

# Doubling Back and Doubling Down:

G20 scorecard on  
fossil fuel funding

November 2020



© 2020 International Institute for Sustainable Development  
Published by the International Institute for Sustainable Development

## International Institute for Sustainable Development

The International Institute for Sustainable Development (IISD) is an independent think tank championing sustainable solutions to 21st-century problems. Our mission is to promote human development and environmental sustainability. We do this through research, analysis and knowledge products that support sound policymaking. Our big-picture view allows us to address the root causes of some of the greatest challenges facing our planet today: ecological destruction, social exclusion, unfair laws and economic rules, a changing climate. IISD's staff of over 120 people, plus over 50 associates and 100 consultants, come from across the globe and from many disciplines. Our work affects lives in nearly 100 countries. Part scientist, part strategist—IISD delivers the knowledge to act.

IISD is registered as a charitable organization in Canada and has 501(c)(3) status in the United States. IISD receives core operating support from the Province of Manitoba and project funding from numerous governments inside and outside Canada, United Nations agencies, foundations, the private sector, and individuals.

## Overseas Development Institute

ODI is an independent, global think tank, working for a sustainable and peaceful world in which every person thrives. We harness the power of evidence and ideas through research and partnership to confront challenges, develop solutions, and create change.

## Oil Change International

Oil Change International (OCI) is a research, communications, and advocacy organization focused on exposing the true costs of fossil fuels and facilitating the ongoing transition to clean energy. Rooted in community solidarity and principled policy analysis, we work within larger movements to build a fossil free future.

Founded in 2005, Oil Change International now has a talented, experienced, and dedicated international team of twenty, backed by hundreds of thousands of supporters. We are data driven and people powered.

### Head Office

111 Lombard Avenue,  
Suite 325  
Winnipeg, Manitoba  
Canada R3B 0T4

**Tel:** +1 (204) 958-7700

**Website:** [www.iisd.org](http://www.iisd.org)

**Twitter:** @IISD\_news

### Head Office

203 Blackfriars Road  
London SE1 8NJ  
United Kingdom

**Tel:** +44 (0)20 7922 0300

**Website:** [www.odi.org](http://www.odi.org)

**Twitter:** @ODIdev

### Head Office

714 G Street SE,  
Suite 202  
Washington DC 20003  
United States

**Tel:** +1 202 518 9029

**Website:** [www.priceofoil.org](http://www.priceofoil.org)

**Twitter:** @priceofoil



## **Doubling Back and Doubling down: G20 scorecard on fossil fuel funding**

November 2020

Written by Anna Geddes, Ivetta Gerasimchuk, Balasubramanian Viswanathan, Angela Picciariello, Bronwen Tucker, Alex Doukas, Vanessa Corkal, Mostafa Mostafa, Joachim Roth, Anissa Suharsono and Ipek Gençsü

### **Acknowledgements**

Christopher Beaton (IISD), Juan Carlos Belausteguigoitia (ITAM), Tzaporah Berman (Stand.Earth), Caroline Brouillette (Équiterre), Rod Campbell (The Australia Institute), Han Chen (NRDC), Vladimir Chuprov (Greenpeace Russia), Kate DeAngelis (Friends of the Earth, United States), Lucile Dufour (Réseau Action Climat France), Ashish Fernandes (Climate Risk Horizons), Meike Fink (Réseau Action Climat France), Justine Garrett (OECD), Livi Gerbase (INESC), Nathalie Girouard (OECD), Michael Lazarus (SEI), Adam McGibbon (Global Witness), Akihisa Kuriyama (IGES), Roberto Kishinami (Climae Sociedade), Doug Koplow (EarthTrack), Jonas Kuehl (IISD), Julia Levin (Environmental Defence Canada), Myriam Linster (OECD), Cécile Marchand (Friends of the Earth France), Mark Mateo (OECD), Sarah Miet (OECD), Gabriele Nanni (Legambiente), Bengisu Özenç (Sustainable Economics and Finance Association), María Marta Di Paola (FARN), Matthias Runkel (FÖS), Peter Wooders (IISD), Yeonho Yang (Greenpeace East Asia), and Sejong Youn (Solutions for Our Climate).

The authors gratefully acknowledge the financial support of the KR Foundation that made this report possible.





## Executive Summary

Despite various commitments since 2009 to end government support for fossil fuels and make “finance flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development” (United Nations, 2015a, Article 2.1c), G20 governments continued to provide significant support to fossil fuels in 2017–2019. Recent estimates of public money commitments for fossil fuels in response to the COVID-19 crisis indicate that G20 countries are moving in the wrong direction and are not likely to meet their phase-out commitments.

This report aims to track each of the G20 countries’ progress in phasing out government support to fossil fuels. It does so by reviewing progress in ending direct budgetary transfers and tax expenditures, price support, public finance, and investments by state-owned enterprises (SOEs) for fossil fuels. It complements this review with an analysis of public money commitments for fossil fuel production and consumption in response to the COVID-19 crisis up to August 12, 2020.

## Key Findings

- **G20 governments provided \$584 billion<sup>1</sup> annually** (2017–2019 average) via direct budgetary transfers and tax expenditure, price support, public finance, and SOE investment for the production and consumption of fossil fuels at home and abroad. Governments provided **more support to oil and gas production than any other stage of fossil fuel-related activity**, at \$277 billion (47% of the total support to fossil fuels).
- **G20 government support has seen a 9% drop** relative to the annual 2014–2016 average, indicating some progress has been made, although around a third of this decrease can be attributed to an average decrease in oil prices. The drop in support does not represent a consistent decline across G20 countries over time. Seven of the G20 countries increased their fossil fuel support: Australia, Canada, China, France, India, Russia, and South Africa. **Progress made between 2014 and 2019 was insufficient: more needs to be done.**
- G20 countries allocated some \$170 billion in public money commitments to fossil fuel-intensive sectors in response to the COVID-19 crisis between January 1 and August 12, 2020. This is likely an underestimate due to the dynamic nature of government responses to the COVID-19 crisis and a lack of transparency that doesn’t allow for the quantification of many announced policies. Readers can refer to the most up-to-date information at the Energy Policy Tracker ([www.energypolicytracker.org](http://www.energypolicytracker.org)). **The support for fossil fuels in response to the COVID-19 crisis indicates that G20 governments are moving in the wrong direction and are likely to undo the little progress made between 2014 and 2019.**
- In tracking G20 countries’ progress toward phasing out government support for fossil fuels, our scorecards identified leaders and laggards across seven indicators but found

---

<sup>1</sup> All currency is in USD unless otherwise indicated.



that **no G20 country scores exceptionally well**: Germany had the top score of 71/100. Every G20 country is at risk of not delivering on its fossil fuel subsidy phase-out commitment.

- **Among the Organisation for Economic Co-operation and Development (OECD) member countries of the G20, Germany scored highest while Turkey, Mexico, and the United Kingdom scored lowest.** The United Kingdom lacks transparency about government support and continues to provide support for consumers of fossil fuel by foregoing tax revenue and supplying direct budgetary transfers. Mexico continues to provide significant support for oil and gas production and fossil fuel-based power, especially through SOE investment. Turkey also lacks transparency and continues to provide support for coal production and fossil fuel use, predominantly by foregoing tax revenue and providing SOE investment.
- **Among the non-OECD member countries of the G20, Brazil scored the highest while Saudi Arabia scored the lowest.** Saudi Arabia continues its support for oil and gas production and fossil fuel-based power, predominantly due to large capital expenditure from its SOEs and support for fossil fuel use via low energy prices.

## Recommendations

We recommend that G20 countries develop strategies to end government support for fossil fuels that include these recommended next steps:

- Now is the chance to **redirect G20 government support away from fossil fuels to other more sustainable areas like health, social support, and the clean energy transition.**
- **Any public money commitments for fossil fuels in response to the COVID-19 crisis should have green conditions attached.** G20 governments plan to spend trillions of dollars to counteract the impacts of the COVID-19 crisis, and how they do this will shape the global economy for many years to come.
- All G20 governments should **focus phase-out efforts on reducing support for oil and gas exploration, production, refining, and transportation.** This stage of fossil fuel activity received the largest share of G20 government support in 2017–2019.
- As SOE investment accounts for the largest type of G20 government support measure, and considering the key role that SOEs play in many countries' energy systems, governments need to **encourage an SOE transition, triggering their diversification away from fossil fuels.**
- **All G20 public finance institutions must stop financing oil, gas, and coal projects** across the supply chain. They should also halt indirect support through related infrastructure, advisory services, technical assistance, or financial intermediaries.
- All G20 governments, especially OECD members, should charge the full rate of tax on producers and users of fossil fuels: \$79 billion annually (2017–2019 average) of revenue foregone through tax expenditure could be directed toward urgent COVID-19 recovery needs.



- All G20 governments should **remove energy subsidies on fossil fuel use and ensure poor and vulnerable consumers can still access and afford energy as subsidies are reduced— where necessary, implementing targeted support for those most in need.** Targeting consumer support will be crucial for G20 governments in the short- and medium-term as more households and businesses experience energy access issues due to the COVID-19 crisis.
- Countries that have not yet done so should **commit to conducting peer reviews** of all forms of government support to fossil fuels to increase transparency, encourage reporting and quantification of government support, and further facilitate the sharing of experience between G20 countries. Doing this is particularly important for Australia, Japan, the Republic of Korea, Turkey, the United Kingdom, Russia, Brazil, Saudi Arabia, and South Africa. Countries that have committed to but not concluded peer reviews should prioritize them for fast-tracking. That includes Argentina, Canada, France, and India.
- All G20 countries should **publicly quantify and report upon all government support measures for fossil fuels** in a regular and comprehensive way in order to better track progress in ending support for fossil fuels. This is complementary to countries' upcoming SDG reporting requirements.


**Table 1.** G20 Scorecard - OECD members

	Germany	France	Japan	Italy	Canada	Australia	United States	Rep. of Korea	Mexico	Turkey	United Kingdom
<b>Overall ranking and score</b>	<b>1st</b> 71/100	<b>2nd</b> 55/100	<b>2nd</b> 55/100	<b>4th</b> 54/100	<b>5th</b> 53/100	<b>6th</b> 52/100	<b>6th</b> 52/100	<b>8th</b> 49/100	<b>11th</b> 48/100	<b>11th</b> 48/100	<b>11th</b> 48/100
1. Transparency	<b>1st</b> Good	<b>3rd</b> Mediocre	<b>11th</b> Opaque	<b>3rd</b> Mediocre	<b>3rd</b> Mediocre	<b>7th</b> Poor	<b>2nd</b> Good	<b>11th</b> Opaque	<b>3rd</b> Mediocre	<b>11th</b> Opaque	<b>11th</b> Opaque
2. Pledges and commitments	<b>1st</b> Very strong	<b>1st</b> Very strong	<b>11th</b> Very weak	<b>7th</b> Weak	<b>4th</b> Mediocre	<b>5th</b> Mediocre	<b>11th</b> Very weak	<b>9th</b> Weak	<b>7th</b> Weak	<b>5th</b> Mediocre	<b>3rd</b> Strong
3. Scale of support for coal exploration, production, processing, and transportation	<b>7th</b> Medium	<b>3rd</b> Very low	<b>10th</b> Medium	<b>1st</b> None identified	<b>3rd</b> Very low	<b>5th</b> Low	<b>6th</b> Low	<b>8th</b> Medium	<b>1st</b> None identified	<b>11th</b> High	<b>8th</b> Medium
4. Scale of support for oil and gas exploration, production, refining, and transportation	<b>1st</b> Low	<b>1st</b> Low	<b>6th</b> Low	<b>1st</b> Low	<b>11th</b> High	<b>1st</b> Low	<b>5th</b> Low	<b>8th</b> Medium	<b>10th</b> High	<b>6th</b> Low	<b>9th</b> Medium
5. Scale of support for fossil fuel power	<b>3rd</b> Low	<b>9th</b> Medium	<b>8th</b> Medium	<b>1st</b> Very low	<b>7th</b> Medium	<b>1st</b> Very low	<b>6th</b> Low	<b>11th</b> High	<b>11th</b> High	<b>3rd</b> Low	<b>3rd</b> Low
6. Scale of support for fossil fuel use	<b>1st</b> Low	<b>6th</b> High	<b>1st</b> Low	<b>11th</b> Very high	<b>1st</b> Low	<b>11th</b> Very high	<b>1st</b> Low	<b>1st</b> Low	<b>11th</b> Very high	<b>11th</b> Very high	<b>7th</b> Very high
7. Progress in ending support for fossil fuels	<b>2nd</b> Poor	<b>11th</b> Very poor	<b>1st</b> Mediocre	<b>7th</b> Very poor	<b>11th</b> Very poor	<b>6th</b> Poor	<b>8th</b> Very poor	<b>4th</b> Poor	<b>2nd</b> Poor	<b>4th</b> Poor	<b>9th</b> Very poor


**Table 2.** G20 Scorecard – Non-OECD members

	<b>Brazil</b>	<b>Argentina</b>	<b>China</b>	<b>Russia</b>	<b>India</b>	<b>Indonesia</b>	<b>South Africa</b>	<b>Saudi Arabia</b>
<b>Overall ranking and score</b>	<b>1st</b> B	<b>2nd</b> B	<b>3rd</b> B-	<b>4th</b> B-	<b>5th</b> C+	<b>5th</b> C+	<b>7th</b> C+	<b>8th</b> C+
1. Transparency	<b>8th</b> Opaque	<b>1st</b> Good	<b>1st</b> Good	<b>5th</b> Poor	<b>1st</b> Good	<b>4th</b> Mediocre	<b>8th</b> Opaque	<b>8th</b> Opaque
2. Pledges and commitments	<b>2nd</b> Mediocre	<b>2nd</b> Mediocre	<b>1st</b> Strong	<b>8th</b> Weak	<b>2nd</b> Mediocre	<b>8th</b> Weak	<b>8th</b> Weak	<b>8th</b> Weak
3. Scale of support for coal exploration, production, processing, and transportation	<b>1st</b> None identified	<b>5th</b> Medium	<b>5th</b> Medium	<b>3rd</b> Very low	<b>7th</b> Medium	<b>4th</b> Low	<b>8th</b> Very high	<b>1st</b> None identified
4. Scale of support for oil and gas exploration, production, refining, and transportation	<b>4th</b> Medium	<b>6th</b> High	<b>5th</b> Medium	<b>7th</b> High	<b>3rd</b> Low	<b>1st</b> Low	<b>1st</b> Low	<b>8th</b> Very high
5. Scale of support for fossil fuel power	<b>1st</b> Low	<b>2nd</b> Medium	<b>4th</b> Medium	<b>7th</b> High	<b>6th</b> High	<b>3rd</b> Medium	<b>4th</b> Medium	<b>8th</b> Very high
6. Scale of support for fossil fuel use	<b>1st</b> Low	<b>1st</b> Low	<b>1st</b> Low	<b>5th</b> Medium	<b>1st</b> Low	<b>7th</b> High	<b>5th</b> Medium	<b>8th</b> Very high
7. Progress in ending support for fossil fuels	<b>1st</b> Mediocre	<b>2nd</b> Mediocre	<b>6th</b> Poor	<b>4th</b> Poor	<b>8th</b> Very poor	<b>6th</b> Poor	<b>4th</b> Poor	<b>2nd</b> Mediocre

Note: See Annex 1 for scorecard indicator details.





# Table of Contents

<b>1.0 Introduction .....</b>	<b>1</b>
<b>2.0 Types of Government Support.....</b>	<b>2</b>
<b>3.0 Stages of Fossil Fuel-Related Activity.....</b>	<b>5</b>
<b>4.0 Scoring Approach.....</b>	<b>6</b>
4.1 Indicators.....	6
4.2 Total Score.....	6
<b>5.0 Findings.....</b>	<b>8</b>
5.1 Scoring G20 Countries.....	11
5.2 Indicator 1: Transparency.....	13
5.3 Indicator 2: Pledges and commitments.....	14
5.4 Indicator 3: Scale of government support for coal exploration, production, processing, and transportation.....	15
5.5 Indicator 4: Scale of government support for oil and gas exploration, production, refining, and transportation .....	17
5.6 Indicator 5: Scale of government support to fossil fuel-based power .....	22
5.7 Indicator 6: Scale of government support for fossil fuel use by industry, transport, households, and others.....	24
5.8 Indicator 7: Progress in ending government support for fossil fuels.....	26
5.8.1 Progress in Ending Oil Consumption Subsidies.....	29
5.8.2 Progress in Ending Public Finance for Fossil Fuels .....	30
5.8.3 Progress in Ending SOE Investment in Fossil Fuels.....	31
5.8.4 Public Money Commitments in Response to the COVID-19 Crisis.....	33
<b>6.0 Summary of Findings and Recommendations .....</b>	<b>35</b>
6.1 Summary of Findings .....	35
6.2 Recommendations.....	37
<b>References .....</b>	<b>38</b>
<b>Annex 1. Overview of Indicators and Sub-Indicators Used in the G20 Scorecards.....</b>	<b>44</b>



## List of Figures

Figure 1. Stages of fossil fuel production and consumption (related to indicators 3–7).....	5
Figure 2. G20 government support to fossil fuels per year by stage of fossil fuel-related activity (upper figure) and type of mechanism (lower figure) (2017–2019 average, except public finance, 2017–2018 average) .....	8
Figure 3. Distribution of government support by stage of activity and type of mechanism between G20 OECD and non-OECD member countries .....	10
Figure 4. G20 government support to coal exploration, production, processing, and transportation (annual 2017–2019 average, USD) .....	17
Figure 5. G20 government support to oil and gas exploration, production, refining and transportation (annual 2017–2019 average, USD) .....	19
Figure 6. G20 government support to fossil fuel-based power (annual 2017–2019 average, USD) .....	23
Figure 7. G20 government support to fossil fuel use (annual 2017–2019 average, USD).....	26
Figure 8. G20 government support to fossil fuels by country in 2014–2016 and 2017–2019 averages .....	27
Figure 9. Total G20 government support per unit of GDP (y-axis) and in absolute USD (dot size) by time period (blue dot is 2014–2016 average and orange dot is 2017–2019 average) and country group (x-axis, OECD and non-OECD members) .....	28
Figure 10. Public finance to fossil fuels by country in 2014–2016 and 2017–2018 averages.....	31
Figure 11. SOE investment for fossil fuels by country in 2014–2016 and 2017–2019 averages .....	32
Figure 12. G20 public money commitments for fossil fuel-intensive sectors (resources, power, mobility, and buildings) in response to the COVID-19 crisis up until August 12, 2020 .....	34

## List of Tables

Table 1. G20 Scorecard - OECD members.....	vii
Table 2. G20 Scorecard – Non-OECD members.....	viii
Table 3. Government support policies covered by this report .....	3
Table 4. Score descriptions and their relationship to numerical scores.....	7
Table 5. Change in oil consumption support in OECD countries, normalized for oil price, demand, and currency fluctuations (2017–2019 average vs. 2014–2016 average) .....	29
Table 6. Change in oil consumption support in non-OECD countries, normalized for oil price, demand, and currency fluctuations (2017–2019 average vs. 2014–2016 average) .....	29



## Abbreviations and Acronyms

<b>EU</b>	European Union
<b>G7</b>	Group of 7
<b>G20</b>	Group of 20
<b>GSI</b>	Global Subsidies Initiative
<b>IEA</b>	International Energy Agency
<b>IISD</b>	International Institute for Sustainable Development
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OCI</b>	Oil Change International
<b>PFI</b>	public finance institution
<b>SDG</b>	Sustainable Development Goal
<b>SOE</b>	state-owned enterprise
<b>WTO</b>	World Trade Organization



# 1.0 Introduction

The G20 countries<sup>2</sup> have pledged to stop providing public money to fossil fuels and fossil fuel-intensive industries through various commitments. They have repeated their commitment to remove inefficient fossil fuel subsidies every year since 2009 (G20, 2019), with G7<sup>3</sup> leaders also suggesting a deadline of 2025 to meet this commitment (G7, 2016). Under the Paris Agreement, all governments have committed to “making finance flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development” (United Nations, 2015a, Article 2.1c). The reform of subsidies for the consumption and production of fossil fuels is also included under Sustainable Development Goal (SDG) 12 on responsible consumption and production (target SDG 12.c and indicator 12.c.1) (United Nations, 2015b, 2017). Most recently, G20 governments committed to “support[ing] an environmentally sustainable and inclusive recovery” in response to the COVID-19 crisis (G20, 2020a, p. 6).

Despite these pledges, G20 governments continue to provide significant amounts of support for the production and consumption of fossil fuels. This support places a burden on public budgets, using resources that could otherwise be put to more efficient and sustainable uses within the economy, such as toward health, social support, and the clean energy transition. Some forms of subsidy support can encourage wasteful consumption, support production that would not otherwise have taken place, and be considered economically inefficient (Granado et al., 2010). Consumer subsidies have been shown to increase inequality by mostly benefiting richer consumers who can afford to pay more, rather than the poorest members of society (Coady et al., 2015). Government support for fossil fuels also decreases the competitiveness of competing sectors, hindering investment in low-carbon energy while also increasing the risk of stranding carbon-intensive assets (Worrall et al., 2018). Public money for fossil fuel production and sectors that heavily consume fossil fuels will continue to lock in carbon-intensive activities, technologies, and infrastructures (Unruh, 2000). G20 governments plan to spend trillions of dollars to counteract the impacts of the COVID-19 crisis, and how they do this will shape the global economy for many years to come (Energy Policy Tracker, 2020). A redirection of government support away from fossil fuels is needed if we are to build the energy transition required to meet our 1.5°C targets (Intergovernmental Panel on Climate Change, 2018).

This G20 scorecard report aims to track each of the G20 countries’ progress in ending government support to fossil fuels. It has been prepared in order to increase transparency and accountability, as well as to highlight areas where more progress is needed so that G20 countries can meet their phase-out commitments and help accelerate the energy transition needed to meet our climate targets. It does so by reviewing progress in ending G20 government support to fossil fuel production and consumption between 2014 and 2019 and is complemented with an analysis of public money commitments for fossil fuel-intensive sectors in response to the COVID-19 crisis up to August 12, 2020.

---

<sup>2</sup> The G20 countries are: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Turkey, Saudi Arabia, South Africa, Republic of Korea, the United Kingdom, the United States, and the European Union (EU). For this scorecard we do not include the EU.

<sup>3</sup> The G7 countries are: Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.



## 2.0 Types of Government Support

Governments support fossil fuel production and consumption in different ways, such as through different types of public financial flows and foregone revenue, as well as through varied policies that have an impact upon the sector but are difficult to quantify in financial terms (e.g., environmental regulation exceptions).

In this report, we try to give a comprehensive picture of various government policies that all support fossil fuels but are often studied separately. In this vein, we define and track government support, as far as the available data allows us, as follows (see Table 1 for more detail):

1. Direct budget transfers and tax expenditures.
2. Price support (induced transfers) through regulated below-market prices for consumers.
3. Public finance (e.g., loans and guarantees) at both market and below-market value.
4. State-owned enterprise (SOE) investment (e.g., capital expenditure for projects via equity or debt) at both market and below-market value.
5. Public money commitments in response to the COVID-19 crisis (any kind of support measure, including the four previous types and broader government interventions, in response to the COVID-19 crisis).

G20 national and subnational governments provide **direct budget transfers**, such as direct spending on research and development for fossil fuel exploration. They also provide **tax expenditures**, sometimes referred to as government revenue foregone, such as through reduced rates or exemptions from value-added tax or tax breaks for diesel use in transport. Consumer **price support** is provided when end-user prices paid by consumers are below a reference price that reflects the full cost of supply; that is, a price that would prevail in a competitive market (e.g., when electricity prices are regulated at below-market prices) (International Energy Agency [IEA], 2020c). Price support, direct budget transfers, and tax expenditure on fossil fuel use can lead to excessive and wasteful consumption and can be considered economically inefficient.



**Table 3.** Government support policies covered by this report

Type	Period	Activities	Source
Direct budget transfers and tax expenditure	2014–2019	Production and consumption of fossil fuels	Organisation for Economic Co-operation and Development [OECD] Inventory of Support Measures for Fossil Fuels (OECD, 2020b)
Price support	2014–2019	Consumption of fossil fuels	IEA Subsidies Database (IEA, 2020b)
Public finance	2014–2018	Production of fossil fuels, including power	Shift the Subsidies Database (Oil Change International [OCI], 2020)
SOE investment	2014–2019	Production of fossil fuels, including power	Capital expenditure data collected by Overseas Development Institute from annual reports
Public money commitments in response to the COVID-19 crisis	January 1–August 12, 2020	Sectors responsible for production and consumption of fossil fuels (resources, power, mobility, buildings)	Energy Policy Tracker: Track public money for energy in recovery packages (Energy Policy Tracker, 2020)

Source: Authors' description.

G20 governments also support fossil fuel production<sup>4</sup> through the **public finance institutions** (PFIs) they own and operate. We focus on PFIs that are owned by governments outright or through a majority stake and which have a policy-oriented rather than purely commercial mandate. These institutions include bilateral development banks, national development banks, development finance institutions, and export credit agencies. Public finance can take the form of grants, loans, equity, bonds insurance, guarantees, and technical assistance, often at a below-market value (i.e., concessional rates). Even when not concessional, the high credit ratings of publicly owned financial institutions, their signalling of government priorities, and their often greater research and advisory capacity can reduce the risk to parallel private investors and drive private investment in fossil fuel production that would not otherwise occur (OECD, 2017; Tucker et al., 2020).

A number of G20 countries also support fossil fuel through one or more majority **SOEs**.<sup>5</sup> The wide variety of ways in which SOEs function can have a range of impacts on government budgets, with a number of SOEs depending on budgetary transfers to remain financially viable

<sup>4</sup> Our analysis has not identified any public finance investment for fossil fuel use (consumption).

<sup>5</sup> Our analysis has not identified any SOE investment for fossil fuel use (consumption). While there may be cases in which SOEs support consumption (e.g., through providing coal or electricity at low prices for consumption by employees), the effects of such practices are often difficult to identify and quantify, and therefore are not included in our analysis.



and in operation<sup>6</sup> (International Monetary Fund, 2013; Sdralevich et al., 2014). Majority government ownership of SOEs can provide a degree of control and government involvement in decision-making and financing, often on conditions more favourable than market terms. While this will vary by country and institution, the impact of SOE activity on the resulting energy sector can be significant.

In many emerging and developing economies, SOEs are often seen as vehicles for development, providing essential services (e.g., electricity or energy access), jobs, and localized or regionalized economic stimulus, and even form part of a country's national identity, as is the case for Pemex and CFE in Mexico. In some countries, SOEs dominate market share in parts of the energy sector. For example, in India, 29% of electricity generation was state government-owned, 25% was central government-owned, and the remaining 46% was privately owned as of August 2019 (Central Electricity Authority, 2019). Any commitment to removing government support to fossil fuels will need to consider the role that SOEs play in the energy sector and the economy.

Finally, a number of G20 countries have made **COVID-19 public money commitments** to fossil fuel-intensive sectors (resources, power, mobility and buildings) in response to the COVID-19 crisis. This support ranges in form from the provision of grants and tax exemptions to the relaxing of environmental standards. G20 governments plan to spend trillions of dollars to counteract the impacts of the COVID-19 crisis, and how they do this will shape the global economy for many years to come (Energy Policy Tracker, 2020; G20, 2020b).

Many elements of government support to fossil fuels fall under the definition of a subsidy by the World Trade Organization (WTO). In its Agreement on Subsidies and Countervailing Measures, the WTO defines a subsidy as (paraphrased): any financial contribution by a government, or agent of a government, that confers a benefit on its recipients in comparison to other market participants (WTO, 1994, Article 1.1). This definition has been accepted by the 164 WTO member states, including all G20 countries (for more details on the WTO's definition of subsidy categories, see the Methodology Note that accompanies this report). Price support, direct budget transfers, and tax expenditures for fossil fuels fall under the WTO definition of a subsidy.

Public finance and SOE investment, however, have both non-subsidy and subsidy components, which are difficult to quantify and disentangle. Non-subsidy elements of public finance and SOE investment still signal that governments are willing to prioritize support for the consumption and production of fossil fuels and associated sectors, which also propels private investment. This goes against government pledges to make “finance flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development” (United Nations, 2015a, Article 2.1c).

In our G20 scorecards, we use the broader notion of “government support,” as described at the start of this section, to track the public money that the G20 channels to fossil fuel production and consumption. The scope of the reports is thus broader than just analyzing only subsidy elements.

---

<sup>6</sup> There are examples of many SOEs in the energy sector that are not financially sustainable and have required regular bailouts from government to continue to provide a service (e.g., some Indian electricity distribution companies and South Africa's utility Eskom [Geddes et al., 2020]). We did not account for this form of government support in our data.

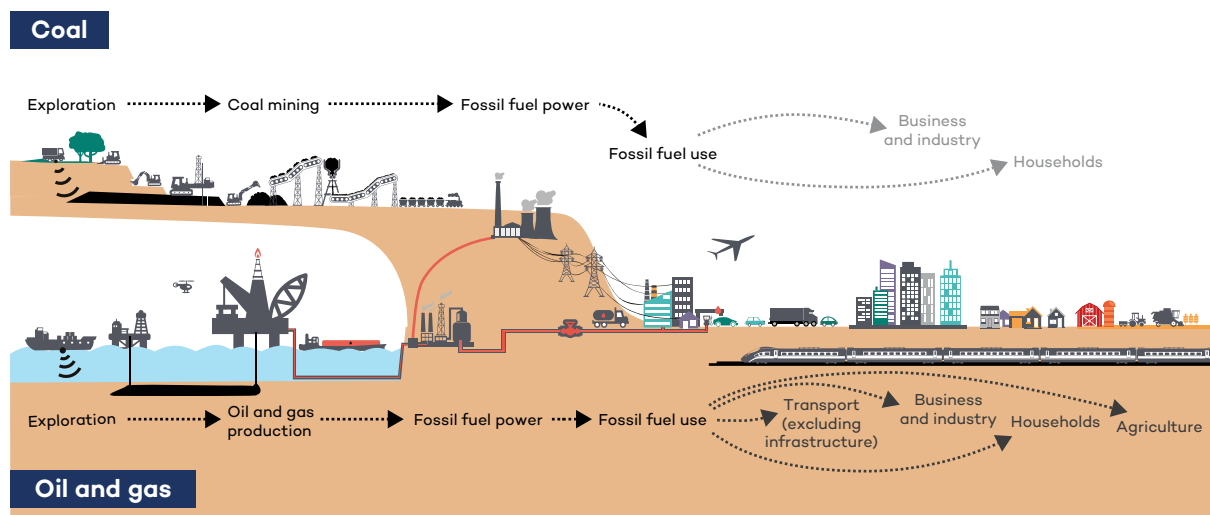


## 3.0 Stages of Fossil Fuel-Related Activity

G20 support to the fossil fuel sector can also be categorized in terms of where it is directed in the following four stages of fossil fuel-related activities (see Figure 1):

1. Coal exploration, production (mining), processing, and transportation
2. Oil and gas exploration, production, refining, and transportation
3. Fossil fuel-based power
4. Fossil fuel use by industry, transport, households, and other consumers.

**Figure 1.** Stages of fossil fuel production and consumption (related to indicators 3–7)





## 4.0 Scoring Approach

As is done in most scorecards, rankings, and ratings, this analysis works with heterogeneous and often incomplete data. We design qualitative and quantitative sub-indicators for each type of heterogeneous data so that we can bring together and compare “apples” and “oranges” in our scorecards. To use a sports analogy, in the Olympics, representatives of different countries compete in many distinct, highly specialized categories—one cannot directly compare a ski jumper and a big tennis player. But at the closure of the Olympics, we know how many gold, silver, and bronze medals each country earned and who won the Olympics.

In our scorecards, we track government support against seven indicators, which in turn consist of several sub-indicators. The indicators have been selected and designed based on a large body of existing work that tracks G7 and G20 government support for fossil fuels (Bast et al., 2015; Doukas et al., 2017; Energy Policy Tracker, 2020; Gençsü et al., 2019; Gerasimchuk et al., 2018; Tucker et al., 2020; Whitley et al., 2018).

### 4.1 Indicators

**Indicator 1, transparency**, examines the comprehensiveness of government reporting on and quantification of government support for fossil fuels.

**Indicator 2, pledges and commitments**, captures high-level political commitments (beyond existing G7 and G20 pledges) to phase out government support for fossil fuels and also captures any official backtracking on these commitments.

**Indicators 3–6 look at the scale of G20 government support** for each of the four stages of fossil fuel-related activity on average over 2017, 2018, and 2019: coal exploration, production, processing, and transportation; oil and gas exploration, production, refining, and transportation; fossil fuel-based power; and fossil fuel use by industry, transport, households, and others (see also Figure 1).

**Indicator 7, progress**, looks at progress made by G20 governments to end support for fossil fuels by capturing the change in government support between the 2014–2016 average and the 2017–2019 average, as well as the scale of countries’ COVID-19 recovery support for fossil fuels in the first half of 2020.

For details on the methodology behind the indicators and scorecard, refer to the Methodology Note that accompanies this report.

### 4.2 Total Score

Countries are separated according to their categorization as either OECD or non-OECD and then are scored in relation to one another. With this classification, the 11 G20 OECD member countries are grouped and scored against each other; the same goes for the remaining eight G20 non-OECD member countries. In this way, countries whose economies are



at a more comparable level of development are compared with each other. Importantly, recommendations from the two scorecards will be more specific and relevant to countries.

A score for each indicator is given out of 100 (with 100 being a “high” or “perfect” score). Descriptive scores are then allocated to numerical bands, as shown in Table 3. The “static” indicators 1–6 are allocated a 10% weight, and indicator 7, “progress,” is allocated a 40% weight. Indicator 7 receives the higher weighting because the main aim of these scorecards is to assess progress in ending support for fossil fuels. The final score out of 100 is calculated taking these weightings into consideration.

Each country is therefore awarded a final overall numerical score. To distinguish between scorecards, the OECD countries are allocated an overall numerical score, and the non-OECD countries are allocated an overall letter grade score. Finally, each indicator’s numerical score is converted to a descriptive score, as shown in Table 4.

**Table 4.** Score descriptions and their relationship to numerical scores

Score (numerical)	Score (letter grade)	1. Transparency	2. Pledges and commitments	3–6. Scale of support for fossil fuels	7. Progress in ending support for fossil fuels
100/100	A+	Transparent	No perfect score	None identified	Very good
90–99/100	A	Very good	Very strong	Very low	Very good
80–89/100	A-	Good	Strong	Low	Good
70–79/100	B+	Good	Strong	Medium	Mediocre
60–69/100	B	Mediocre	Mediocre	Medium	Mediocre
50–59/100	B-	Mediocre	Mediocre	High	Poor
40–49/100	C+	Poor	Weak	High	Poor
30–39/100	C	Poor	Weak	Very high	Very poor
20–29/100	C-	Very poor	Very weak	Very high	Very poor
10–19/100	D+	Very poor	Very weak	Very high	Very poor
0–9/100	F	Opaque	None	Very high	Very poor

Detailed information on all indicators and sub-indicators, along with the definitions, sources, and scoring process used in the scorecards, are provided in the accompanying Methodology Note.

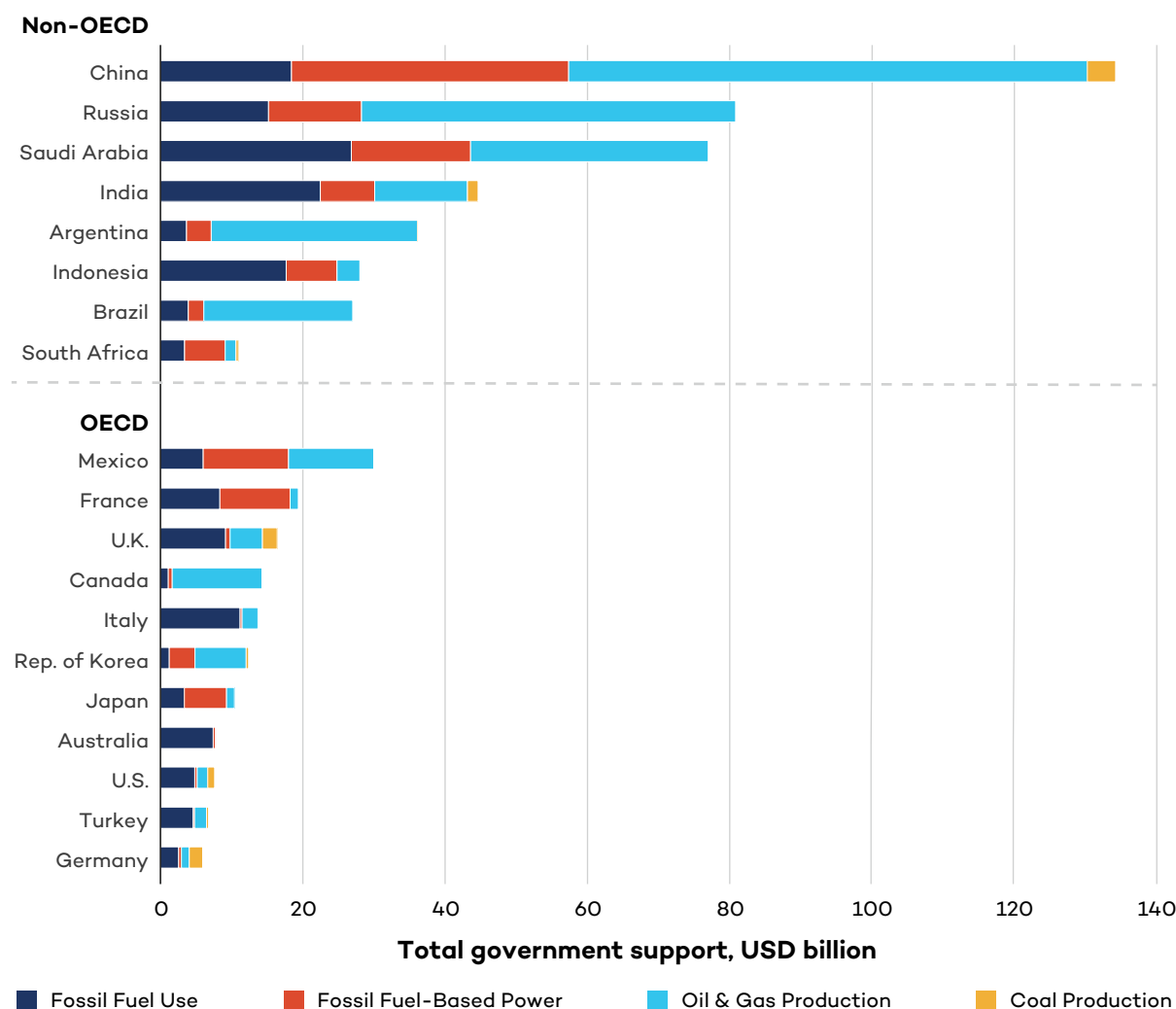




## 5.0 Findings

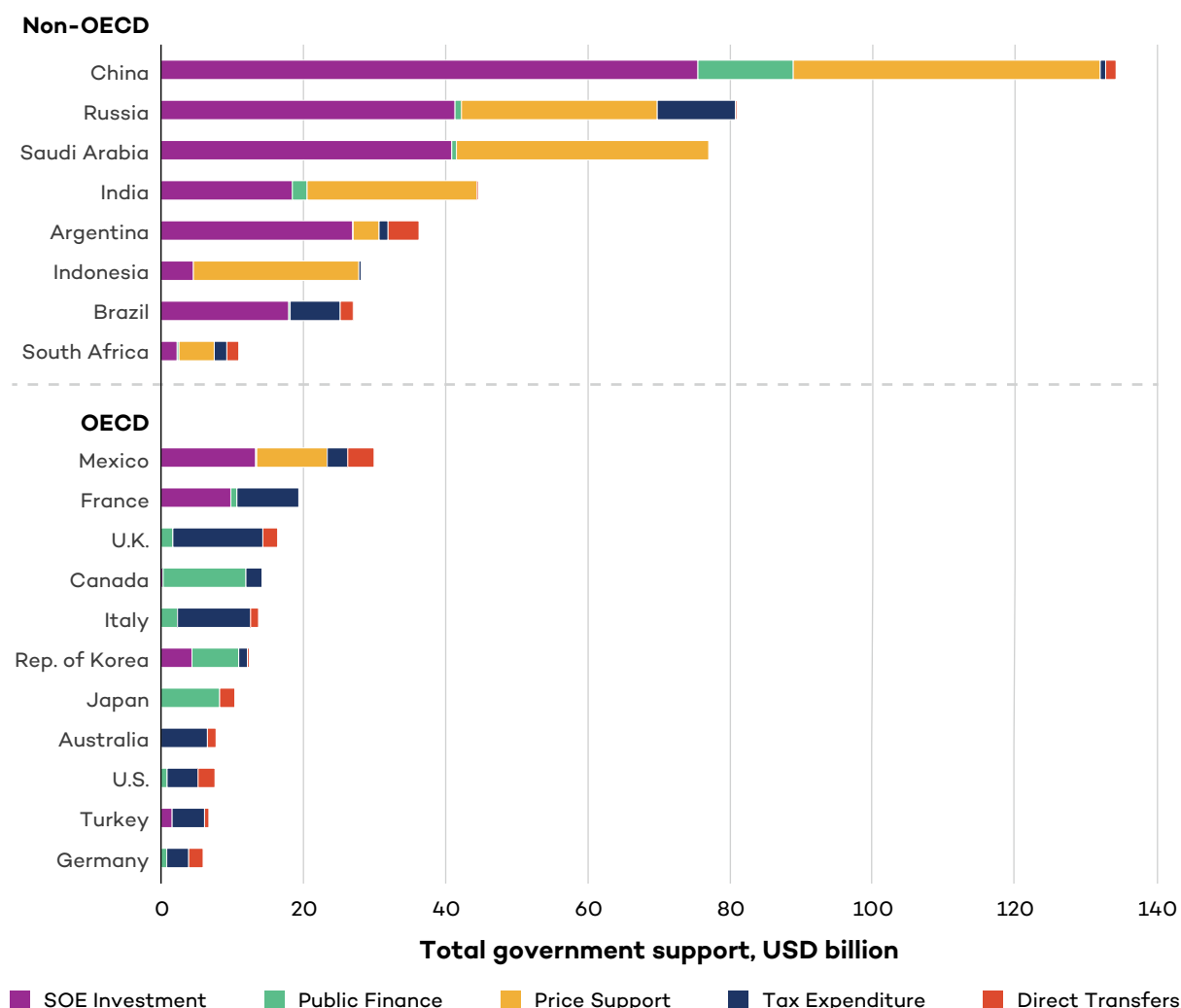
We find that G20 governments continue to provide significant support to fossil fuels.<sup>7</sup> On average, per year in 2017, 2018 and 2019, the G20 governments gave at least \$584 billion in support to fossil fuels at home and overseas. This total consisted of \$25 billion in direct budget transfers (4%), \$79 billion in tax expenditure (14%), \$172 billion in price support (29%), \$51 billion in public finance (9%), and \$257 billion in SOE investment (44%).<sup>8</sup> In terms of stages of fossil fuel activity, the breakdown was made up of \$13 billion to coal production (2%), \$277 billion to oil and gas production (47%), \$126 billion to fossil fuel-based power (22%), and \$168 billion to fossil fuel use by industry, transport, households, and others (29%).

**Figure 2.** G20 government support to fossil fuels per year by stage of fossil fuel-related activity (upper figure) and type of mechanism (lower figure) (annual 2017-2019 average, except public finance, annual 2017-2019 average, USD billion)



<sup>7</sup> While China provided the largest absolute amount of government support to fossil fuels (Figure 2) at \$134 billion (23% of all G20 support, 2017, 2018, and 2019 average), when expressed on a USD per unit of GDP basis, as is done in our scorecards, China is not the largest contributor of government support to fossil fuels.

<sup>8</sup> All currency is in USD unless otherwise indicated.



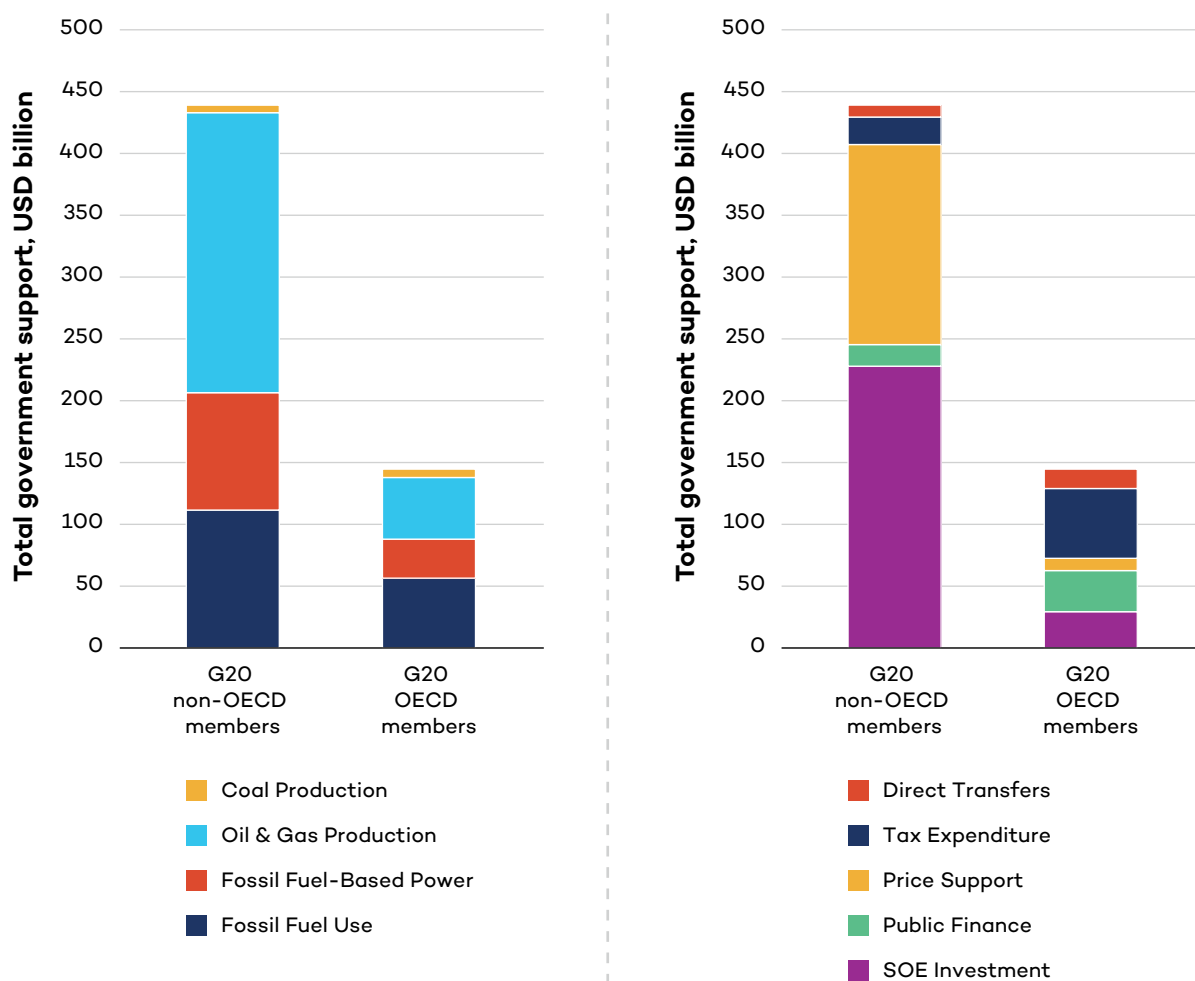
Source: IEA, 2020b; OCI, 2020; OECD, 2020b.

We also find that there are differences in how this government support is distributed between G20 OECD member and non-OECD member countries of the G20 (see Figure 3). OECD member countries of the G20 are providing large tax breaks for fossil fuel producers and users, providing their largest share, 39%, via tax expenditures. Non-OECD member countries, however, provide the largest share of their support, at 52%, via SOE investment. This reflects the energy landscape seen in many non-OECD countries, in which SOEs can account for a large market share of the energy sector. In terms of fossil fuel activity, non-OECD countries provide the largest share of their support to oil and gas production (52%), whereas OECD countries provide the largest portion of their support, 39%, to fossil fuel use.<sup>9</sup> This finding challenges the typical narrative that support for fossil fuel consumption is more of a concern for emerging markets and developing countries.

<sup>9</sup> This may partly reflect countries' endowments in natural resources.



**Figure 3.** Distribution of government support by stage of activity and type of mechanism between G20 OECD and non-OECD member countries (annual 2017–2019 average, except public finance, annual 2017–2018 average, USD billion)"



Source: IEA, 2020b; OCI, 2020; OECD, 2020b.



## 5.1 Scoring G20 Countries

### G20 SCORECARD - OECD MEMBERS

	Germany	France	Japan	Italy	Canada	Australia	United States	Rep. of Korea	Mexico	Turkey	United Kingdom
<b>Overall ranking and score</b>	<b>1st</b> 71/100	<b>2nd</b> 55/100	<b>2nd</b> 55/100	<b>4th</b> 54/100	<b>5th</b> 53/100	<b>6th</b> 52/100	<b>6th</b> 52/100	<b>8th</b> 49/100	<b>11th</b> 48/100	<b>11th</b> 48/100	<b>11th</b> 48/100
1. Transparency	<b>1st</b> Good	<b>3rd</b> Mediocre	<b>11th</b> Opaque	<b>3rd</b> Mediocre	<b>3rd</b> Mediocre	<b>7th</b> Poor	<b>2nd</b> Good	<b>11th</b> Opaque	<b>3rd</b> Mediocre	<b>11th</b> Opaque	<b>11th</b> Opaque
2. Pledges and commitments	<b>1st</b> Very strong	<b>1st</b> Very strong	<b>11th</b> Very weak	<b>7th</b> Weak	<b>4th</b> Mediocre	<b>5th</b> Mediocre	<b>11th</b> Very weak	<b>9th</b> Weak	<b>7th</b> Weak	<b>5th</b> Mediocre	<b>3rd</b> Strong
3. Scale of support for coal exploration, production, processing, and transportation	<b>7th</b> Medium	<b>3rd</b> Very low	<b>10th</b> Medium	<b>1st</b> None identified	<b>3rd</b> Very low	<b>5th</b> Low	<b>6th</b> Low	<b>8th</b> Medium	<b>1st</b> None identified	<b>11th</b> High	<b>8th</b> Medium
4. Scale of support for oil and gas exploration, production, refining, and transportation	<b>1st</b> Low	<b>1st</b> Low	<b>6th</b> Low	<b>1st</b> Low	<b>11th</b> High	<b>1st</b> Low	<b>5th</b> Low	<b>8th</b> Medium	<b>10th</b> High	<b>6th</b> Low	<b>9th</b> Medium
5. Scale of support for fossil fuel power	<b>3rd</b> Low	<b>9th</b> Medium	<b>8th</b> Medium	<b>1st</b> Very low	<b>7th</b> Medium	<b>1st</b> Very low	<b>6th</b> Low	<b>11th</b> High	<b>11th</b> High	<b>3rd</b> Low	<b>3rd</b> Low
6. Scale of support for fossil fuel use	<b>1st</b> Low	<b>6th</b> High	<b>1st</b> Low	<b>11th</b> Very high	<b>1st</b> Low	<b>11th</b> Very high	<b>1st</b> Low	<b>1st</b> Low	<b>11th</b> Very high	<b>11th</b> Very high	<b>7th</b> Very high
7. Progress in ending support for fossil fuels	<b>2nd</b> Poor	<b>11th</b> Very poor	<b>1st</b> Mediocre	<b>7th</b> Very poor	<b>11th</b> Very poor	<b>6th</b> Poor	<b>8th</b> Very poor	<b>4th</b> Poor	<b>2nd</b> Poor	<b>4th</b> Poor	<b>9th</b> Very poor



## G20 SCORECARD – NON-OECD MEMBERS

	<b>Brazil</b>	<b>Argentina</b>	<b>China</b>	<b>Russia</b>	<b>India</b>	<b>Indonesia</b>	<b>South Africa</b>	<b>Saudi Arabia</b>
<b>Overall ranking and score</b>	<b>1st</b> B	<b>2nd</b> B	<b>3rd</b> B-	<b>4th</b> B-	<b>5th</b> C+	<b>5th</b> C+	<b>7th</b> C+	<b>8th</b> C+
1. Transparency	<b>8th</b> Opaque	<b>1st</b> Good	<b>1st</b> Good	<b>5th</b> Poor	<b>1st</b> Good	<b>4th</b> Mediocre	<b>8th</b> Opaque	<b>8th</b> Opaque
2. Pledges and commitments	<b>2nd</b> Mediocre	<b>2nd</b> Mediocre	<b>1st</b> Strong	<b>8th</b> Weak	<b>2nd</b> Mediocre	<b>8th</b> Weak	<b>8th</b> Weak	<b>8th</b> Weak
3. Scale of support for coal exploration, production, processing, and transportation	<b>1st</b> None identified	<b>5th</b> Medium	<b>5th</b> Medium	<b>3rd</b> Very low	<b>7th</b> Medium	<b>4th</b> Low	<b>8th</b> Very high	<b>1st</b> None identified
4. Scale of support for oil and gas exploration, production, refining, and transportation	<b>4th</b> Medium	<b>6th</b> High	<b>5th</b> Medium	<b>7th</b> High	<b>3rd</b> Low	<b>1st</b> Low	<b>1st</b> Low	<b>8th</b> Very high
5. Scale of support for fossil fuel power	<b>1st</b> Low	<b>2nd</b> Medium	<b>4th</b> Medium	<b>7th</b> High	<b>6th</b> High	<b>3rd</b> Medium	<b>4th</b> Medium	<b>8th</b> Very high
6. Scale of support for fossil fuel use	<b>1st</b> Low	<b>1st</b> Low	<b>1st</b> Low	<b>5th</b> Medium	<b>1st</b> Low	<b>7th</b> High	<b>5th</b> Medium	<b>8th</b> Very high
7. Progress in ending support for fossil fuels	<b>1st</b> Mediocre	<b>2nd</b> Mediocre	<b>6th</b> Poor	<b>4th</b> Poor	<b>8th</b> Very poor	<b>6th</b> Poor	<b>4th</b> Poor	<b>2nd</b> Mediocre

Note: See Annex 1 for scorecard indicator details and individual G20 country scorecards for country specific findings.





We find that none of the G20 countries achieves close to the perfect score. The highest aggregate score among the G20 OECD member countries, given to Germany, is still low at 71/100, with Germany continuing to provide support to coal production and fossil fuel use in industry and transport, such as through tax relief to diesel fuel and tax exemptions for aviation and shipping (OECD, 2020b). Mexico, Turkey, and the United Kingdom rank equally, last out of the OECD G20 countries with a score of 48/100. The United Kingdom lacks transparency and continues to provide support for consumers of fossil fuel by foregoing tax revenue and supplying direct budgetary transfers. Mexico continues to provide significant support for oil and gas production and fossil fuel-based power, especially through SOE investment. Turkey also lacks transparency and continues to provide support for coal production and fossil fuel use, predominantly by foregoing tax revenue and providing SOE investment.

Similarly, Brazil, the leader among the G20 non-OECD member countries, still scores only a B (68/100), as it lacks transparency and continues to heavily support oil and gas production, having cut taxes on production from private companies, pardoned tax debt, and opened up new lease auctions to boost its oil and gas production. Saudi Arabia lags the non-OECD group with a score of C+ (43/100), ranking last in almost all categories by providing significant government support to oil and gas production and fossil fuel-based power via large capital expenditure from its SOEs, Saudi Aramco, and Saudi Electric Company, as well as support for fossil fuel use via low energy prices.

## 5.2 Indicator 1: Transparency

Indicator 1 on transparency looks at government recognition of and reporting on direct budget transfers, tax expenditures, and public finance to fossil fuels using four sub-indicators: the government acknowledging that it provides inefficient fossil fuel subsidies, reporting and quantifying the subsidies, engaging in peer reviews, and PFIs providing comprehensive and specific transaction-level data (Annex 1).

### OECD

Germany	United States	Canada	France	Italy	Mexico	Australia	Japan	Rep. of Korea	Turkey	United Kingdom
1st Good	2nd Good	3rd Mediocre	3rd Mediocre	3rd Mediocre	3rd Mediocre	7th Poor	11th Opaque	11th Opaque	11th Opaque	11th Opaque

### NON-OECD

Argentina	China	India	Indonesia	Russia	Brazil	Saudi Arabia	South Africa
1st Good	1st Good	1st Good	4th Mediocre	5th Poor	8th Opaque	8th Opaque	8th Opaque



There are significant differences between G20 governments in terms of their reporting on support for fossil fuels. We find that only six G20 countries have officially publicly reported that they provide inefficient fossil fuel subsidies (Canada, Germany, the United States, China, India, and Indonesia), whereas the United Kingdom denies that it provides any fossil fuel subsidies (under its government’s own definition).

Just under half of G20 governments report on and quantify at least some of their subsidies via a ministry or agency (Australia, France, Germany, Italy, Mexico, Argentina, China, India, and Russia). Just over half have performed or committed to performing a peer review<sup>10</sup> of their fossil fuel subsidies as part of the G20 process: China, Germany, Indonesia, Italy, Mexico, and the United States have completed their reviews; Argentina and Canada are in the process of completing their reviews; and France and India have committed to completing a peer review (Ministry of External Affairs, 2019; OECD, 2019a).

Finally, only two G20 countries, Argentina and the United States, provide transaction-level data on public finance that appears to be comprehensive and specific (see the accompanying Methodology Note for information on the PFIs reviewed for this study).

These identified gaps in transparency mean that estimates in this report are likely to underestimate the actual level of support provided by G20 governments.

### 5.3 Indicator 2: Pledges and commitments

Indicator 2 looks at G20 government pledges to end public support for fossil fuels using three sub-indicators: the number of pledges to end fossil fuel subsidies, the number of pledges to end fossil fuel public finance, and evidence on backtracking on pledges (Annex 1).

#### OECD

France	Germany	United Kingdom	Canada	Australia	Turkey	Italy	Mexico	Rep. of Korea	Japan	United States
1st Very strong	1st Very strong	3rd Strong	4th Mediocre	5th Mediocre	5th Mediocre	7th Weak	7th Weak	9th Weak	10th Very weak	11th Very weak

<sup>10</sup> The G20 fossil fuel subsidy peer review process aims to increase transparency on direct budget transfers and tax expenditure support measures and identify those that should be eliminated. While the reviews call for the measurement of the subsidy element of loan guarantees and direct loans, these reviews would benefit from a wider scope to include public finance, SOE investment, and, where possible, price support measures (Gerasimchuk et al., 2018). Indonesia’s 2019 peer review highlighted the role of government support for its indebted SOEs (OECD, 2019b).



### NON-OECD

Argentina	China	India	Indonesia	Brazil	Russia	Saudi Arabia	South Africa
1st Strong	2nd Mediocre	2nd Mediocre	2nd Mediocre	8th Weak	8th Weak	8th Weak	8th Weak

Many G20 countries have made pledges and commitments to end support to fossil fuels that go beyond the G7 and G20 commitments made every year since 2009. These pledges include those made by signatories to the Convention on Biological Diversity to comply with its Aichi target 3 on phasing out environmentally harmful subsidies by 2020 (Convention on Biological Diversity, 2010) and additional pledges made by individual countries including in their Nationally Determined Contributions. Only the United States and Mexico have made no additional commitments.

About two thirds of G20 countries have also made some level of commitment to end public finance for fossil fuels and, more specifically, to end public finance for coal. All OECD countries have made at least one pledge, whereas, in the non-OECD countries, only Brazil and China have made pledges to end public financing of fossil fuel projects. Pledges include those made through membership in the Powering Past Coal Alliance, the OECD public finance restrictions for export credit agencies, and any additional pledges made by individual countries.

Finally, three countries—Japan, the Republic of Korea, and the United States—have backtracked on previous commitments to restrict public finance for coal. In 2017, the United States reversed restrictions on U.S. support for coal-fired power projects at international financial institutions (U.S. Department of the Treasury, 2017). Despite pledges to end public finance for coal, Japan and the Republic of Korea have allowed export credit agencies to support any coal plant for which an environmental and social impact assessment was completed before January 1, 2017, and “acted upon expeditiously”; projects received support years after this 2017 deadline was reached (DeAngelis & Tucker, 2020).

## 5.4 Indicator 3: Scale of government support for coal exploration, production, processing, and transportation

Indicator 3 examines the scale of government support for coal exploration, production (mining), processing, and transportation based on three sub-indicators: average support per unit of GDP provided through direct transfers and foregone taxation, public finance, and SOE investments (Annex 1).



## OECD

Italy	Mexico	Canada	France	Australia	United States	Germany	Rep. of Korea	United Kingdom	Japan	Turkey
1st None identified	1st None identified	3rd Very low	3rd Very low	5th Low	6th Low	7th Medium	8th Medium	8th Medium	10th Medium	11th High

## NON-OECD

Brazil	Saudi Arabia	Russia	Indonesia	Argentina	China	India	South Africa
1st None identified	1st None identified	3rd Very low	4th Low	5th Medium	5th Medium	7th Medium	8th Very high

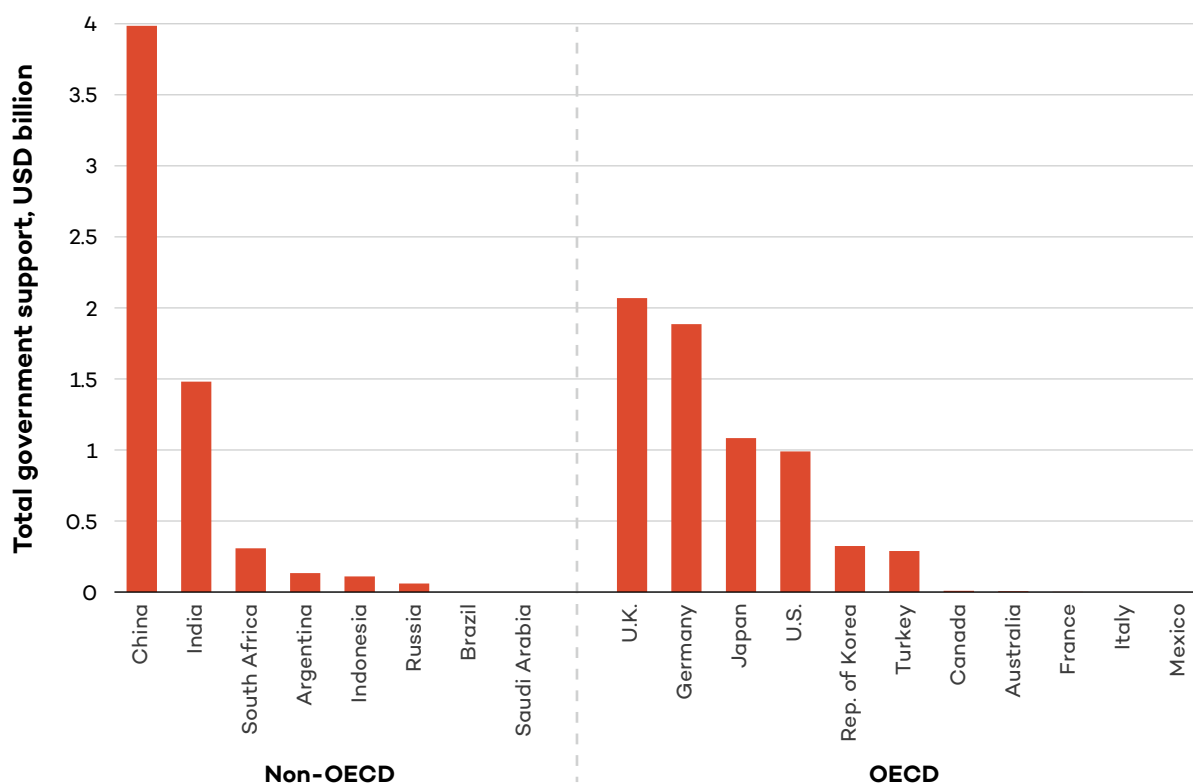
Coal only accounts for 2% (\$13 billion) of the total G20 government spend on fossil fuel (2017–2019 average), yet McGlade and Ekins (2015) estimate that, to keep the increase of global mean temperatures below 2°C, 80% of current coal reserves will need to be left in the ground (from 2010 to 2050).

Despite this, several G20 countries continue to provide support for coal exploration, production, processing, and transportation (Figure 4). Germany,<sup>11</sup> Turkey, the United Kingdom, and South Africa still provide high levels of direct budgetary transfers and forego tax revenue for domestic coal (per unit of GDP). South Africa provides public finance domestically, whereas Japan supplies public finance for overseas projects. China and India’s SOEs also continue to invest heavily in coal. No government support for coal production was identified for Brazil, Italy, Mexico, or Saudi Arabia.

<sup>11</sup> Germany ended subsidies to hard coal production in 2018.



**Figure 4.** G20 government support to coal exploration, production, processing, and transportation (annual 2017–2019 average, USD billion)



Source: IEA, 2020b; OCI, 2020; OECD, 2020b.

## 5.5 Indicator 4: Scale of government support for oil and gas exploration, production, refining, and transportation

Indicator 4 examines the scale of government support for oil and gas exploration, production, refining, and transportation, based on three sub-indicators: average support per unit of GDP provided through direct transfers and foregone taxation, public finance, and SOE investments (Annex 1).

### OECD

Australia	France	Germany	Italy	United States	Japan	Turkey	Rep. of Korea	United Kingdom	Mexico	Canada
1st Low	1st Low	1st Low	1st Low	5th Low	6th Low	6th Low	8th Medium	9th Medium	10th High	11th High





## NON-OECD

Indonesia	South Africa	India	Brazil	China	Argentina	Russia	Saudi Arabia
1st Low	1st Low	3rd Low	4th Medium	5th Medium	6th High	7th High	8th Very high

G20 support for oil and gas exploration, production, refining, and transportation accounts for the largest share of support by activity, at \$277 billion per year or 47% of total average G20 support over the 2017–2019 average (Figure 5).

OCI (2016) determined that depleting the proven reserves in oil and gas fields currently in operation will push global mean temperatures above 1.5°C, even if coal is rapidly phased out. Despite this need to restrict oil and gas production, not a single G20 government has ended its support.

Canada and Saudi Arabia are the worst performers in terms of the scale of support for oil and gas production of OECD and non-OECD member countries, respectively (per unit of GDP) (see Box 1).

The United Kingdom and Russia provide the highest levels of direct transfers and tax exemptions per unit of GDP of G20 OECD and non-OECD member countries, respectively (see Box 2).

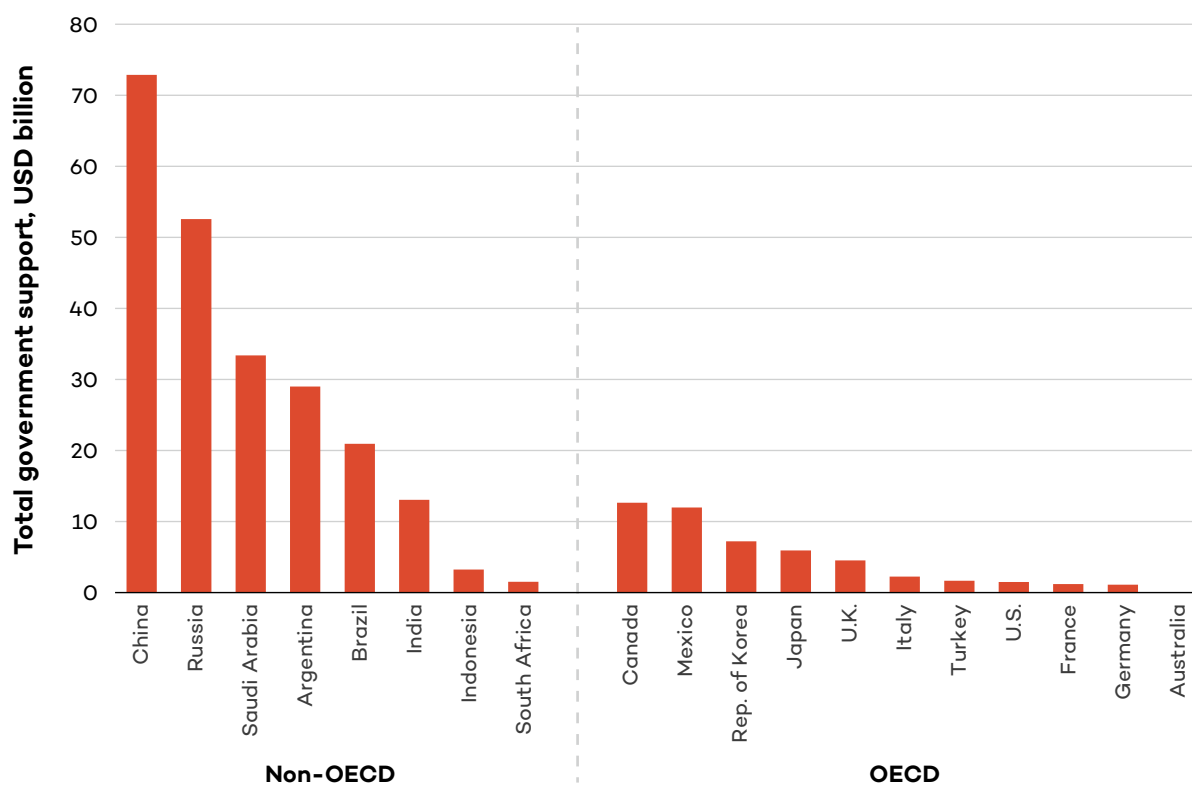
All G20 countries except for Turkey,<sup>12</sup> Argentina, and Indonesia have provided new public finance to oil and gas production, with Canada and Saudi Arabia providing the highest levels of support within the OECD and non-OECD countries, respectively (per unit of GDP). Canada continues to support the sector, although its focus has shifted from an emphasis on exploration to one on the development of infrastructure for production and export, in particular for liquefied natural gas projects.

Finally, Canada, the Republic of Korea, Mexico, Turkey, and all the non-OECD countries provided significant levels of support via SOE investment. Mexico’s state-owned petroleum company, Pemex, and Argentina’s state-owned oil and gas companies, YPF S.A. and Integración Energética Argentina (IEASA, formerly ENARSA), made the largest SOE investments in oil and gas production (per unit of GDP).

<sup>12</sup> Turkey’s PFIs did not supply transaction-level data on their investments and, hence, we have most likely underestimated Turkey’s level of support.



**Figure 5.** G20 government support to oil and gas exploration, production, refining and transportation (annual 2017–2019 average, USD billion)



Source: IEA, 2020b; OCI, 2020; OECD, 2020b.

### Box 1. Saudi Arabia

The Kingdom of Saudi Arabia holds the G20 presidency in 2020. Despite its commitment to remove inefficient fossil fuel subsidies, the government has requested all mentions of the term “subsidy” be removed from the G20 expert briefings and policy proposals (Farand, 2020).

Saudi Arabia has come in as the worst performer in ending government support for fossil fuels compared with other G20 non-OECD member countries, having provided \$77 billion per year (2017–2019 average) (see the Saudi Arabia Country Scorecard). It supplies the largest amount of government support to fossil fuel of all the G20 countries, per unit of GDP.

Saudi Arabia has been called “the world’s purest example of a petro-state,” with oil exports providing more than 77% of export revenue, 69% of its national budget expenditure, and 26% of its 2019 GDP (Krane, 2019, p. 3; Ministry of Finance, 2020; Organization of Petroleum Exporting Countries, 2020). In addition, large domestic subsidies for energy, and therefore very low oil prices, have allowed the country to become the world’s fifth-largest oil consumer (Krane, 2019).



The government introduced energy subsidy reforms in 2016 and 2018 that increased fuel and electricity prices as part of a larger economic reform package, Vision 2030, that includes goals around cleaner energy and diversification (Krane, 2019; Kingdom of Saudi Arabia, 2019; Lahn, 2016). These reforms have been linked to a successful reduction in energy consumption. However, prices remain a small fraction of corresponding international prices—for example, domestic gasoline (91 Octane) and diesel prices were 55% and 18%, respectively, of international benchmark prices in 2018 (Krane, 2019, Table 5). Also, as part of Vision 2030, the government took steps toward diversifying away from oil by privatizing around 1.5% of its oil and gas SOE, Saudi Aramco, in 2019 (Gross, 2019).

While Saudi Arabia started to publicly publish its budget for the first time in 2016, there remains a major lack of transparency, particularly around direct budgetary transfers, tax expenditures, and actual costs of production. Therefore, levels of government support to fossil fuels in Saudi Arabia are very difficult to estimate (Lahn & Stevens, 2014). In addition to publicly available data on public finance and SOE investment data, our estimates rely on the IEA's estimate of price support.

Saudi Arabia remains a large supporter of oil and gas production, providing \$33 billion annually (2017–2019 average). However, its support to oil and gas production dropped by 47% in absolute terms relative to the 2014–2016 average, predominantly due to a drop in investment by Saudi Aramco over the period.

In terms of support to fossil fuel consumption, Saudi Arabia is also one of the world's largest subsidizers, providing \$27 billion annually (2017–2019 average). However, some authorities, including the Saudi Arabian government, criticize the IEA price-gap approach to estimating fuel consumption subsidies in countries with low fossil fuel production costs, like Saudi Arabia (IEA, 2020c). The costs of oil production are argued to be very low compared with international benchmarks: oil production capital costs were sunk many years ago, and the oil fields are large (Marcel & Mitchell, 2006). Therefore, if the actual cost of production in Saudi Arabia were used as a benchmark, rather than international prices, estimated subsidies would be lower than the IEA estimates. A counter-argument says that, if Saudi Arabia sells oil only at the cost of production, it is foregoing the economic value of the product that can be earned by selling it at its full economic value—which in turn can raise revenue to be reinvested in economic diversification and other public needs. This leads to an inefficient allocation of resources for the economy that will lower long-term economic growth (IEA, 2020c).

The Kingdom of Saudi Arabia has started taking important steps toward building a more transparent and sustainable economy. However, these efforts must be complemented with greater efforts to diversify the economy and reduce their dependence on fossil fuels.



## Box 2. Tax expenditure as a form of government support for fossil fuels

The value of foregone fossil fuel taxation in the G20 reached \$79 billion per year (2017–2019 average). The G20 OECD countries provided the lion's share, foregoing tax revenue on fossil fuels at a value of \$56 billion per year, accounting for 39% of the G20 OECD countries' total support to fossil fuels.

Foregone taxes (tax expenditures) include reduced rates or exemptions from value-added tax or tax breaks for diesel use in transport. These exemptions reduce the revenue that a government would have received if it had charged the full rate of tax on producers and users of fossil fuels. Changes in tax expenditure can arise from a change in tax rates, which mechanically alters the revenue foregone, as well as from changes in consumption and oil prices.

Of the G20 OECD member countries, Australia, France, Italy, Turkey, and the United Kingdom were large contributors of support via tax expenditures during 2017–2019. Eighty-four per cent of Australia's total support to fossil fuels is via foregone taxation (\$6.5 billion per year, 2017–2019 average), with the government supplying a wide range of measures including capital expenditure deductions for mining and petroleum operations, fuel tax credits for industry, reduced fuel excise rates, and various tax offset schemes for fossil fuel-related infrastructure (OECD, 2020b). Nine of the 10 largest fossil fuel producers (by revenue) in Australia paid no corporate income tax in 2017–2018 (Market Forces, 2020).

While total foregone taxation in G20 countries has decreased by 19.5% relative to the 2014–2016 average, five countries—Australia, France, Mexico, Turkey, and Russia—increased their overall levels of foregone taxation. Increases in tax expenditure can arise from increases in tax rates. Russia was the worst performer with a huge 79% increase relative to its 2014–2016 average. Russia has been subsidizing an increasing portion of its fossil fuel production. According to estimates from the Ministry of Finance of the Russian Federation (2019) and the Accounting Chamber of the Russian Federation (2020), in 2013, the volume of oil production eligible for subsidized tax rates was under 30% of the total. In 2019, this volume exceeded 50%, and in 2035, it is expected to exceed 90%. As a result, the Ministry of Finance estimates that this trend will continue, and government revenue foregone from under-taxing oil extraction in Russia could reach \$32 billion by 2033 (RBC, 2019).

G20 OECD member countries, in particular, continue to be large providers of support through foregone taxation. G20 governments should charge the full rate of tax on producers and users of fossil fuels: \$79 billion each year (2017–2019 average) of foregone revenue could be directed toward urgent COVID-19 recovery needs and areas like health, social support, and the clean energy transition.



## 5.6 Indicator 5: Scale of government support to fossil fuel-based power

Indicator 5 examines the scale of government support for fossil fuel-based power, including co-generation of electricity and heat from coal, oil, and gas, and is based on three sub-indicators: average support per unit of GDP provided through direct transfers, foregone taxation, and price support;<sup>13</sup> public finance; and SOE investments (Annex 1). It also captures support to fossil fuel use for electricity generation.

### OECD

Australia	Italy	Germany	Turkey	United Kingdom	United States	Canada	Japan	France	Mexico	Rep. of Korea
1st Very low	1st Very low	3rd Low	3rd Low	3rd Low	6th Low	7th Medium	8th Medium	9th Medium	11th High	11th High

### NON-OECD

Brazil	Argentina	Indonesia	China	South Africa	India	Russia	Saudi Arabia
1st Low	2nd Medium	3rd Medium	4th Medium	4th Medium	6th High	7th High	8th Very high

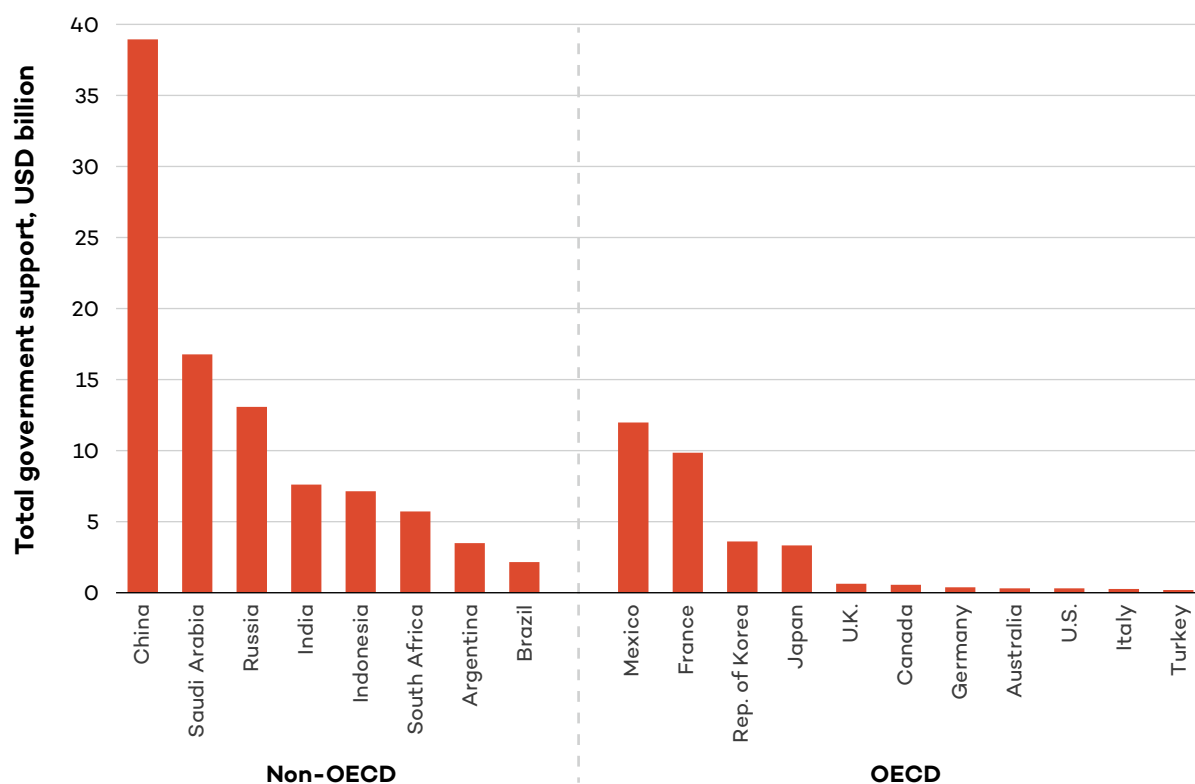
The IEA found that the power sector accounted for nearly two thirds of global energy-related carbon dioxide emissions growth in 2018 (IEA, 2020a). Meanwhile, G20 support for fossil fuel-based power remains large at \$126 billion per year (2017–2019 average), accounting for 22% of the total support by activity (Figure 6). The Republic of Korea, Mexico, and Saudi Arabia are the worst performers in terms of levels of support for fossil fuel-based power (per unit of GDP).

Mexico and Saudi Arabia provide the highest levels of direct budget transfers, tax expenditure, and price support (per unit of GDP) of the OECD and non-OECD countries, respectively. Mexico's support was predominantly made up of direct budgetary transfers to CFE, the state-owned electricity utility, to make up for electricity tariffs that are below cost. No direct transfers, tax expenditure, or price support was identified for only four OECD countries: France, Italy, Japan, and the United Kingdom.

<sup>13</sup> The OECD's database of direct budget transfer and tax expenditure and the IEA's price support measures provide estimates of government support for fossil fuel use for electricity generation. However, neither data set is complete for all G20 countries. Therefore, where data was available from both sources for a country, we chose the support measure that was higher for the G20 scorecards. Hence the indicator captures either direct budget transfers plus tax expenditures or price support for each country.



**Figure 6.** G20 government support to fossil fuel-based power (annual 2017–2019 average, USD billion)



Source: IEA, 2020b; OCI, 2020; OECD, 2020b.

Over three quarters of G20 countries provided new public finance to fossil fuel-based power, with Japan and India providing the highest levels of support respectively within the OECD and non-OECD member countries (per unit of GDP). Despite pledges to end public finance for domestic coal-fired power and the OECD agreement on export credits, Japan and the Republic of Korea continue to finance coal-fired generation projects abroad through their export credit agencies (DeAngelis & Tucker, 2020). Australia, Turkey,<sup>14</sup> Indonesia, and South Africa were the only G20 countries that did not provide new public finance to fossil fuel-based power.

Finally, around half of the G20 countries provided significant levels of support to fossil fuel-based power via SOE investment, with France’s *Électricité de France* and Saudi Arabia’s *Saudi Electric Company* providing the largest capital expenditure (per unit of GDP) within the G20 OECD and non-OECD countries, respectively.

Scaling up renewables and implementing government support for renewable energy has been shown to help governments reform and reduce subsidies and other support measures for fossil fuels (Matsuo & Schmidt, 2017).

<sup>14</sup> Turkey’s PFIs did not supply transaction-level data on their investments and, hence, we have most likely underestimated Turkey’s level of support.



## 5.7 Indicator 6: Scale of government support for fossil fuel use by industry, transport, households, and others

Indicator 6 examines the scale of government support (direct budget transfer and tax expenditure or price support<sup>15</sup>) for fossil fuel use by industry, transport, households, and other sectors based on one sub-indicator: average support per unit of GDP provided through direct transfers, foregone taxation, or price support (see Annex 1). It does not look at support for fossil fuel use in electricity generation, which is already captured in indicator 6, and no public finance or SOE investment for fossil fuel use was identified during the period.

### OECD

Canada	Germany	Japan	Rep. of Korea	United States	France	United Kingdom	Australia	Italy	Mexico	Turkey
1st Low	1st Low	1st Low	1st Low	1st Low	6th High	7th Very high	11th Very high	11th Very high	11th Very high	11th Very high

### NON-OECD

Argentina	Brazil	China	India	Russia	South Africa	Indonesia	Saudi Arabia
1st Low	1st Low	1st Low	1st Low	5th Medium	5th Medium	7th High	8th Very high

G20 countries continue to heavily support fossil fuel use by industry, transport, households, and others, providing the second-largest portion of government support by activity at \$168 billion (29% of the total support by activity) on average per year in 2017, 2018, and 2019.

Some 39% of G20 OECD countries' total support goes to fossil fuel use, larger than any other fossil fuel-related activity, with Australia, Italy, Mexico, Turkey, and the United Kingdom continuing to provide significant levels of support to fossil fuel use (per unit of GDP). Mexico and Italy offer a range of fuel tax credits and exemptions, predominantly on diesel and petroleum consumption (OECD, 2020b) (see Box 2). This challenges the typical narrative that support for fossil fuel consumption is more of a concern for emerging markets.

<sup>15</sup> The OECD's database of direct budget transfers and tax expenditure and the IEA's price support measures provide estimates of government support for fossil fuel use (oil, gas, coal, etc.) by industry, transport, households, and others. However, neither data set is complete for all G20 countries. Therefore, where data was available from both sources for a country, we chose the support measure that was higher for the G20 scorecards. Hence the indicator captures either direct budget transfers plus tax expenditure or price support for each country.





Among the non-OECD G20 countries, Saudi Arabia and Indonesia provide the highest levels of support to fossil fuel use (per unit of GDP) by continuing to support low energy prices for consumers.

G20 governments should remove energy subsidies on fossil fuel use, but they must make sure to implement well-designed and targeted support measures that ensure poor and vulnerable consumers can still access energy.

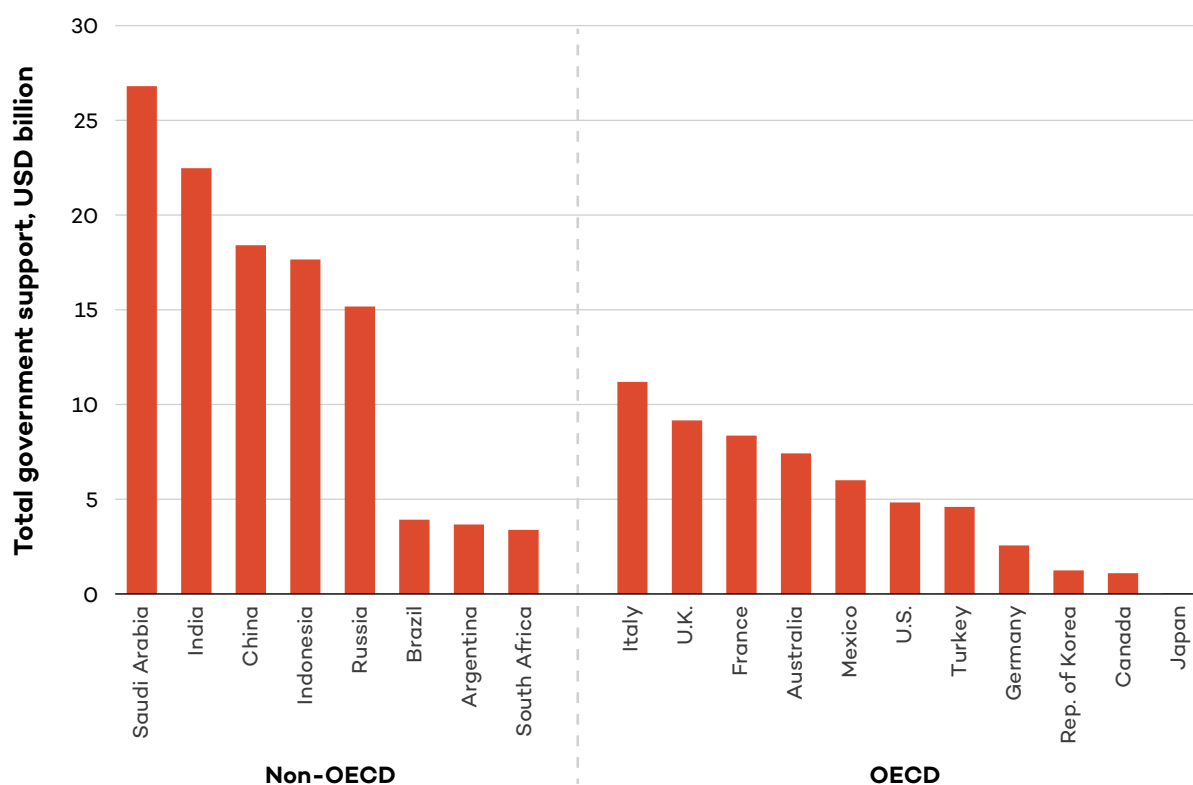
Reforming subsidies for energy use can have a profound impact on the cost of living or doing business. Such a change can lead to major concerns for consumers, such as those raised by truckers protesting diesel price increases in Brazil (Paraguassu & Maia, 2018). But there is ample evidence that shows that subsidy reform policies can be introduced in a way that protects the vulnerable and improves equity (Laderchi, 2014; Yemtsov & Moubarak, 2018). Many fossil fuel subsidies for consumers are regressive, with most benefits going to richer consumers who can afford to pay more (Coady et al., 2015). The savings to governments from reforms can be redirected to policies that better target consumers, improving outcomes for low-income and vulnerable consumers (Beaton et al., 2013).

When designing subsidy reforms, governments need to ask who should benefit from subsidies and whether there is an alternative way to support them—whether governments can subsidize the consumer or another public service rather than the fossil fuel itself. Subsidies that are important for energy access can then be clustered only on those users who need the assistance—this appears to be particularly important with respect to price support for liquefied petroleum gas and electricity (Sharma et al., 2019; Zinecker et al., 2018). Regarding better alternatives to subsidies, surveys or focus group discussions can be used to help identify what support people would most prefer instead of subsidies, from cash transfers to affordable and quality education or healthcare.

Reforming consumer subsidies is more pressing than ever in the period of COVID-19. Governments are spending resources in a way that predominantly benefits richer consumers when they could use this revenue to address the health and economic crisis. In the meantime, designing targeted consumer support will be important for G20 governments in the short- and medium-terms as more households and businesses experience energy access issues as an impact of the COVID-19 crisis (OECD, 2020 forthcoming).



**Figure 7.** G20 government support to fossil fuel use (annual 2017–2019 average, USD billion)



Source: IEA, 2020b; OECD, 2020b.

## 5.8 Indicator 7: Progress in ending government support for fossil fuels

Our results show that, overall, G20 support to fossil fuels dropped by 9% in absolute USD terms between the 2014–2016 average and the 2017–2019 average. Public finance saw the largest drop at 32%, whereas SOE investment actually increased by 4.6%.

While an overall drop in support occurred, this was not based on a consistent decline across G20 countries over time: seven of the G20 countries increased their support over the period, including Australia, Canada, China, France, India, Russia, and South Africa (Figure 4).

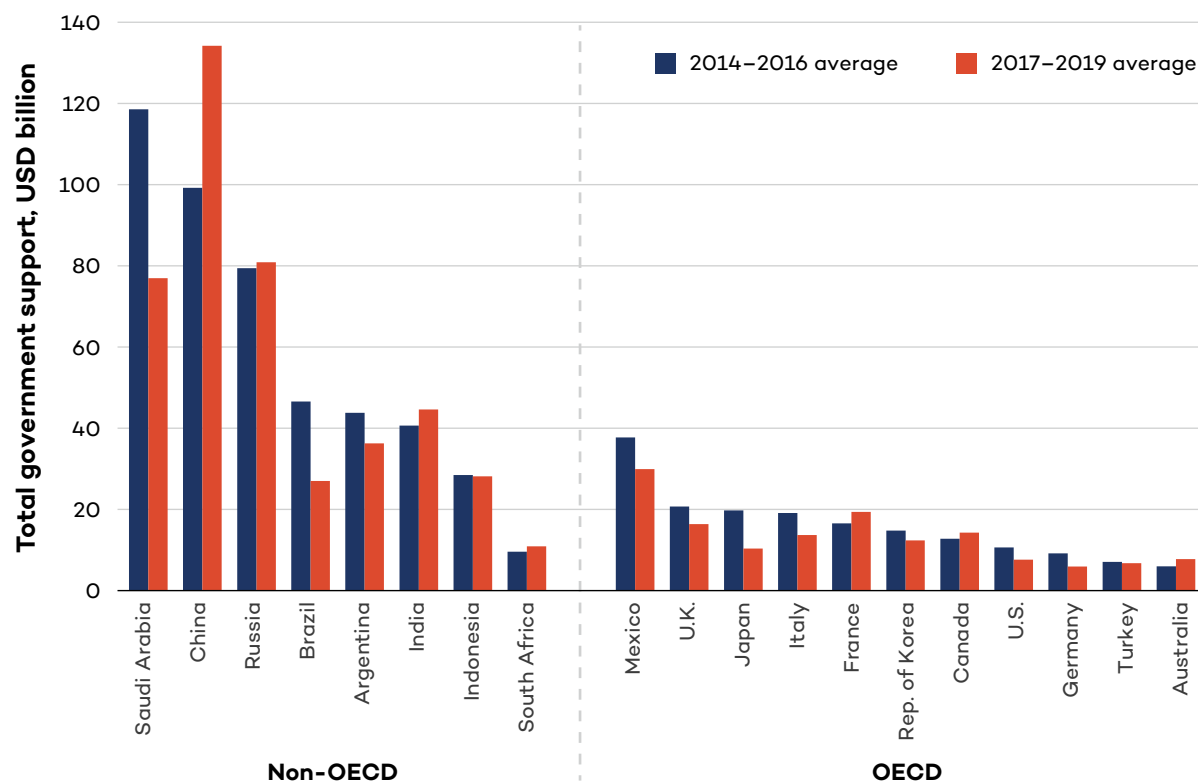
Government support, such as direct budget transfers, tax expenditures, and price support measures for fossil fuel use or consumption, fluctuate with oil price changes.<sup>16</sup> The price support estimates from the IEA are particularly sensitive to reference prices, which are calculated for fuels using international prices as a benchmark (IEA, 2020c). Government support for activities related to coal, oil, and gas production also fluctuates with oil prices but in a less predictable way. On average, oil prices dropped around 3% between the 2014–2016

<sup>16</sup> These forms of government support also fluctuate with changes in tax rates and consumption levels.



and 2017–2019 periods (authors’ calculation based on BP, 2019), indicating that around a third of G20 countries’ decrease in support can be attributed to oil price reductions.

**Figure 8.** G20 government support to fossil fuels by country (annual 2014–2016 and 2017–2019 averages, USD billion)



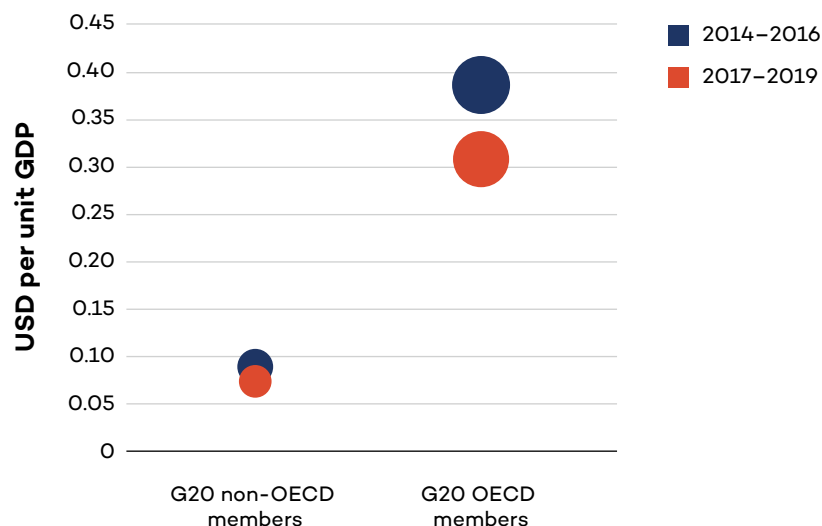
Source: IEA, 2020b; OCI, 2020; OECD, 2020b.

When looking at overall changes<sup>17</sup> in government support within the two different country groups (OECD and non-OECD), we see different paths of progress (Figure 5). OECD countries have reduced their total support to fossil fuels by 17% in absolute USD terms and 17% on a per unit of GDP basis between the 2014–2016 and 2017–2019 averages. Non-OECD countries, on the other hand, reduced their support by 6% in absolute USD terms. But on a per unit of GDP basis, these countries have reduced their support by 20%. This indicates that emerging economies in the G20 have managed to hold their government support levels to fossil fuels relatively steady while they undergo GDP growth (Figure 9).

<sup>17</sup> Note that government support fluctuates with changes in oil prices, tax rates, exchange rates, and consumption levels, and so all changes cannot be attributed to government reform.



**Figure 9.** Total G20 government support per unit of GDP (y-axis) and in absolute USD (dot size) by time period (blue dot is 2014–2016 average and red dot is 2017–2019 average) and country group (x-axis, OECD and non-OECD members)



Source: IEA, 2020b; OCI, 2020; OECD, 2020b.

In our scorecards, indicator 7 examines the change in government support using five sub-indicators that we will examine in more detail in this section: the change in support for oil consumption (looking at direct budget transfers and tax expenditures or price support and normalizing for oil price, demand, and currency fluctuations), as well as the change in public finance and the change in SOE investment between the 2017–2019 and the 2014–2016 annual averages. It also examines new COVID-19 government recovery support to fossil fuels (as of August 12, 2020).

### OECD

Japan	Germany	Mexico	Rep. of Korea	Turkey	Australia	Italy	United States	United Kingdom	Canada	France
1st Mediocre	2nd Poor	2nd Poor	4th Poor	4th Poor	6th Poor	7th Very poor	8th Very poor	9th Very poor	11th Very poor	11th Very poor

### NON-OECD

Brazil	Argentina	Saudi Arabia	Russia	South Africa	China	Indonesia	India
1st Mediocre	2nd Mediocre	2nd Mediocre	4th Poor	4th Poor	6th Poor	6th Poor	8th Very poor



It should be noted in general that the scoring across all countries is quite poor, with no country reaching a high score. Next, we take a closer look at each progress sub-indicator.

### 5.8.1 Progress in Ending Oil Consumption Subsidies

Sub-indicator 7A looks at the change in support for oil consumption (selecting the larger of either direct budget transfers plus tax expenditures or price support for oil consumption for each country), normalizing for oil price, demand, and currency fluctuations (2017–2019 average vs. 2014–2016 average) (see the Methodology Note for further details).

**Table 5.** Change in oil consumption support in OECD countries, normalized for oil price, demand, and currency fluctuations (2017–2019 average vs. 2014–2016 average)

OECD Countries	Japan	Turkey	Italy	United Kingdom	Rep. of Korea	Canada	United States	Germany	Mexico	Australia	France
Per cent change	-53%	-44%	-40%	-27%	-21%	-20%	-16%	-10%	-10%	32%	32%

Source: BP, 2019; IEA, 2020b; OECD, 2020a, 2020b; World Bank, 2020.

**Table 6.** Change in oil consumption support in non-OECD countries, normalized for oil price, demand, and currency fluctuations (2017–2019 average vs. 2014–2016 average)

Non-OECD Countries	Brazil	Argentina	Saudi Arabia	South Africa	India	Russia	China	Indonesia
Per cent change	-84%	-46%	-32%	-18%	-17%	1%	19%	47%

Source: BP, 2019; IEA, 2020b; OECD, 2020a, 2020b; World Bank, 2020.

Support for oil consumption dropped in most G20 countries (Tables 4 and 5), with Japan and Brazil seeing the largest reductions (the 2017–2019 vs. the 2014–2016 average), indicating that some level of reform of oil consumption subsidies has taken place. For example, Brazil experienced declines in consumer fuel tax reductions through decreases in the Program of Social Interaction (Programas de Integração Social) and Contribution for the Financing of Social Security (Contribuição para o Financiamento da Seguridade Social) between 2011 and 2017 (Roth & Kuehne, 2019). The reduction in support to oil consumption has not been consistent across all G20 countries: consumption subsidies have increased<sup>18</sup> in Australia, France, Indonesia, China, and Russia.

<sup>18</sup> These increases may be partly attributed to increases in tax rates in those countries.



## 5.8.2 Progress in Ending Public Finance for Fossil Fuels

Sub-indicator 7B looks at the per cent change in finance provided by PFIs for domestic and international projects relating to fossil fuels over the two periods: the 2017–2018 average vs. the 2014–2016 average.

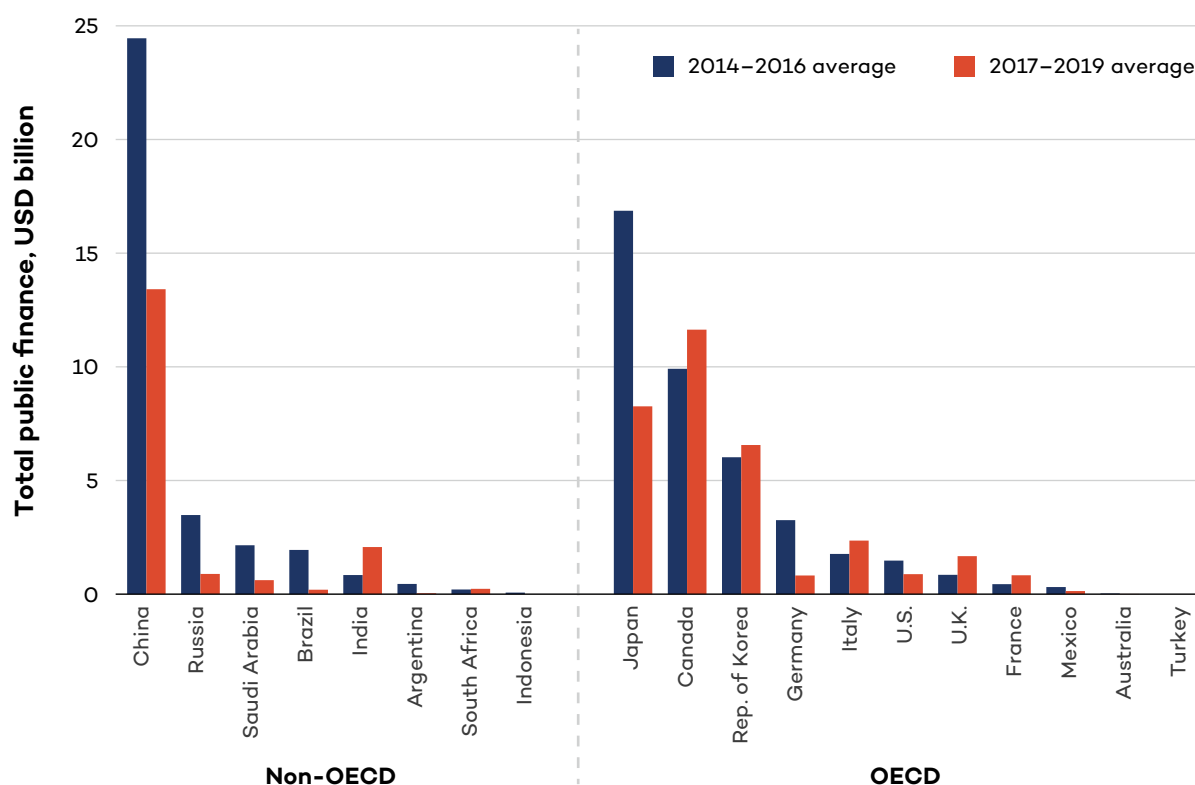
Overall, public finance accounted for 8.7% of total G20 government support to fossil fuels over 2017–2018 at an annual average of \$51 billion to oil, gas, and coal (Figure 10). This is a decrease of 32% relative to the 2014–2016 average; however, this drop was largely driven by a spike of \$44 billion in support from China for a handful of large oil and gas projects in 2016 rather than a consistent decline across G20 countries over time. Troublingly, Canada, Germany, India, Italy, the Republic of Korea, South Africa, and the United Kingdom all increased the amount of public finance they committed to fossil fuels on average between 2014 and 2018. Poor reporting from PFIs means that these figures are likely underestimated, with indirect support through related infrastructure like roads and ports, advisory services, technical assistance, and financial intermediaries being particularly difficult to track.

China, Canada, Japan, and the Republic of Korea were the four largest providers of public finance for fossil fuels for both periods reviewed (in absolute USD terms). The China Development Bank and Export Development Canada were consistently the largest providers by institution. By category of institution, export credit agencies provided the highest volume of public finance for fossil fuels. Previous research has also shown that export credit agencies had the worst ratio of fossil fuel to clean energy support compared to other PFIs, at nearly 14 times as much support for fossil fuels than for clean energy over 2016–2018 (Tucker et al., 2020).

However, there is important leadership being taken by a number of PFIs, with the European Investment Bank, the World Bank Group, CDC Group, Agence française de développement, Ireland Strategic Investment Fund, Swedfund, and Sweden's export credit agencies, among others, recently implementing policies to limit all or most of their finance for oil, gas, and coal. As PFIs are given broader mandates and increased lending capacity as part of governments' COVID-19 responses, it is even more critical for G20 governments to use PFIs as a lever to speed a just energy transition away from fossil fuels rather than helping lock in their use.



**Figure 10.** Public finance to fossil fuels by country (annual 2014–2016 and 2017–2018 averages, USD billion)



Source: OCI, 2020.

### 5.8.3 Progress in Ending SOE Investment in Fossil Fuels

Sub-indicator 7C looks at the per cent change in SOE investment provided for fossil fuels over the two periods: the 2017–2019 vs. 2014–2016 average.

At an average of \$257 billion per year (2017–2019 average), SOE investment accounts for the largest share of G20 countries’ government support to fossil fuels by support type, at 44% (Figure 11). The latest estimate signals an increase of 4.6% relative to the 2014–2016 average (in absolute USD terms); SOE investment is the only type of G20 government support to have increased overall.

Out of the thirteen G20 countries in which national-level majority-government-owned SOEs operate, Argentina, China, Russia, and Saudi Arabia are the largest providers of SOE investment in absolute USD terms. Argentina’s level of SOE investment, in particular, is likely much higher: due to poor transparency, the investment figures for the coal SOE Yacimientos Carboníferos Río Turbio were not available, and subnational-level SOEs were out of the scope of this work. The lack of data on Argentina’s SOEs may have resulted in a higher overall score for Argentina in the G20 non-OECD member country scorecard.

Between 2014 and 2019, six G20 countries moved in the wrong direction. Argentina, Canada, China, India, Indonesia, and Russia all increased their SOE investment for fossil

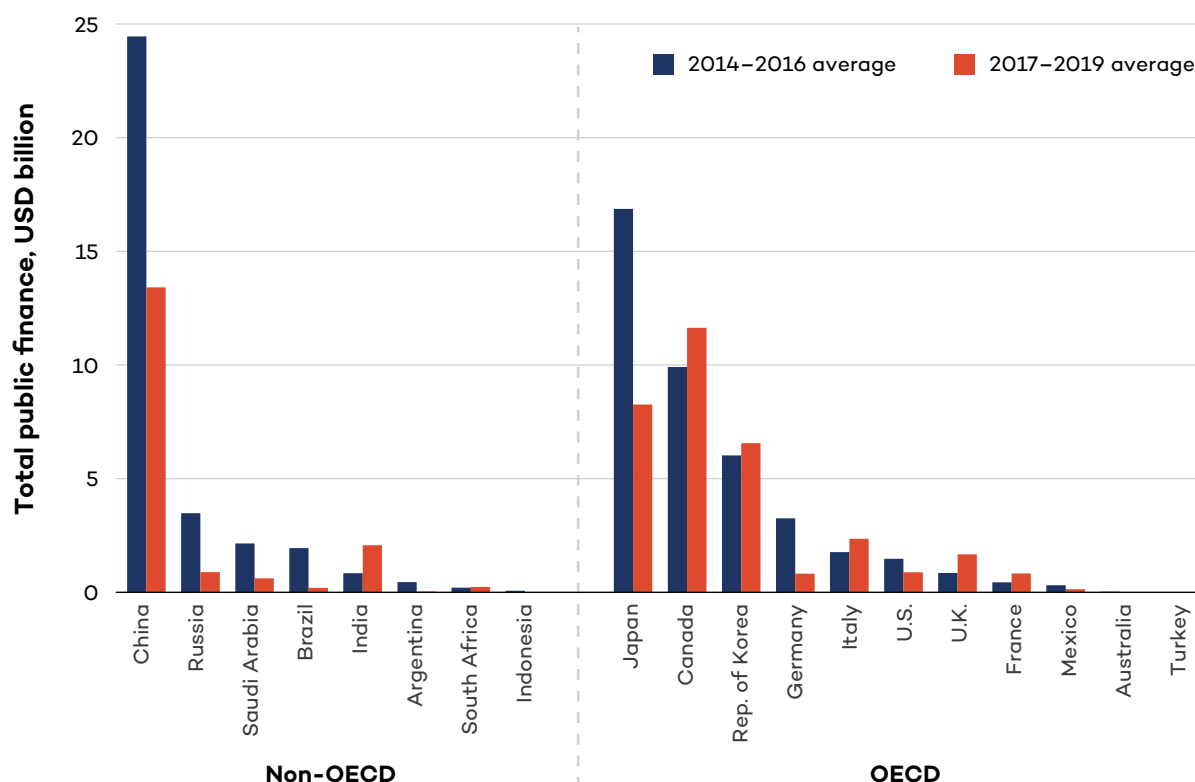




fuels relative to the 2014–2016 average. China’s 91% increase was provided by three SOEs whose core activities are in the oil and gas sectors, namely the Sinopec Group, CNPC, and CNOOC, for an aggregate capital expenditure totalling over \$75 billion in 2019. Among the G20 countries that managed to reduce their SOE investment over the same period, Saudi Arabia stands out, given the significant role of SOEs in its energy system. However, it’s 32% decrease was mostly driven by a government decision in 2019 to partly divest from Saudi Aramco by selling its shares on public markets in order to reduce their reliance on fossil fuel revenue (BBC News, 2020).

Given the key role of SOEs in the energy sector in several countries, where they also tend to be developmental drivers and providers of jobs, governments wanting to transition away from fossil fuels need to enable an SOE transition, including their diversification away from fossil fuels. The Indian SOE CIL provides a good example of this strategy, with their recent investments in solar power generation in an attempt to diversify away from coal (Narayan, 2018).

**Figure 11.** SOE investment for fossil fuels by country (annual 2014–2016 and 2017–2018 averages, USD billion)



Source: Authors’ elaboration based on data from Overseas Development Institute.



## 5.8.4 Public Money Commitments in Response to the COVID-19 Crisis

Two sub-indicators, 7D and 7E, look at public money committed to sectors responsible for fossil fuel consumption and production in response to the COVID-19 crisis: 7D captures the scale of support provided, and 7E captures the share that is considered “conditional” on certain environmental requirements. These data are drawn from the Energy Policy Tracker (2020) initiative, an ongoing collaboration of more than 15 non-profit organizations and universities to report on how public money has been committed to the energy sector in recovery packages.<sup>19</sup>

G20 countries have allocated at least \$170 billion in public money commitments to production and consumption in four key sectors<sup>20</sup> (mobility, resources, power, and buildings—with support to mobility, especially airline and airport bailouts, accounting for around two thirds of the total support by value) in response to the COVID-19 crisis (Figure 8, as of August 12, 2020). This support ranges in form from equity injections, loans, and loan guarantees to the provision of grants and tax exemptions to the relaxing of environmental standards. This is likely an underestimate due to the dynamic nature of government responses to the COVID-19 crisis and a lack of transparency that doesn’t allow for the quantification of many announced policies.

France has pledged the largest amount of COVID-19 support to fossil fuel production and consumption of the G20 OECD member countries, followed closely by Canada (per unit of GDP). The government of Alberta, Canada, has provided a loan guarantee for the Keystone XL pipeline worth \$4.4 billion (USD) (Government of Alberta, 2020). The Republic of Korea provided \$2.49 billion in emergency bailout loans for Doosan Heavy Industries & Construction, a major coal plant manufacturer (KoreaExim, 2020).

Indonesia has supplied the largest amount of fossil fuel support of the G20 non-OECD countries (per unit of GDP), having committed large sums to prevent the bankruptcy of its energy-producing and consuming SOEs, including PLN (electricity utility, \$3.1 billion), Pertamina (oil and gas, \$2.6 billion), and Garuda Indonesia (airline, \$582 million). The Energy Policy Tracker identified COVID-related support for fossil fuels for Japan, Argentina, and Brazil, but this support could not be quantified as of August 12, 2020.

In some cases, governments have made this support “conditional” on certain climate targets or additional pollution reduction requirements. Canada, France, Germany, and the United Kingdom were the only G20 countries to make parts of their quantified COVID-19 public money commitments to fossil fuels conditional on environmental requirements, and the stringency of these requirements varies greatly. For example, France has bailed out the Air France airline on the requirement that it reduces its emissions. Further, the Government

---

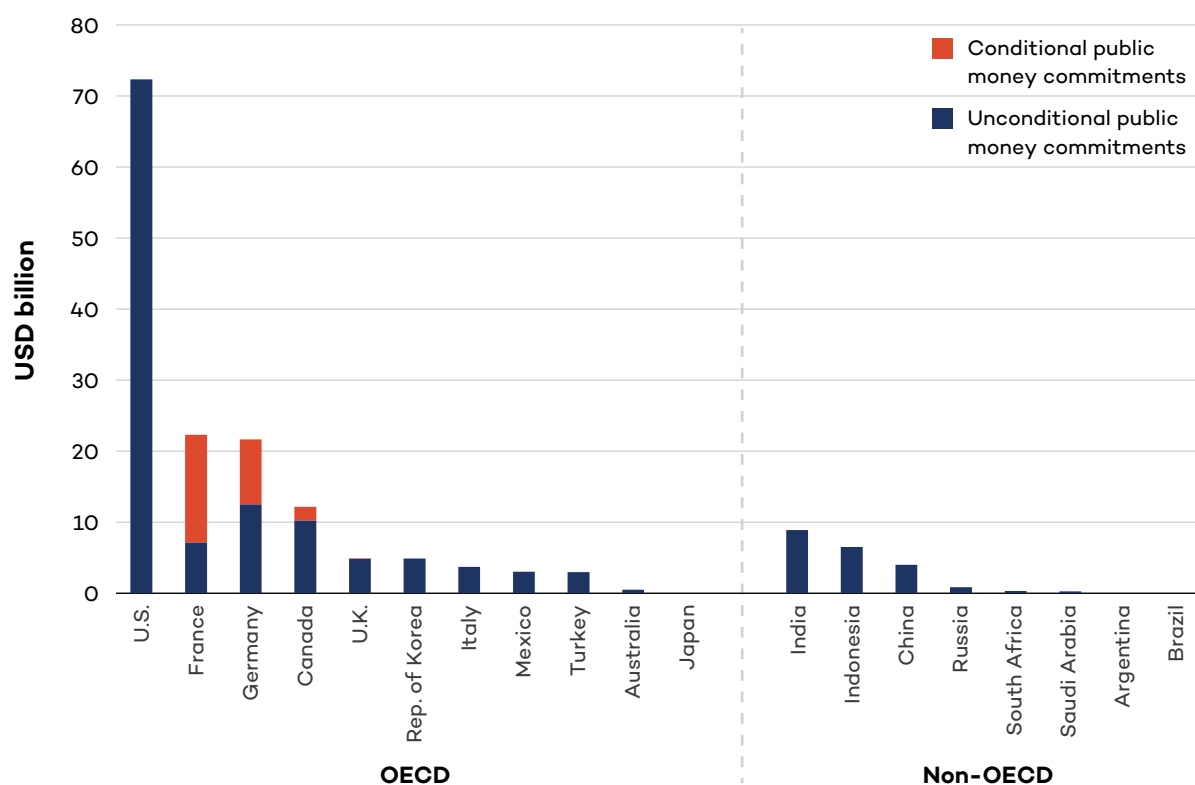
<sup>19</sup> This report draws on data as of August 12, 2020; readers can refer to the tracker website for more up-to-date information, updated on a weekly basis: <https://www.energypolicytracker.org/>

<sup>20</sup> The methodology for tracking government support to fossil fuels during 2014–2019 differs to that used to track COVID-19 public money commitments in 2020. A key difference, for example, is that the OECD inventory (direct transfers and tax expenditures) does not capture support to fossil fuel-consuming capital such as airline bailouts, whereas this form of support is captured in the Energy Policy Tracker (COVID-19 public money commitments).



of Canada has committed \$1.26 billion (USD) toward cleaning up inactive oil wells, taking on the outstanding environmental liabilities of viable oil and gas companies who did not clean up the wells themselves. Overall, only 16% of the total G20 COVID-19 public money commitment for fossil fuels was conditional as of August 12, 2020. While such conditionality is a move in the right direction, these policies are still providing substantial support to fossil fuels (Energy Policy Tracker, 2020).

**Figure 12.** G20 public money commitments for fossil fuels and fossil fuel-intensive sectors (resources, power, mobility, and buildings) in response to the COVID-19 crisis up until August 12, 2020 (USD billion)



Source: Energy Policy Tracker, 2020.



## 6.0 Summary of Findings and Recommendations

Despite repeated commitments to end government support for fossil fuels, G20 governments continued to provide significant support to fossil fuels in 2017–2019 through direct budgetary transfers, tax expenditures, price support, public finance, and SOE investment. More recently, G20 governments have announced significant public money commitments for fossil fuel-intensive sectors in response to the COVID-19 crisis in the first half of 2020.

The overarching findings from our review of G20 governments' progress in ending government support for fossil fuel consumption and production are presented below.

### 6.1 Summary of Findings

- **G20 governments provided \$584 billion annually** (2017–2019 average) via direct budgetary transfers and tax expenditures, price support, public finance, and SOE investment for the production and consumption of fossil fuels at home and abroad. Governments provided more support to oil and gas production than any other stage of fossil fuel-related activity, at \$277 billion (47% of the total support to fossil fuels).
- **G20 government support has seen a 9% drop** relative to the annual 2014–2016 average, indicating some progress has been made, although around a third of this decrease can be attributed to an average decrease in oil prices. The drop in support doesn't represent a consistent decline across G20 countries over time. Seven of the G20 countries increased their fossil fuel support: Australia, Canada, China, France, India, Russia, and South Africa. **Progress made between 2014 and 2019 was insufficient: more needs to be done.**
- G20 countries allocated some \$170 billion in public money commitments to fossil fuel-intensive sectors in response to the COVID-19 crisis between January 1 and August 12, 2020. This is likely an underestimate due to the dynamic nature of government responses to the COVID-19 crisis and a lack of transparency that doesn't allow for the quantification of many announced policies: readers can refer to the most up-to-date information at the Energy Policy Tracker ([www.energypolicytracker.org](http://www.energypolicytracker.org)). **The support for fossil fuels in response to the COVID-19 crisis indicates G20 governments are moving in the wrong direction and are likely to undo the little progress made between 2014 and 2019.**
- In tracking G20 countries' progress toward phasing out government support for fossil fuels, our scorecards identified leaders and laggards across seven indicators but found that **no G20 country scores exceptionally well**, with a top score of only 71/100 going to Germany. Every G20 country is at risk of not delivering on its fossil fuel subsidy phase-out commitment.
- **Among the OECD member countries of the G20, Germany scored highest, while Turkey, Mexico, and the United Kingdom scored lowest.** The United Kingdom lacks transparency about government support and continues to provide



support for consumers of fossil fuel by foregoing tax revenue and supplying direct budgetary transfers. Mexico continues to provide significant support for oil and gas production and fossil fuel-based power, especially through SOE investment. Turkey also lacks transparency and continues to provide support for coal production and fossil fuel use, predominantly by foregoing tax revenue and providing SOE investment.

- **Among the non-OECD member countries of the G20, Brazil scored the highest while Saudi Arabia scored the lowest.** Saudi Arabia continues support for oil and gas production and fossil fuel-based power, predominantly due to large capital expenditure from its SOEs and support for fossil fuel use via low energy prices.
- Support to fossil fuels by non-OECD member countries of the G20 remains high, at \$439 billion, down only 6% on absolute U.S. dollar terms relative to the 2014–2016 average. However, on a per unit of GDP basis, these countries have reduced their support by 20% relative to the 2014–2016 average. This indicates that **emerging economies in the G20 have managed to hold their government support levels relatively steady while they undergo GDP growth.**
- Public finance for oil, gas, and coal remains high at an average of USD 51 billion a year, though this is likely an underestimate due to poor transparency. China, Canada, Japan, and the Republic of Korea have consistently provided the highest levels of this form of support. **Reducing public finance for fossil fuels saw the greatest decline among all the mechanisms of support**, decreasing 32% relative to 2014–2016. However, this reduction was largely driven by a spike of \$44 billion in support from China for a handful of large oil and gas projects in 2016 rather than a consistent decline across G20 countries over time.
- **SOE investment is heading in the wrong direction. G20 governments provided more SOE investment overall than through any other support mechanism**, at \$257 billion or 44% of the total support to fossil fuels. It is the only type of G20 government support to have increased overall, by 4.6% relative to the 2014–2016 average.
- **OECD member countries of the G20 provide more government support for fossil fuels by foregoing tax revenue** than by any other support mechanism, at \$56 billion or 39% of their total support. **They also provide a greater share of their overall support to users** of fossil fuels than any other stage of fossil fuel-related activity, at \$57 billion or 39% of their total support. This challenges the typical narrative that support for fossil fuel consumption is more of a concern for emerging markets and developing countries.
- **Non-OECD member countries of the G20, however, support oil and gas production more than any other stage of fossil fuel-related activity** (\$227 billion or 51% of their total support) **and provide more SOE investment than any other type of support mechanism** (\$228 billion or 52% of their total support). This situation reflects the energy landscape seen in many emerging economies, where SOEs can account for a large market share of the energy sector.
- **Transparency remains poor**, with almost half of G20 countries scoring either a “poor” or “opaque” level of transparency.



## 6.2 Recommendations

We recommend that G20 countries develop strategies to end government support for fossil fuels that include these recommended next steps:

- Now is the chance to **redirect G20 government support away from fossil fuels to other more sustainable areas like health, social support, and the clean energy transition.**
- **Any public money commitments for fossil fuels in response to the COVID-19 crisis should have green conditions attached.** G20 governments plan to spend trillions of dollars to counteract the impacts of the COVID-19 crisis, and how they do this will shape the global economy for many years to come.
- All G20 governments should **focus phase-out efforts on reducing support for oil and gas exploration, production, refining, and transportation.** This stage of fossil fuel activity received the largest share of G20 government support in 2017–2019.
- As SOE investment accounts for the largest type of G20 government support measure, and considering the key role that SOEs play in many countries' energy systems, governments need to **encourage an SOE transition, triggering their diversification away from fossil fuels.**
- **All G20 PFIs must implement policies excluding support for oil, gas, and coal projects.** This should include projects across the supply chain, as well as indirect support through related infrastructure, advisory services, technical assistance, or financial intermediaries.
- All G20 governments, especially OECD members, should **charge the full rate of tax** on producers and users of fossil fuels: \$79 billion annually (2017–2019 average) of revenue foregone through tax expenditure could be directed toward urgent COVID-19 recovery needs.
- All G20 governments should **remove energy subsidies on fossil fuel use and ensure poor and vulnerable consumers can still access and afford energy as subsidies are reduced— where necessary, implementing targeted support for those most in need.** Targeting consumer support will be crucial for G20 governments in the short- and medium-terms as more households and businesses experience energy access issues due to the COVID-19 crisis.
- Countries that have not yet done so should **commit to conducting peer reviews** of all forms of government support to fossil fuels to increase transparency, encourage the reporting and quantification of government support, and further facilitate the sharing of experience between G20 countries. Doing this is particularly important for Australia, Japan, the Republic of Korea, Turkey, the United Kingdom, Russia, Brazil, Saudi Arabia, and South Africa. Countries that have committed to but not concluded peer reviews should prioritize them for fast-tracking. That includes Argentina, Canada, France, and India.
- All G20 countries should **publicly quantify and report on all government support measures for fossil fuels** in a regular and comprehensive way in order to better track progress in ending support for fossil fuels. This is complementary to countries' upcoming SDG reporting requirements.



## References

- Accounting Chamber of the Russian Federation. (2020). *Report on the expert-analytical activity: Analysis of the mineral reserve replacement of the Russian Federation in 2015-2019* [in Russian]. <https://ach.gov.ru/upload/iblock/b99/b998773313b87e724ed09f287754d180.pdf>
- Bast, E., Doukas, A., Pickard, S., van der Burg, L., & Whitley, S. (2015). *Empty promises. G20 subsidies to oil, gas and coal production*. <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9957.pdf>
- BBC News. (2020). *World's most profitable company to go public*. <https://www.bbc.com/news/business-50070823>
- Beaton, C., Gerasimchuk, I., Laan, T., Lang, K., Vis-Dunbar, D., & Wooders, P. (2013). *A guidebook to fossil-fuel subsidy reform for policy-makers in Southeast Asia*. [https://www.iisd.org/gsi/sites/default/files/ffs\\_guidebook.pdf](https://www.iisd.org/gsi/sites/default/files/ffs_guidebook.pdf)
- BP. (2019). *Statistical review of world energy – all data, 1965-2019*. <https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy.html>
- Central Electricity Authority. (2019). *CEA annual report 2018-19*. [http://www.cea.nic.in/reports/annual/annualreports/annual\\_report-2019.pdf](http://www.cea.nic.in/reports/annual/annualreports/annual_report-2019.pdf)
- Coady, D., Flamini, V., & Sears, L. (2015). *The unequal benefits of fuel subsidies revisited: Evidence for developing countries*. <http://www.imf.org/external/pubs/ft/wp/2015/wp15250.pdf>
- Convention on Biological Diversity. (2010). *Decision adopted by the Conference of the Parties to the Convention on Biological Diversity at its tenth meeting*. <http://www.cbd.int/doc/decisions/cop-10/cop-10-dec-02-en.pdf>
- DeAngelis, K., & Tucker, B. (2020). *Adding fuel to the fire: Export credit agencies and fossil fuel finance*. <http://priceofoil.org/2020/01/30/g20-ecas-2020/>
- Doukas, A., DeAngelis, K., Ghio, N., Trout, K., & Bast, E. (2017). *Talk is cheap: How G20 governments are financing a climate disaster*. <http://priceofoil.org/2017/07/05/g20-financing-climate-disaster/>
- Energy Policy Tracker. (2020). *Energy Policy Tracker: Track public money for energy in recovery packages*. <https://www.energypolicytracker.org/region/g20/>
- Farand, C. (2020). *Saudi Arabia censors fossil fuel subsidy discussion as G20 host*. <https://www.climatechangenews.com/2020/07/14/saudi-arabia-censors-fossil-fuel-subsidy-discussion-g20-host/>
- G7. (2016). *G7 Ise-Shima Leaders' Declaration, 26–27 May*. <http://www.mofa.go.jp/files/000160266.pdf>
- G20. (2019). *G20 Osaka Leaders' Declaration*. [https://www.mofa.go.jp/policy/economy/g20\\_summit/osaka19/en/documents/final\\_g20\\_osaka\\_leaders\\_declaration.html](https://www.mofa.go.jp/policy/economy/g20_summit/osaka19/en/documents/final_g20_osaka_leaders_declaration.html)





- G20. (2020a). *Communiqué: G20 Finance Ministers and Central Bank Governors Meeting 15 April 2020* [Virtual] [Press release]. [https://g20.org/en/media/Documents/G20\\_FMCBG\\_Communicu%C3%A9\\_EN\\_\(2\).pdf](https://g20.org/en/media/Documents/G20_FMCBG_Communicu%C3%A9_EN_(2).pdf)
- G20. (2020b). *G20 Leaders' Statement. Extraordinary G20 Leaders' Summit. Statement on COVID-19*. [https://g20.org/en/media/Documents/G20\\_Extraordinary\\_G20\\_Leaders%E2%80%99\\_Summit\\_Statement\\_EN\\_\(3\).pdf](https://g20.org/en/media/Documents/G20_Extraordinary_G20_Leaders%E2%80%99_Summit_Statement_EN_(3).pdf)
- Geddes, A., Bridle, R., Mostafa, M., Roth, J., Sanchez, L., Garg, V., Scholtz, L., & Fakir, S. (2020). *Rethinking Eskom: Lessons from electricity sector reform in India and Mexico*. <https://www.iisd.org/publications/rethinking-eskom-lessons-electricity-sector-reform-india-and-mexico>
- Gençsü, I., Whitley, S., Roberts, L., Beaton, C., Chen, H., Doukas, A., Geddes, A., Gerasimchuk, I., Sanchez, L. & Suharsono, A. (2019). *G20 coal subsidies: Tracking government support to a fading industry*. <https://www.odi.org/publications/11355-g20-coal-subsidies-tracking-government-support-fading-industry>
- Gerasimchuk, I., Whitley, S., Beaton, C., Bridle, R., Doukas, A., Paola, M. M. D., & Touchette, Y. (2018). *Stories from G20 countries: Shifting public money out of fossil fuels*. <https://www.iisd.org/publications/stories-g20-countries-shifting-public-money-out-fossil-fuels>
- Government of Alberta. (2020). *Investing in Keystone XL pipeline*. <https://www.alberta.ca/investing-in-keystone-xl-pipeline.aspx>
- Granado, J. A. d., Coady, D., & Gillingham, R. (2010). *The unequal benefits of fuel subsidies: A review of evidence for developing countries*. <http://www.imf.org/external/pubs/ft/wp/2010/wp10202.pdf>
- Gross, S. (2019). *The Saudi Aramco IPO breaks records, but falls short of expectations*. Brookings. <https://www.brookings.edu/blog/order-from-chaos/2019/12/11/the-saudi-aramco-ipo-breaks-records-but-falls-short-of-expectations/>
- International Energy Agency (IEA). (2020a). *Global energy and CO2 status report 2019: Emissions*. <https://www.iea.org/reports/global-energy-co2-status-report-2019/emissions-abstract>
- International Energy Agency. (2020b). *IEA subsidies database*. <https://www.iea.org/topics/energy-subsidies>
- International Energy Agency. (2020c). *Methodology and assumptions: The price-gap approach*. <https://www.iea.org/topics/energy-subsidies-methodology-and-assumptions>
- International Monetary Fund. (2013). *Energy subsidy reform: Lessons and implications*. <http://www.imf.org/external/np/pp/eng/2013/012813.pdf>



- International Panel on Climate Change. (2018). Summary for Policymakers. In V. Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, & T. Waterfield (Eds.), *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf)
- Kingdom of Saudi Arabia. (2019). *Increasing the competitiveness of our energy sector*. <https://vision2030.gov.sa/en/node/94>
- KoreaExim. (2020). *Korea Eximbank and Korea Development Bank to provide additional KRW 1.2 trillion to Doosan Heavy Industries & Construction* [Press release]. <https://www.koreaexim.go.kr/site/program/board/basicboard/view?boardtypeid=284&boardid=62860&menuid=002001007>
- Krane, J. (2019). *Energy governance in Saudi Arabia: An assessment of the kingdom's resources, policies, and climate approach*. <https://www.bakerinstitute.org/research/energy-governance-saudi-arabia/>
- Laderchi, C. R. (2014). *Transitional policies to assist the poor while phasing out inefficient fossil fuel subsidies. Contribution by the World Bank to G20 Finance Ministers and Central Bank Governors*. [http://www.g20.utoronto.ca/2014/14 Transitional Policies To Assist The Poor While Phasing Out Inefficient Fossil Fuel Subsidies.pdf](http://www.g20.utoronto.ca/2014/14%20Transitional%20Policies%20To%20Assist%20The%20Poor%20While%20Phasing%20Out%20Inefficient%20Fossil%20Fuel%20Subsidies.pdf)
- Lahn, G. (2016). *Fuel, food and utilities price reforms in the GCC: A wake-up call for business*. <https://www.chathamhouse.org/publication/fuel-food-and-utilities-price-reforms-gcc-business>
- Lahn, G., & Stevens, P. (2014). *Finding the 'right' price for exhaustible resources: The case of gas in the Gulf*. [https://www.chathamhouse.org/sites/default/files/field/field\\_document/20141017LahnStevensGas.pdf](https://www.chathamhouse.org/sites/default/files/field/field_document/20141017LahnStevensGas.pdf)
- Marcel, V., & Mitchell, J. V. (2006). *Oil titans; National oil companies in the Middle East*. Brookings Institution Press. <http://www.jstor.org/stable/10.7864/j.ctt12879z9>
- Market Forces. (2020). *Tax avoidance: Do you pay more tax than the big fossil fuel companies?* <https://www.marketforces.org.au/campaigns/subsidies/taxes/taxavoidance/>
- Matsuo, T., & Schmidt, T. S. (2017). Hybridizing low-carbon technology deployment policy and fossil fuel subsidy reform: a climate finance perspective. *Environmental Research Letters*, 12(1), 014002. <https://www.doi.org/10.1088/1748-9326/aa5384>
- McGlade, C., & Ekins, P. (2015). The geographical distribution of fossil fuels unused when limiting global warming to 2 °C. *Nature*, 517(7533), 187–190. <https://www.doi.org/10.1038/nature14016>



- Ministry of External Affairs. (2019). *India-France Joint Statement on Visit of Prime Minister to France (22-23 August 2019)*. <https://www.mea.gov.in/bilateral-documents.htm?dtl/31755/IndiaFrance+Joint+Statement+on+Visit+of+Prime+Minister+to+France+2223+August+2019>
- Ministry of Finance. (2020). *Saudi Arabia Budget Statement: Fiscal year 2020*. <https://www.mof.gov.sa/en/financialreport/budget2020/Pages/default.aspx>
- Ministry of Finance of the Russian Federation. (2019). *Information on normative, target and fiscal characteristic of tax expenditure, exemptions or other preferential treatment stipulated by the federal legislation for 2016–2018 with a forecast estimate till 2022* [in Russian]. [https://minfin.gov.ru/ru/document/?id\\_4=128335-informatsiya\\_o\\_normativnykh\\_tselevykh\\_i\\_fiskalnykh\\_kharakteristikakh\\_nalogovykh\\_lgot\\_osvobozhdenii\\_i\\_inykh\\_preferentsii\\_ustanovlennykh\\_federalnym\\_zakonodatelstvom\\_na\\_2016-201](https://minfin.gov.ru/ru/document/?id_4=128335-informatsiya_o_normativnykh_tselevykh_i_fiskalnykh_kharakteristikakh_nalogovykh_lgot_osvobozhdenii_i_inykh_preferentsii_ustanovlennykh_federalnym_zakonodatelstvom_na_2016-201)
- Narayan, S. (2018). *CIL sees future prospects in renewable energy*. <https://www.mydigitalfc.com/companies-and-markets/cil-sees-future-prospects-renewable-energy>
- Oil Change International (OCI). (2016). *The sky's limit – Why the Paris climate goals require a managed decline of fossil fuels production*. [http://priceofoil.org/content/uploads/2016/09/OCI\\_the\\_skys\\_limit\\_2016\\_FINAL\\_2.pdf](http://priceofoil.org/content/uploads/2016/09/OCI_the_skys_limit_2016_FINAL_2.pdf)
- Oil Change International. (2020). *Shift the Subsidies Database*. <http://priceofoil.org/shift-the-subsidies>
- Organisation for Economic Co-operation and Development (OECD). (2017). Mobilising financing for the transition investing in climate, investing in growth (Ch. 7). In OECD (Ed.), *Investing in climate, investing in growth* (pp. 272–285). <https://read.oecd.org/10.1787/9789264273528-9-en?format=pdf>.
- Organisation for Economic Co-operation and Development. (2019a). *G20 voluntary peer reviews of the reform of inefficient fossil fuel subsidies*. <http://www.oecd.org/site/tadffss/publication/>
- Organisation for Economic Co-operation and Development. (2019b). *Indonesia's effort to phase out and rationalise its fossil-fuel subsidies*. [http://www.oecd.org/fossil-fuels/publication/G20\\_peer\\_review\\_Indonesia\\_Final-v2.pdf](http://www.oecd.org/fossil-fuels/publication/G20_peer_review_Indonesia_Final-v2.pdf)
- Organisation for Economic Co-operation and Development. (2020a). *Exchange rates (indicator)*. <https://data.oecd.org/conversion/exchange-rates.htm>
- Organisation for Economic Co-operation and Development. (2020b). *OECD inventory of support measures for fossil fuels*. <http://www.oecd.org/fossil-fuels/data/>
- Organisation for Economic Co-operation and Development. (forthcoming). *OECD companion to the Inventory of Support Measures for Fossil Fuels 2020*.
- Organization of Petroleum Exporting Countries. (2020). *2020 OPEC annual statistical bulletin*. [https://asb.opec.org/ASB\\_PDFDownload.php](https://asb.opec.org/ASB_PDFDownload.php)



- Paraguassu, L., & Maia, M. (2018). *Brazil truckers suspend strike, government to subsidize diesel prices*. Reuters. <https://www.reuters.com/article/us-brazil-transport/brazil-truckers-suspend-strike-government-to-subsidize-diesel-prices-idUSKCN1IP3AY>
- RBC. (2019). *Incentives for oil companies will grow to RUB 2.3 trillion by 2033* [in Russian]. <https://www.rbc.ru/business/13/09/2019/5d7b90ad9a79472c42394cd9>
- Roth, J., & Kuehne, K. (2019). *Beyond fossil fuels: Fiscal transtion in BRICS. Case study: Brazil*. International Institute for Sustainable Development. <https://www.iisd.org/publications/beyond-fossil-fuels-brazil>
- Sdralevich, C., Sab, R., Zouhar, Y., & Albertin, G. (2014). *Subsidy reform in the Middle East and North Africa: Recent progress and challenges ahead*. <http://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2016/12/31/Subsidy-Reform-in-the-Middle-East-and-North-Africa-Recent-Progress-and-Challenges-Ahead-41548>
- Sharma, S., Jain, P., Moerenhout, T., & Beaton, C. (2019). *How to target electricity and LPG subsidies in India: Step 1. Identifying policy options*. <https://www.iisd.org/publications/how-target-electricity-and-lpg-subsidies-india-step-1>
- Tucker, B., DeAngelis, K., & Doukas, A. (2020). *Still digging: G20 governments continue to finance the climate crisis*. <http://priceofoil.org/2020/05/27/g20-still-digging/>
- United Nations. (2015a). *Adoption of the Paris Agreement. Conference of the Parties on its twenty-first session (Vol. 21932)*. Paris: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>
- United Nations. (2015b). *Resolution adopted by the General Assembly on 25 September 2015. 70/1. Transforming our world: the 2030 Agenda for Sustainable Development*. [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/70/1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E)
- United Nations. (2017). *Resolution adopted by the General Assembly on 6 July 2017. 71/313. Work of the Statistical Commission pertaining to the 2030 Agenda for Sustainable Development*. <https://undocs.org/A/RES/71/313>
- Unruh, G. C. (2000). Understanding carbon lock-in. *Energy Policy*, 28(12), 817–830. doi:[http://dx.doi.org/10.1016/S0301-4215\(00\)00070-7](http://dx.doi.org/10.1016/S0301-4215(00)00070-7)
- U.S. Department of the Treasury. (2017). *Department of the Treasury Executive Order 13783 – Final report*. <https://www.treasury.gov/resource-center/international/development-banks/Pages/guidance.aspx>.
- Whitley, S., Chen, H., Doukas, A., Gençsü, I., Gerasimchuk, I., Touchette, Y., & Worrall, L. (2018). *G7 fossil fuel subsidy scorecard: Tracking the phase-out of fiscal support and public finance for oil, gas and coal*. <https://www.odi.org/sites/odi.org.uk/files/resource-documents/12222.pdf>
- World Bank. (2020). *GDP (current US\$) (indicator)*. <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>
- World Trade Organization. (1994). *Agreement on Subsidies and Countervailing Measures*. [http://www.wto.org/english/docs\\_e/legal\\_e/24-scm.pdf](http://www.wto.org/english/docs_e/legal_e/24-scm.pdf)



- Worrall, L., Whitley, S., Garg, V., Krishnaswamy, S., & Beaton, C. (2018). *India's stranded assets: How government interventions are propping up coal power*. <https://www.odi.org/publications/11185-india-s-stranded-assets-how-government-interventions-are-propping-coal-power>
- Yemtsov, R., & Moubarak, A. (2018). *Good Practice Note 5: Assessing the readiness of social safety nets to mitigate the impact of reform*. <http://documents1.worldbank.org/curated/en/180951530884246896/pdf/ESRAF-note-5-Assessing-the-readiness-of-Social-Safety-Nets-to-Mitigate-the-Impact-of-Reform.pdf>
- Zinecker, A., Sanchez, L., Sharma, S., Beaton, C., & Merrill, L. (2018). *Getting on target: Accelerating energy access through fossil fuel subsidy reform*. <https://www.iisd.org/publications/getting-target-accelerating-energy-access-through-fossil-fuel-subsidy-reform>



## Annex 1. Overview of Indicators and Sub-Indicators Used in the G20 Scorecards

Shaded cells represent quantitative sub-indicators; unshaded cells represent qualitative sub-indicators.

1. Transparency	2. Pledges and commitments	3. Government support for coal exploration, production, processing, and transportation	4. Government support for oil & gas exploration, production, refining, and transportation	5. Government support for fossil fuel-based power	6. Government support for fossil fuel use by industry, transport, households, and other	7. Progress in ending support for fossil fuels
1A Government has officially reported that it provides inefficient fossil fuel subsidies (Y/N)	2A Number of pledges to phase out subsidies to fossil fuels (beyond G7 & G20 commitment)	3A Direct transfer and tax expenditure support for coal exploration, production, processing and transportation (2017–2019 average per GDP)	4A Direct transfer and tax expenditure support for oil & gas exploration, production, refining and transportation (2017–2019 average per GDP)	5A Direct transfer & tax expenditure or induced transfer support for fossil fuel-based power (2017–2019 average per GDP)	6A Direct transfer & tax expenditure or induced transfer support for fossil fuel use by industry, transport, households & other (2017–2019 average per GDP)	7A Change in oil consumption subsidies (2017–2019 average vs. 2014–2016 average normalized for oil price, demand and currency fluctuations)
1B Government reports and quantifies its subsidies (via ministry or agency, regularly or irregularly) (Y/N)	2B Number of pledges to end public finance for fossil fuels	3B Domestic and international public finance for coal exploration, production, processing and transportation (2017–2018 average per GDP)	4B Domestic and international public finance for oil & gas exploration, production, refining and transportation (2017–2018 average per GDP)	5B Domestic and international public finance for fossil fuel-based power (2017–2018 average per GDP)		7B Change in public finance for fossil fuels (2017–2018 average vs. 2014–2016 average)



1. Transparency	2. Pledges and commitments	3. Government support for coal exploration, production, processing, and transportation	4. Government support for oil & gas exploration, production, refining, and transportation	5. Government support for fossil fuel-based power	6. Government support for fossil fuel use by industry, transport, households, and other	7. Progress in ending support for fossil fuels
1C Taking part, took part or committing to taking part in peer reviews (Y/N)	2C Evidence of backtracking on existing pledges (Y/N)	3C SOE investment in coal exploration, production, processing and transportation (2017–2019 average per GDP)	4C SOE investment in oil & gas exploration, production, refining and transportation (2017–2019 average per GDP)	5C SOE investment in fossil fuel-based power (2017–2019 average per GDP)		7C Change in SOE investment in fossil fuels (2017–2019 average vs. 2014–2016 average)
1D At least half of public finance institutions provide transaction-level data that appears to be comprehensive and specific (Y/N)						7D Public money commitments for fossil fuels in response to the COVID-19 crisis (2020)
						7E Conditional public money commitments for fossil fuels in response to the COVID-19 crisis as a percentage of the total (2020)

