			<div></div>	<div></div>		
South Korea		<div></div>				
Turkey				<div></div>		
United Kingdom			<div></div>	<div></div>		
United States			<div></div>			

Source: CISL, 2018

### G20 agrees on end-date for fossil fuel subsidies

Shifting government support towards green investments must include the simultaneous termination of support for the production and consumption of oil, gas, coal and fossil fuel-based electricity. For the past 10 years, the G20 governments have made a repeated annual commitment to ending fossil fuel subsidies<sup>65</sup> – however, without setting a concrete deadline.

Transparency is an important first step. In 2013, the G20 finance ministers launched a voluntary peer review process among G20 countries on fossil fuel subsidies.<sup>66</sup> Eight countries (China-USA; Mexico-Germany; Indonesia-Italy; Canada-Argentina) have completed, or are in the process of conducting, their peer reviews.<sup>67</sup>

Some G20 governments have also made progress in shifting subsidies away from fossil fuels:

- Indonesia saved USD 16 billion by reforming untargeted subsidies for gasoline and diesel in 2015. Indonesia invested these savings in health insurance, housing for low-income groups, clean water access, infrastructure and other areas.<sup>68</sup>
- Argentina saved USD 780 million by removing some incentives to upstream fossil fuel companies in recent years.<sup>69</sup>

- The EU has set a deadline to phase out environmentally harmful subsidies by 2020, and the G7 called for the phase-out of inefficient fossil fuel subsidies by 2025.<sup>70</sup>

Nevertheless, each of the G20 countries is still subsidizing fossil fuels, which amounts to an expenditure of approximately USD 147 billion per year (2016 data) through fiscal support alone (tax breaks and budget expenditure).

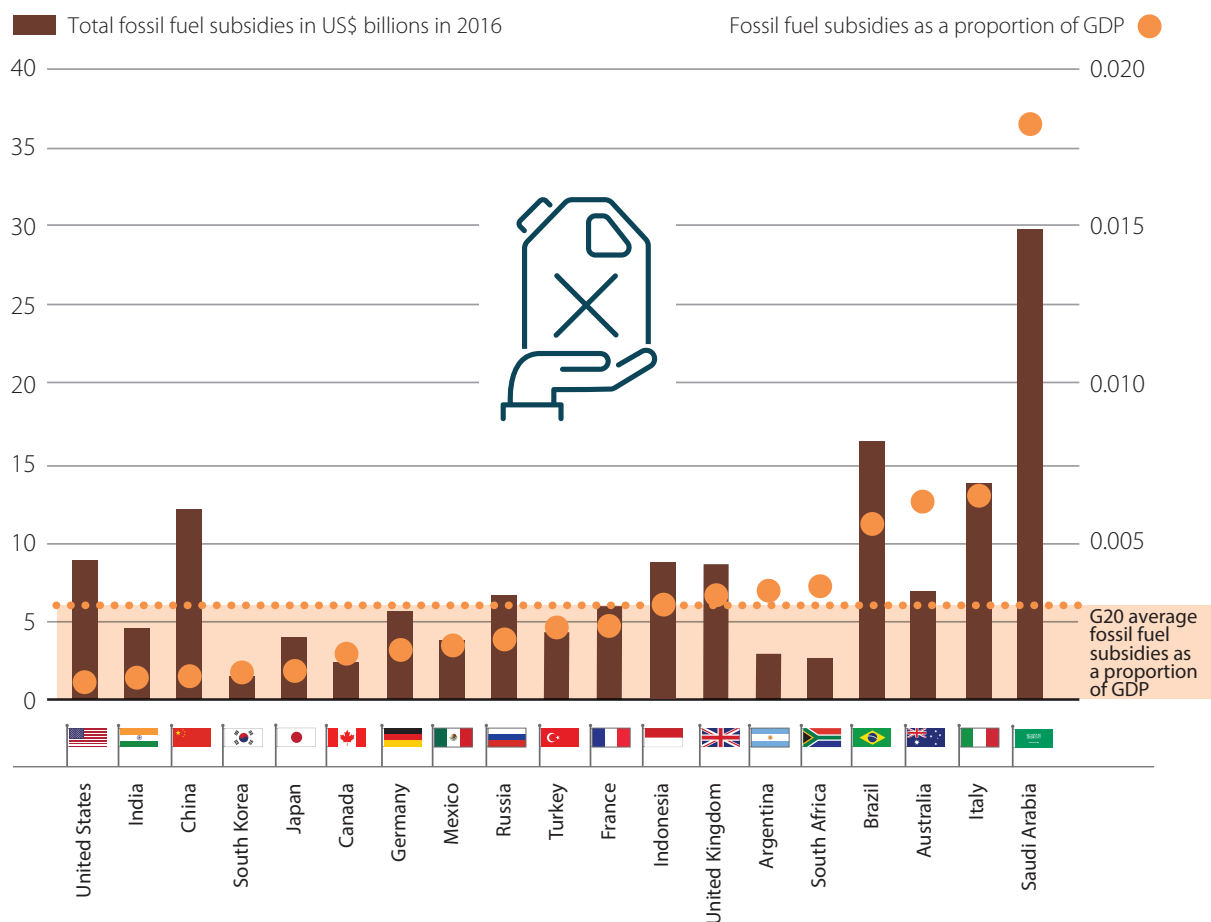
Many G20 countries price carbon emissions either implicitly or explicitly through emission trading schemes or carbon taxes. However, the price levels are mostly very low and do not outweigh the high level of fossil fuel subsidies.<sup>71</sup> Only Canada and France generate more public revenues through explicit carbon pricing than they spend on fossil fuel subsidies.

#### Recommendations:

- **G20 sets an end-date for fossil fuel subsidies by no later than 2025**
- **G20 countries agree to complete subsidy peer reviews by 2020**

Sustainable Finance Study Group → Finance Ministers

### Fossil fuel subsidies in the G20



Source: OECD and IAE, 2018  
Note: no EU data available.

## G20 commits to end development finance for fossil fuels

Development finance institutions (DFIs) play an important role in directing capital, both domestically and cross-border. They provide finance, mobilise private finance through risk mitigation, and can assist governments in policy reform. National development banks also play an increasing role, especially in emerging economies.<sup>72</sup>

In December 2017, the International Development Finance Club (representing 24 national, bilateral and regional development banks) and the Multilateral Development Banks (MDBs), made a joint commitment to redirect financial flows in support of the transition towards low-carbon and climate-resilient development.<sup>73</sup> While these actors are increasingly boosting climate finance (e.g. through investment in renewable infrastructure), many of them are still financing fossil fuel production and fossil fuel infrastructure that is detrimental to or undermining climate action.<sup>74</sup>

DFIs, especially NDBs, need clearer mandates from their governments and shareholders to align their activities with climate action.<sup>75</sup> The G20 countries are the largest shareholders of MDBs and play an important role in the governance of their respective bilateral or national development banks. 19 of the G20 members called on “all MDBs to identify opportunities for cooperation and enhanced action to address, inter alia, ambitious adaptation and mitigation finance.”<sup>76</sup> Within the 2018 Climate Sustainability Working Group, the G20 discussed the alignment of DFIs with NDCs and long-term strategies. There is a need for identifying what these general commitments mean in practice for the portfolios of DFIs. As a first step, G20 governments could give their national and bilateral development banks a clear mandate to stop financing coal power and infrastructure.

### Recommendations:

- **G20 asks MDBs to implement their Paris Agreement alignment methodologies no later than 2020 and to prove that new investments are consistent with 1.5°C and climate-resilient pathways**
- **G20 commits to instructing national and bilateral development banks to stop financing coal, oil or gas projects**

Climate  
Sustainability  
Working Group  
→ Leaders;  
Development  
Working Group

## 4. ANNEX

### G20 Working Structure under the Japanese presidency

#### SHERPA TRACK

##### DIRECT REPORTING:

- *Climate Sustainability WG*
- *Development WG*
- *Anti-Corruption WG*

##### MINISTERS REPORTING TO SHERPAS:

- *Energy Transitions and Global Environment for Sustainable Growth (Energy; Environment)*
  - *Energy Transition WG*
- *Agriculture*
- *Trade and Digital Economy*
  - *Trade and Investment WG*
  - *Task-force on Digital Economy*
- *Labour and Employment*
  - *Employment WG*
- *Health*
  - *Health WG*
- *Tourism*
- *Foreign Affairs*

#### FINANCE TRACK

- *Infrastructure WG*
- *International Financial Architecture WG*
- *Framework WG*
- *Africa Advisory Group*
- *Sustainable Finance Study Group*
- *Global Partnership for Financial Inclusion*

**Joint WG on Quality Infrastructure** (Anti-corruption, Development, Infrastructure WGs)



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