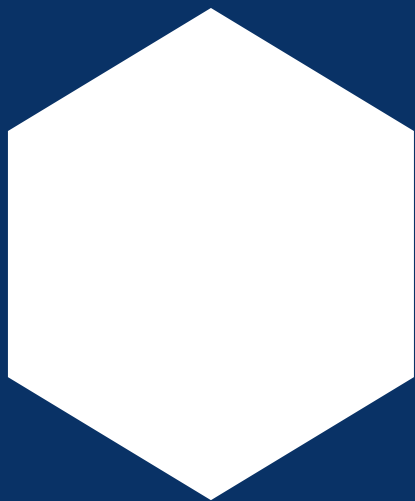


# Doubling Back and Doubling Down:

G20 scorecard on fossil fuel funding

METHODOLOGY NOTE



November 2020



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

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## Abbreviations and Acronyms

<b>EU</b>	European Union
<b>G20</b>	Group of 20
<b>G7</b>	Group of 7
<b>IEA</b>	International Energy Agency
<b>OCI</b>	Oil Change International
<b>OECD</b>	Organisation for Economic Co-operation and Development
<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>1</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>2</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, 2020, p. 6).

Despite these pledges, G20 governments continue to provide significant amounts of support for the production and consumption of fossil fuels. 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).

The G20 scorecard report aims to track each of the G20 countries’ progress in ending government support to fossil fuels. We do so by reviewing progress in ending different forms of government support to fossil fuel production and consumption between 2014 and 2019, namely direct budget transfers and tax expenditures, price support, public finance, and state-owned enterprise (SOE) investment. We complement 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.

This methodology note accompanies the G20 scorecard report and provides information on the definition of government support; the World Trade Organization (WTO) definition of subsidies; the stages of fossil fuel activity; how indicators and sub-indicators are calculated and scored in the scorecards; sources and data used; overarching assumptions and data gaps.

## 1.1 Previous Work Tracking Government Support for Fossil Fuels

This report is part of a series and builds on a large body of existing work that tracks G7 and G20 government support for fossil fuels by the International Institute for Sustainable Development, the Overseas Development Institute, Oil Change International (OCI) and other partner non-governmental organizations (Bast et al., 2015; Doukas et al., 2017; Energy Policy Tracker, 2020; Gençü et al., 2019; Gerasimchuk et al., 2018; Tucker et al., 2020; Whitley et al., 2018).

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<sup>1</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>2</sup> The G7 countries are: Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.



## 1.2 The Unique, Broad Scope of these G20 Scorecards

This report is unique in that it analyzes all G20 countries and their government support to all fossil fuel types and stages: **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. It also differs in that it captures a wider set of government support types for all G20 countries: direct transfers and tax expenditures, price support (induced transfers), public finance, and SOE investment. Finally, it also tracks the most recent public money commitments to fossil fuel production and consumption by G20 governments in response to the COVID-19 crisis up to August 12, 2020.

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 to 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.



## 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 on 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. 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).

**Table 1.** 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.





## 2.1 Direct Budget Transfers and Tax Expenditures

### 2.1.1 Description

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. National- and subnational-level support are included. However, subnational information can be difficult to access, and therefore, it is likely that our findings underestimate its actual support level.

### 2.1.2 Source

For all countries, the source of information for direct budget transfers and tax expenditures was the OECD's analysis of fossil fuel support, the OECD Inventory of Support Measures for Fossil Fuels database (OECD, 2020b). Data was obtained on July 13, 2020, so any changes made after that date will not be reflected in our analysis.

## 2.2 Consumer Price Support

### 2.2.1 Description

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). Consumer price support is most commonly estimated using the price-gap approach via a basic calculation as follows:

$$\text{Price support} = (\text{Reference price} - \text{End-user price}) \times \text{Units consumed}$$

Consumer price support estimates are sensitive to both reference prices and consumption levels. Reference prices are calculated for fuels on the basis of international prices (or in the case of electricity, on the basis of annual average-cost pricing) (IEA, 2020b).

While price support also exists for producers, we do not capture this due to a lack of data.

### 2.2.2 Source

The source of information for price support used in this report was the IEA's Energy Subsidies database (IEA, 2020a). This database includes information on coal, oil, gas, and electricity consumer price support. IEA price support data is available for some G20 countries, namely Argentina, China, India, Indonesia, Republic of Korea, Mexico, Russia, Saudi Arabia, and South Africa. Data was obtained on June 12, 2020, so any changes made after that date are not reflected in our analysis.



## 2.3 OECD vs. IEA Estimates of Fossil Fuel Subsidies

Both the OECD’s estimates of direct budget transfers and tax expenditure and the IEA’s price support estimates measure government support for fossil fuel use (oil, gas, coal, and fossil fuel-based electricity). The two datasets overlap for estimates of fossil fuel consumption subsidies in Argentina, China, India, Indonesia, Republic of Korea, Mexico, Russia, Saudi Arabia, and South Africa. In the case of this overlap where data is available from both sources for a country, the G20 Scorecards use the estimate that was higher in aggregate and likely more comprehensive. Details of which data sources were selected for analysis for each country are given in the “Indicator and sub-indicator data and sources” section. Given the difficulty in accessing (in particular subnational-level) data, selecting the higher of the two measures still likely underestimates the full level of government support.

## 2.4 Public Finance

### 2.4.1 Description

A number of G20 countries support fossil fuel production through one or more public finance institutions. We focus on public finance institutions that are owned by governments outright or through a majority stake and which have a policy-oriented rather than purely commercial mandate. This includes bilateral development banks, national development banks, development finance institutions, and export credit agencies. Public finance directly from government departments is not included here due to a widespread lack of transparency in reporting these. We report the face or gross value of public finance from majority government-owned financial institutions for fossil fuels.

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 often their 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).

### 2.4.2 Source

For all countries, this report uses the information made publicly available by majority government-owned financial institutions. This data can be found in OCI’s Shift the Subsidies Database (OCI, 2020). Data on public finance for 2019 is not available for this report.



## 2.5 SOE Investment

### 2.5.1 Description

A number of G20 countries support fossil fuel production through one or more majority SOEs.<sup>3</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 and in operation (International Monetary Fund, 2013; Sdravovich et al., 2014). Majority government ownership of SOEs can provide a degree of effective 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.

This report provides data on total capital expenditure investment by SOEs in fossil fuel-related activities (where this information is made available by the company). It also only looks at national-level SOEs and their investments, which can be made both domestically and internationally. An example of an SOE investment includes a majority state-owned electricity utility providing finance (capital expenditure) to construct a new coal-fired generation plant. There are also SOEs that exist at the subnational level, including those established by municipal, state, and provincial governments. The investment by these SOEs would have an impact on the level of overall support provided by a G20 country. However, due to the challenges of data access, subnational data is not included within the estimates of SOE investment.

### 2.5.2 Sources

This report uses the information made publicly available by majority government-owned SOEs through their annual reports from 2014 to 2019. Only national-level SOEs are included in this analysis, and hence the amount of SOE investment is most likely underestimated.

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

### 2.6.1 Description

A number of G20 countries have committed public money to sectors responsible for fossil fuel consumption and production 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 as well as debt and interest rate waivers. In some cases, governments have made this support “conditional” on certain climate targets or additional pollution-reduction requirements. For example, France has bailed out the Air France airline on the condition that

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<sup>3</sup> Our analysis has not identified any SOE investment for fossil fuel use (consumption). While there may be cases where SOEs support consumption (e.g., through providing coal or electricity at low prices for consumption by employees), this is difficult to identify and/or quantify, and therefore is not included in our analysis.



it reduce its emissions. Other such requirements include support to measures that reduce environmental damage via carbon capture, utilization, and storage; extractive site cleanup; and other measures. While such conditionality is a step in the right direction, these policies are still providing substantial support to fossil fuels and are violating the “polluter pays principle” (Energy Policy Tracker, 2020).

## 2.6.2 Source

The source of information for public money commitments in response to the COVID-19 crisis was via Energy Policy Tracker’s database covering four sectors responsible for fossil fuel production and consumption (resources, power generation, mobility, and buildings) (Energy Policy Tracker, 2020). The Energy Policy Tracker initiative is 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. Both conditional and unconditional support measures for fossil fuels are captured. Data was obtained on August 12, 2020, so any changes made after that date will not be reflected in our analysis. Public money commitments in response to the COVID-19 crisis will continue to be announced throughout the remainder of 2020 (and in subsequent months and years) as countries continue to emerge from lockdowns. Hence, this analysis will underestimate this new wave of the G20 countries’ support to fossil fuel-intensive sectors.

## 2.7 Defining Subsidies

Many elements of government support to fossil fuels fall under the definition of a subsidy by the 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, and encompasses the following subsidy categories:

1. Direct transfer of funds (e.g., budgetary transfers, grants, loans, and equity infusion) and potential direct transfers of funds or liabilities (e.g., loan guarantees) at below their market value.
2. Government revenue that is otherwise due, foregone, or not collected (e.g., fiscal incentives such as tax credits).
3. Government provision of goods or services other than general infrastructure or the purchase of goods at above their market value.
4. Income or price support.

The WTO definition of subsidies also underpins the methodology for measuring and reporting fossil fuel subsidies under SDG indicator 12.c.1 (United Nations Environment Programme et al., 2019).

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. Due to the lack of transparency and robust reporting from public finance institutions, it is impossible to separate out the portion of public finance that is considered to be a subsidy component. Specifically, we report the face or gross value of public finance from majority government-owned financial institutions for fossil fuels. In addition, limited publicly available information on government transfers to SOEs (and vice versa) and on how investment is distributed within the vertically integrated<sup>4</sup> structure of many SOEs makes it challenging to identify the specific concessional sub-component of SOE investment that constitutes a subsidy. As a result, we report on total capital expenditure investment by SOEs in fossil fuel-related activities (where this information is made available by the company).

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 towards 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.

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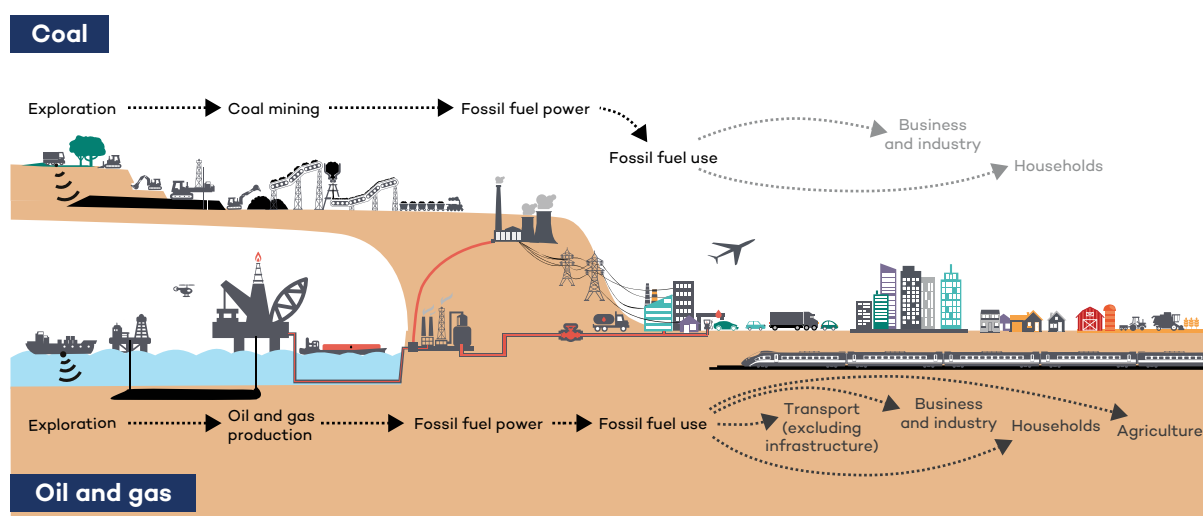
<sup>4</sup> Vertical integration is where the supply chain of a company is owned by that company.



## 3.0 Stage of Fossil Fuel-Related Activity

The bulk of the G20 support to fossil fuel-intensive sectors as captured for 2014–2019 can also be categorized in terms of its role in supporting the following four stages of fossil fuel-related activities (see Figure 1). This categorization does not apply to the 2020 data on G20 public money commitments in response to the COVID-19 crisis.

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



### 3.1 Coal Exploration, Production, Processing, and Transportation

Support for coal exploration, production (mining), processing, and transportation includes direct transfers and tax expenditures, public finance, and SOE investment.

### 3.2 Oil and Gas Exploration, Production, Refining, and Transportation

Support for oil and gas exploration, production, refining, and transportation includes direct transfers and tax expenditures, public finance, and SOE investment.

### 3.3 Fossil Fuel-Based Power

Support for fossil fuel-based power includes either direct transfers and tax expenditures or price support measures (induced transfers), public finance, and SOE investments. It covers support to fossil fuel inputs to power generation as well as support to end-users of electricity.



A number of public finance projects identified fall across multiple stages (e.g., fossil fuel production and fossil fuel-based power) or did not provide sufficient information to allocate them to one stage. The amount of support to these projects was therefore split in the same proportion as the majority of projects financed by a G20 country that *could* be identified as going toward a single stage. In particular:

**In Canada:** For those projects that were associated with oil and gas, fossil fuel-based power accounted for 6% of public finance investments and oil and gas exploration, production, refining, and transportation accounted for the remaining 94%. There were no projects associated with coal.

**In the remaining G20 countries:** For those projects that were associated with coal, fossil fuel-based power accounted for 85% of public finance investments and coal exploration, production, processing, and transportation accounted for the remaining 15%. For those projects that were associated with oil and gas, fossil fuel-based power accounted for 15% of public finance investment and oil and gas exploration, production, refining, and transportation accounted for the remaining 85%.

A number of SOE investments were also identified to fall across multiple stages (e.g., some SOEs perform coal mining and coal-fired power activities) or did not have sufficient information to allocate them to one stage. Where possible, information contained in the SOEs' annual reports was used to disaggregate the total capital investment into stages. Where this was not possible, information from other public sources was sourced to make assumptions on what the dominant activity of the SOE might have been. For those SOEs with capital investments in both fossil fuel-based power plants and renewables, and where capital expenditure (CapEx) figures from the annual reports did not provide such a split, the most up-to-date information on the share of renewable installed capacity for the specific SOE, or the country it operates in, was used as a proxy of the share of that SOE's investment in renewables (and as such not to be included in our data as fossil fuel support).

### 3.4 Fossil Fuel use by Industry, Transport, Households, and Others

This includes either direct transfers and tax expenditure or price support measures (induced transfers) for fossil fuel use by industry, transport, households, business, and other consumers in the end-use sectors. While it is conceivable that there is public finance and SOE support for fossil fuel consumption (e.g., public finance for district heating that is coal-fired), our analysis did not identify any such measures.



## 4.0 Scoring

The scorecard tracks government support against seven indicators, which in turn consist of several sub-indicators.

### 4.1 Summary of 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: (Indicator 3) coal exploration, production, processing, and transportation; (Indicator 4) oil and gas exploration, production, refining, and transportation; (Indicator 5) fossil fuel-based power; and (Indicator 6) 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 2014–2015 average and the 2017–2019 average. To assess the change in government support, it specifically captures the change in oil consumption subsidies (accounting for oil price, demand, and currency fluctuations), the change in public finance, and the change in SOE investment over these average periods. It also looks at G20 countries' public money commitments for fossil fuel-intensive sectors in response to the COVID-19 crisis from its start to August 12, 2020.

Further information on all indicators and sub-indicators is provided in Section 5 of this methodology note, which also details the definitions, sources, and scoring process used in the scorecard.

### 4.2 Comparing Countries

First, the G20 countries are separated according to their categorization as either OECD<sup>5</sup> or non-OECD member countries, and then the countries are scored in separate scorecards 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 8 G20 non-OECD member countries. In this way, countries whose economies are at a more comparable level of development will be compared with each other. Importantly, recommendations from the two scorecards will be more specific and relevant to countries.

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<sup>5</sup> OECD countries in the G20 are: Australia, Canada, France, Germany, Italy, Mexico, Republic of Korea, Turkey, the United Kingdom, the United States. Non-OECD countries in the G20 are: Argentina, Brazil, China, India, Indonesia, Russia, Saudi Arabia, and South Africa.





## 4.3 Quantitative Indicators

All quantitative sub-indicators (the shaded cells in Table 2) have numerical values. In the scoring of each quantitative sub-indicator related to direct budget transfers and tax expenditures, price support, public finance support, and SOE investment (3A, 3B, 3C, 4A, 4B, 4C, 5A, 5B, 5C, 6A), where the analysis identified no relevant government support, a country was awarded a perfect score of 10 points for the relevant sub-indicator. It should be noted that a perfect score of 10 only implies the lack of detection of government support based on the best available information. It does not imply a total absence of government support, as we cannot guarantee the exhaustiveness of our search for support. Remaining countries (that is, those without a perfect score that have allocated some form of government support per unit of GDP) were awarded a score for the relevant sub-indicator based on the decile into which they fell and scored accordingly between 0 and 9. Those in the highest decile (that is, those giving the most government support per unit of GDP) were given a 0.

This scoring process was also applied to the scoring of the COVID-19 government recovery support sub-indicator (7D).

For percentages in the progress of sub-indicators 7A, 7B, and 7C, the countries were once again scored in relation to one another. Countries with a score of -100% or less were awarded a “perfect score” of 10, as this implies full removal of government support. The remaining countries were then grouped into deciles and scored accordingly between 0 and 9. For the percentage of COVID-19 government recovery support that is conditional (7E), a value of 100% was awarded a perfect score of 10, as this implies all government support is conditional. The remaining countries were then grouped into deciles and scored accordingly between 0 and 9.

Finally, for whole numbers in sub-indicators 2A and 2B, there is no such thing as a “perfect score.” This was because the sub-indicators count the number of pledges to phase out subsidies and public finance for fossil fuels, respectively, and no “perfect” number of pledges could be identified. The country with the highest number of pledges was awarded 8, and the rest were scored based on which octile their number of pledges fell into in relation to one another.



**Table 2:** Indicators and sub-indicators used in the G20 fossil fuel 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 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)



## 4.4 Qualitative Indicators

All qualitative sub-indicators (the unshaded cells in Table 1) are based on “Yes” and “No” answers (1A, 1B, 1C, 1D, 2C). Where “Yes” was a positive development or outcome regarding government support phase-out, a “Yes” received a perfect score of 10 and a “No” received 0 (1A, 1B, 1C, 1D). Where “Yes” was a negative development or outcome (i.e., new evidence of government support was found), the scoring was the inverse: “Yes” received a 0 and “No” a 10 (2C).

## 4.5 Weighting and Overall Report Scoring

The main aim of these scorecards is to assess progress in ending support for fossil fuels. Indicators 1–6 are static, assessing the most recent scale and status of G20 government support to fossil fuels. Indicator 7 assesses progress in ending government support to fossil fuels, taking into consideration the change in government support over time (from 2014 to 2019, also capturing COVID-19 support in 2020). It was for this reason that **the researchers behind the scorecard allocated a 10 % weight to each indicator 1–6 and a 40% weight to indicator 7**. The final score was then calculated, taking into consideration these weightings.

In addition, each sub-indicator was given equal weighting within each indicator. Scores for each indicator (by country) are calculated by adding up the values for each sub-indicator, dividing that by the perfect score for that sub-indicator, and multiplying this by 100 to give a score out of 100. For example, for indicator 1 (transparency), there are four sub-indicators (1A–D), each with a perfect score of 10, so a perfect score overall would be 40. The score for each country on indicator 1 (transparency) was then divided by 40 and multiplied by 100 to give a score out of 100.

Each country is therefore awarded a final overall numerical score. To distinguish between scorecards, the G20 OECD member countries are allocated a numerical score, and the G20 non-OECD member countries are allocated a letter grade score. Finally, each indicator’s numerical score is converted to a descriptive score, as shown in Table 3.



**Table 3.** Score descriptions and their relationship to numerical scores

<b>Score (numerical)</b>	<b>Score (letter grade)</b>	<b>1. Transparency</b>	<b>2. Pledges and commitments</b>	<b>3–6. Scale of support for fossil fuels</b>	<b>7. Progress in ending support for fossil fuels</b>
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



## 6.0 Indicator and Sub-Indicator Data and Sources

### 6.1 Indicator 1: Transparency

This indicator looks at government recognition of and reporting on direct transfers, tax expenditures, and public finance to fossil fuels. Four sub-indicators are used for this indicator.

#### *1A Government has officially reported that it provides inefficient fossil fuel subsidies (Y/N)*

This sub-indicator captures whether a government has officially recognized and reported that it provides inefficient fossil fuel subsidies, including through the G20 peer review process, in the last 10 years.

Sources of information include government publications, media releases, announcements, etc.

#### *1B Government reports and quantifies its subsidies (via ministry or agency, regularly or irregularly) (Y/N)*

This sub-indicator captures whether the government has reported publicly (through ministries or agencies) and specifically on the subsidies it has provided to fossil fuels in the last 10 years. A G20 country was scored “Yes” if it has (either regularly or irregularly) reported on and quantified fossil fuel subsidies, environmentally harmful subsidies, or energy subsidies. A country was scored “No” if there was no evidence of this reporting.

Sources of information include government inventories of subsidies, tax expenditures, budgets, etc.

#### *1C Taking part or committing to take part in peer reviews (Y/N)*

This sub-indicator captures whether a government has taken or committed to take part in the G20’s fossil fuel subsidy peer review process.

#### *1D At least half of public finance institutions provide transaction-level data that appears to be comprehensive and specific (Y/N)*

This sub-indicator aims to capture the transparency of reporting by public finance institutions (national and bilateral development banks, export credit agencies, etc.) of the G20 countries in 2017 and 2018 (2019 data on public finance is not available for this report). It looks at whether at least half of a given G20 country’s public finance institutions provide transaction-level information with sufficient detail to indicate the amount of public finance provided for fossil fuels. See Annex 1 for a full list of public finance institutions considered in this report. A “Yes” was recorded if all public finance institutions reviewed provide transaction-level data that appears to be comprehensive and specific. A “No” was recorded if there was no evidence of such reporting.

Sources of information include public finance institutions’ annual reports.



## 6.2 Indicator 2: Pledges and commitments

This indicator looks at government pledges to end government support to fossil fuel and whether they have backtracked on these by making any high-level announcements that go against those pledges. Three sub-indicators are used for this indicator.

### *2A Number of pledges to phase out subsidies to fossil fuels (beyond the G7 and G20 commitments) (count)*

This captures the pledges made by governments to phase out subsidies to fossil fuels, which go beyond the G7 and G20 pledges (in terms of ambition), in the last 10 years.

Included pledges:

- 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).
- Any additional pledges made by individual countries are also counted where they exist.

Excluded pledges:

- Pledges that duplicate existing commitments in other forums are excluded. For example, we do not include the G20 and Asia–Pacific Economic Cooperation commitments as they repeat the G7 pledge without its 2025 deadline.
- For European Union (EU) countries in the G20, the EU commitment to phase out environmentally harmful subsidies by 2020 duplicates the Convention on Biological Diversity Aichi target 3.

### *2B Number of pledges to end public finance for fossil fuels (count)*

This sub-indicator captures the pledges made by public finance institutions of the G20 countries—including national and bilateral development banks, export credit agencies, etc.—to phase out financing for fossil fuels in the last 10 years.

Included pledges:

- Public finance pledges made through membership in the Powering Past Coal Alliance.
- The OECD public finance restrictions for export credit agencies.
- Pledges made by individual countries at the government level to phase out development finance to fossil fuels.
- Pledges and commitments made by individual public finance institutions.

### *2C Evidence of backtracking on existing pledges (Y/N)*

This sub-indicator looks at whether any governments have backtracked on the pledges under 2A and 2B by announcing they will continue subsidies or public financing for fossil fuels in the last 10 years.

Sources of information include government publications, media releases, announcements, etc.



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

This indicator examines the scale of G20 government support (direct transfers, tax expenditures, public finance, and SOE investment) for coal exploration, production, processing, and transportation (2017–2019 average per unit of GDP or, in the case of public finance, 2017–2018 average per unit of GDP).

### *3A Scale of direct transfers and tax expenditures for coal exploration, production, processing, and transportation (2017–2019 average per unit of GDP)*

This sub-indicator quantifies the annual average scale of direct transfers and tax expenditures provided for coal exploration, production, processing, and transportation in 2017, 2018, and 2019 per unit of GDP.

#### **CALCULATION APPROACH**

The total amount of direct transfers and tax expenditures provided by the government in 2017, 2018, and 2019 is divided by the relevant annual GDP and then divided by three (i.e., averaged across the three years). The data is divided by the relevant G20 country's GDP each year to normalize the data for economy size and allow for comparison across countries. Expressing fossil fuel subsidies as per unit of GDP is consistent with SDG indicator 12.c.1 (United Nations, 2015c). Where data is missing in a year, the average is only taken for the years where data exists, for example, United Kingdom data for 2018 and 2019 are missing, so only the “average” of the 2017 data is used for the period.

#### **SOURCES OF INFORMATION**

For all countries, the main source of information for direct budget transfers and tax expenditure was the OECD's analysis of fossil fuel support (OECD, 2020b). Data was obtained on July 13, 2020, so any changes made after that date will not be reflected in our analysis.

### *3B Scale of public finance for coal exploration, production, processing, and transportation (2017–2018 average per unit of GDP)*

This sub-indicator is the annual average amount of finance provided by public finance institutions for domestic and international projects relating to coal exploration, production, processing, and transportation in 2017 and 2018 per unit of GDP. Data for 2019 is not available for this report.

#### **CALCULATION APPROACH**

The total amount of public finance provided includes any project whose financing was agreed in 2017 and 2018, divided by the relevant annual GDP and then divided by two (i.e., averaged across the two years). The data is divided by the relevant G20 country's GDP each year to normalize the data for economy size and allow for comparison across countries.





## SOURCES OF INFORMATION

The report uses the information made publicly available by majority government-owned financial institutions. This data can be found in OCI's Shift the Subsidies Database (OCI, 2020).

### *3C Scale of SOE investment for coal exploration, production, processing, and transportation (2017–2019 average per unit of GDP)*

This sub-indicator quantifies the annual average scale of SOE investment provided for coal exploration, production, processing, and transportation in 2017, 2018, and 2019 per unit of GDP.

## CALCULATION APPROACH

The total amount of SOE investment reported upon in 2017, 2018, and 2019 is divided by the relevant annual GDP and then divided by three (i.e., averaged across the three years). The data is divided by the relevant G20 country's GDP each year to normalize the data for economy size and allow for comparison across countries.

## SOURCES OF INFORMATION

The report uses the information made publicly available by majority government-owned SOEs through their annual reports.

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

This indicator examines the scale of G20 government support (direct transfers, tax expenditure, public finance, and SOE investment) for oil and gas exploration, production, refining, and transportation (2017–2019 average per unit of GDP or, in the case of public finance, 2017–2018 average per unit of GDP).

### *4A Scale of direct transfers and tax expenditures for oil and gas exploration, production, refining, and transportation (2017–2019 average per unit of GDP)*

This sub-indicator quantifies the annual average scale of direct transfers and tax expenditures provided for oil and gas exploration, production, refining, and transportation in 2017, 2018, and 2019 per unit of GDP.

## CALCULATION APPROACH AND SOURCES OF INFORMATION

See 3A

### *4B Scale of public finance for oil and gas exploration, production, refining, and transportation (2017–2018 average per unit of GDP)*

This sub-indicator is the annual average amount of finance provided by public finance institutions for domestic and international projects relating to oil and gas exploration, production, refining, and transportation in 2017 and 2018 per unit of GDP. Data for 2019 is not available for this report.



## CALCULATION APPROACH AND SOURCES OF INFORMATION

See 3B

### *4C Scale of SOE investment for oil and gas exploration, production, refining, and transportation (2017–2019 average per unit of GDP)*

This sub-indicator quantifies the annual average scale of SOE investment provided for oil and gas exploration, production, refining, and transportation in 2017, 2018, and 2019 per unit of GDP.

## CALCULATION APPROACH AND SOURCES OF INFORMATION

See 3C

## 6.5 Indicator 5: Scale of Government Support for Fossil Fuel-Based Power

This indicator examines the scale of G20 government support (either direct transfers and tax expenditure or price support, public finance, and SOE investment) for fossil fuel-based power (the 2017–2019 average per unit of GDP or, in the case of public finance, the 2017–2018 average per unit of GDP). It also captures the government support for fossil fuel use for electricity generation.

### *5A Scale of support (either direct transfers and tax expenditures or price support) for fossil fuel-based power (2017, 2018, and 2019 average per unit of GDP)*

This sub-indicator quantifies the annual average scale of whichever is larger between either direct transfers and tax expenditure or price support provided for fossil fuel-based power in 2017–2019 per unit of GDP.

## CALCULATION APPROACH

The total amount of direct transfers and tax expenditure provided by the government in 2017, 2018, and 2019 is divided by the relevant annual GDP and then divided by three (i.e., averaged across the three years). The data is divided by the relevant G20 country's GDP each year to normalize the data for economy size and allow for comparison across countries.

Similarly, the total amount of price support provided by the government through induced transfers in 2017, 2018, and 2019 is divided by the relevant annual GDP and then divided by three (i.e., averaged across the three years). The data is divided by the relevant G20 country's GDP each year to normalize the data for economy size and allow for comparison across countries.

Then, for each country, the larger of the two measures is selected for use in the scorecard.

The measures used for sub-indicator 5A for each G20 country are indicated in Table 4.



**Table 4.** Support measures selected for sub-indicator 5A

<b>Country</b>	<b>Support measure (source)</b>
Argentina	Direct transfers and tax expenditures (OECD)
Australia	Direct transfers and tax expenditures (OECD)
Brazil	Direct transfers and tax expenditures (OECD)
Canada	Direct transfers and tax expenditures (OECD)
China	Price support (IEA)
France	Direct transfers and tax expenditures (OECD)
Germany	Direct transfers and tax expenditures (OECD)
India	Price support (IEA)
Indonesia	Price support (IEA)
Italy	Direct transfers and tax expenditures (OECD)
Japan	Direct transfers and tax expenditures (OECD)
Mexico	Price support (IEA)
Republic of Korea	Direct transfers and tax expenditures (OECD)
Russia	Price support (IEA)
Saudi Arabia	Price support (IEA)
South Africa	Price support (IEA)
Turkey	Direct transfers and tax expenditures (OECD)
United Kingdom	Direct transfers and tax expenditures (OECD)
United States	Direct transfers and tax expenditures (OECD)

## **SOURCES OF INFORMATION**

The main source of information for direct transfers and tax expenditure was the OECD's analysis of fossil fuel support (OECD, 2020b). Data was obtained on July 13, 2020, so any changes made after that date will not be reflected in our analysis.

The source of information for price support was the IEA's analysis using the price-gap approach for estimating fossil fuel support (IEA, 2020a). Data was obtained on June 12, 2020, so any changes made after that date will not be reflected in our analysis.



### *5B Scale of public finance for fossil fuel-based power (2017–2018 average per unit of GDP)*

This sub-indicator is the annual average amount of finance provided by public finance institutions for domestic and international projects relating to fossil fuel-based power in 2017 and 2018 per unit of GDP. Data for 2019 is not available for this report.

#### **CALCULATION APPROACH AND SOURCES OF INFORMATION**

See 3B

### *5C Scale of SOE investment for fossil fuel-based power (2017–2019 average per unit of GDP)*

This sub-indicator quantifies the annual average scale of SOE investment provided for fossil fuel-based power in 2017, 2018, and 2019 per unit of GDP.

#### **CALCULATION APPROACH AND SOURCES OF INFORMATION**

See 3C

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

This indicator examines the scale of G20 government support (direct transfers and tax expenditure or price support) for fossil fuel use by industry, transport, households, and others (2017–2019 average per unit of GDP).

Note that there is no public finance or SOE investment associated with fossil fuel use by industry, transport, households, and others.

### *6A Scale of either direct transfers and tax expenditures or price support for fossil fuel use by industry, transport, households, and others (2017–2019 average per unit of GDP)*

This sub-indicator quantifies the annual average scale of whichever is larger between either direct transfers and tax expenditure or price support provided for fossil fuel use by industry, transport, households, and others in 2017, 2018, and 2019 per unit of GDP.

The measures used for sub-indicator 6A for each G20 country are indicated in Table 5.



**Table 5.** Support measures selected for sub-indicator 6A

<b>Country</b>	<b>Support measure (source)</b>
Argentina	Price support (IEA)
Australia	Direct transfers and tax expenditures (OECD)
Brazil	Direct transfers and tax expenditures (OECD)
Canada	Direct transfers and tax expenditures (OECD)
China	Price support (IEA)
France	Direct transfers and tax expenditures (OECD)
Germany	Direct transfers and tax expenditures (OECD)
India	Price support (IEA)
Indonesia	Price support (IEA)
Italy	Direct transfers and tax expenditures (OECD)
Japan	Direct transfers and tax expenditures (OECD)
Mexico	Direct transfers and tax expenditures (OECD)
Republic of Korea	Direct transfers and tax expenditures (OECD)
Russia	Price support (IEA)
Saudi Arabia	Price support (IEA)
South Africa	Direct transfers and tax expenditures (OECD)
Turkey	Direct transfers and tax expenditures (OECD)
United Kingdom	Direct transfers and tax expenditures (OECD)
United States	Direct transfers and tax expenditures (OECD)

## **CALCULATION APPROACH AND SOURCES OF INFORMATION**

See 5A

### **6.7 Indicator 7: Progress in ending government support to fossil fuels**

This indicator examines the change in government support (either direct transfers and tax expenditure or price support for oil consumption, public finance, and SOE investment) (2017–2019 average vs. 2014–2016 average) for fossil fuels and new public money commitments in response to the COVID-19 crisis with respect to fossil fuel-intensive sectors (resources, power, mobility, and buildings) as of August 12, 2020.



### *7A Change in oil consumption subsidies (2017–2019 average vs. 2014–2016 average, normalized for oil price, demand, and currency fluctuations)*

This sub-indicator quantifies the per cent change in government support to oil consumption (either direct transfers and tax expenditures or price support, whichever is the largest) over the two periods, 2017, 2018, and 2019 average vs. 2014, 2015, and 2016 average, normalizing for changes in oil price, oil consumption, and currency fluctuations.

$$\text{Subsidies} = \text{fn}(\text{Oil Price; Consumption; Currency Effects; Reforms})$$

#### **CALCULATION APPROACH**

For countries that have oil consumption support data available from two sources, both OECD and IEA (direct transfers and tax expenditures and price support), we determine which is larger in 2017, 2018, and 2019 per unit of GDP. The two datasets overlap for estimates of fossil fuel consumption subsidies in Argentina, China, India, Indonesia, Republic of Korea, Mexico, Russia, Saudi Arabia, and South Africa.

The total amount of budget transfers and tax expenditures provided by the government to oil in 2017, 2018, and 2019 is divided by three (i.e., averaged across the three years).

Similarly, the total amount of price support provided by the government to oil, through induced transfers in 2017, 2018, and 2019, is divided by three (i.e., averaged across the three years).

Then, for each country where both data sources are available, the larger of the two measures is selected for further analysis.

We then take an average of the 2014, 2015, and 2016 selected support measure and calculate what it would have been in the 2017, 2018, and 2019 average period if it had changed as a function of oil price, consumption, and currency effects alone. The per cent difference between this and the actually observed oil consumption support provided in 2017, 2018, and 2019 average is considered to be due to progress or regress on reform.

The total amount of support provided by the government to oil in 2017, 2018, and 2019 is divided by three (i.e., averaged across the three years) (A). The total amount of support provided by the government to oil in 2014, 2015, and 2016 is divided by three (i.e., averaged across the three years) (B).

The average crude oil price, oil consumption, and exchange rate in 2014, 2015, and 2016 are calculated. The average crude oil price, oil consumption, and exchange rate in 2017, 2018, and 2019 are calculated. The per cent change in each over the two periods, using the 2014, 2015, and 2016 average as a baseline, is calculated (a, b, c).

The average government support to oil in 2014, 2015, and 2016 is multiplied by the per cent change in crude oil price, oil consumption, and exchange rate (2014, 2015, and 2016 average vs. 2017, 2018, and 2019 average) to determine what the government support to oil would be if it only depended on changes in crude oil price, oil consumption, and exchange rate alone (C).

$$C=B*a*b*c$$



The per cent difference (D) is then calculated between the actually observed government support to oil in 2017, 2018, and 2019 average (A) vs. the calculated support if it was only dependent on changes in crude oil price, oil consumption, and exchange rate alone (C).

$$D=100*(A-C)/C$$

(D<0% = progress in reforming support to oil consumption; >0% = regress in reforming support to oil consumption)

### **SOURCES OF INFORMATION**

See 5A for sources of information on government support for oil (direct transfers, tax expenditures, and price support).

The source of information for crude oil prices and oil consumption was BP's *Statistical Review of World Energy—All Data, 1965–2019* spreadsheet (BP, 2019). Data was obtained on May 1, 2020, so any changes made after that date will not be reflected in our analysis.

Crude oil prices: Tab on Oil – Crude prices since 1861 (\$ money of the day column).

Oil consumption: Tab on Oil Consumption – Barrels (thousand barrels daily).

The source of information for exchange rates was the OECD's exchange rates (indicator) (OECD, 2020a). Data was obtained on June 1, 2020, so any changes made after that date will not be reflected in our analysis.

### **7B Change in public finance for fossil fuels (2017–2018 average vs. 2014–2016 average)**

This sub-indicator quantifies the per cent change in finance provided by public finance institutions for domestic and international projects relating to fossil fuels over the two periods; the 2017 and 2018 average vs. the 2014, 2015, and 2016 average.

### **CALCULATION APPROACH**

The total amount of public finance provided to fossil fuel projects, which includes any project whose financing was agreed in 2017 and 2018, is divided by two (i.e., averaged across the two years) (X). The total amount of public finance provided to fossil fuel projects, which includes any project whose financing was agreed in 2014, 2015, and 2016, is divided by three (i.e., averaged across the three years) (Y).

The per cent difference (Z) is then calculated between the two periods.

$$Z=100*(X-Y)/Y$$

(Z<0% = progress in ending public finance support for fossil fuels; >0% = regress in ending public finance support for fossil fuels)

### **SOURCES OF INFORMATION**

See 3B



### *7C Change in SOE investment in fossil fuels (2017–2019 average vs. 2014–2016 average)*

This sub-indicator quantifies the per cent change in SOE investment provided for fossil fuels over the two periods: the 2017–2019 average vs. the 2014–2016 average.

#### **CALCULATION APPROACH**

The total amount of SOE investment provided to fossil fuels reported upon in 2017, 2018, and 2019 is divided by three (i.e., averaged across the three years) (X). The total amount of SOE investment provided to fossil fuels reported upon in 2014, 2015, and 2016 is divided by three (i.e., averaged across the three years) (Y).

The per cent difference (Z) is then calculated between the two periods.

$$Z=100*(X-Y)/Y$$

(Z<0% = progress in ending SOE investment for fossil fuels; >0% = regress in ending SOE investment for fossil fuels)

#### **SOURCES OF INFORMATION**

See 3C

### *7D Public money commitments in response to the COVID-19 crisis (2020)*

This sub-indicator quantifies the total scale of public money commitments to fossil fuel-intensive sectors (resources, power, mobility and buildings) in response to the COVID-19 crisis up until August 12, 2020, per unit of GDP.

#### **CALCULATION APPROACH**

The amount of quantified public money commitments (USD) provided by governments for the sectors responsible for fossil fuel production and consumption in response to the COVID-19 crisis is totalled and then divided by the relevant G20 country's GDP value in 2019 to normalize the data for the economy size and allow for comparison across countries.

Both “conditional” and “unconditional” fossil fuel policies are captured.

#### **SOURCES OF INFORMATION**

The source of information for public money commitments in response to the COVID-19 crisis was the Energy Policy Tracker's data on fossil fuel support from G20 governments in response to the COVID-19 crisis (Energy Policy Tracker, 2020). Data was obtained on August 12, 2020, so any changes made after that date will not be reflected in our analysis. Therefore, data on COVID-19 public money commitments is not exhaustive due to the dynamic nature of the launch of government recovery programs.

### *7D Conditional public money commitments in response to the COVID-19 crisis as a percentage of the total (2020)*

This sub-indicator quantifies the proportion of the public money commitments in response to the COVID-19 crisis pledged for fossil fuel production and consumption that





is considered to be “conditional,” up until August 12, 2020, per unit of GDP. COVID-19 “conditional” commitments refer to those commitments where governments have made the support conditional on certain climate targets or additional pollution reduction requirements. For example, France has bailed out the Air France airline on the condition that it reduce its emissions.

### **CALCULATION APPROACH**

The proportion of “conditional” public money commitments provided by governments to assist the fossil fuel-intensive sectors in response to the COVID-19 crisis is totalled. This is then expressed as a percentage of the total COVID-19 government recovery finance provided for fossil fuels.

### **SOURCES OF INFORMATION**

See 7C.



## 7.0 Accompanying Data

The source of information for the gross domestic product (GDP, current USD) was taken from the World Bank GDP dataset (World Bank, 2020). Data was obtained on May 1, 2020, so any changes made after that date will not be reflected in our analysis.

The source of information for exchange rates was the OECD's exchange rates (indicator), (local currency units per USD [LCU/USD]) (OECD, 2020a). Data was obtained on June 1, 2020, so any changes made after that date will not be reflected in our analysis.

The source of information for crude oil prices and oil consumption was BP's *Statistical Review of World Energy – All Data, 1965–2019* spreadsheet (BP, 2019). Data was obtained on May 1, 2020, so any changes made after that date will not be reflected in our analysis.

Crude oil prices: Tab on Oil – Crude prices since 1861 (\$ money of the day column).

Oil consumption: Tab on Oil Consumption – Barrels (thousand barrels daily).



## 8.0 Oil Price Effects

Consumer subsidies (government support for fossil fuel use or consumption—direct transfer, tax expenditures, and price support measures) fluctuate with oil prices. In particular, the price support estimates from the IEA are sensitive to reference prices, which are calculated for fuels on the basis of international prices (IEA, 2020b). Producer subsidies (government support for coal, oil, and gas production-related activities—direct budget transfers, and tax expenditure, public finance, and SOE investment) also fluctuate with oil prices but in a less predictable way. Any drops or rises in government support to fossil fuels must be considered with this in mind, as such fluctuations cannot be directly attributed to government progress or regress on reforming its support for fossil fuels.



## 9.0 Overarching Data Assumptions

**Time frames and annual averages:** This report provides average annual values for G20 government support to fossil fuels. Based on the availability of the latest, most comprehensive data, annual averages have been calculated for the 2014, 2015, and 2016 period and the 2017, 2018, and 2019 period, except for data on public finance, where only the 2017 and 2018 annual averages have been calculated due to a lack of data availability for 2019. All the values are adjusted for inflation and set to real 2019 USD based on the U.S. Consumer Price Index.

**Exchange rates:** The source of information for exchange rates used to convert local currencies to USD was the OECD's exchange rates (indicator) (OECD, 2020a). Data was obtained on May 1, 2020, so any changes made after that date will not be reflected in our analysis.

**National and subnational coverage:** It must be noted that it is difficult to gather information on subnational support, which means it is likely that some of these measures have been overlooked. Where possible, the data includes measures provided at the national and subnational levels. The OECD's database of direct budget transfers and tax expenditure covers some subnational-level measures: the OECD's subnational data coverage for the United States only covers selected key producer and consumer states. There are also SOEs that exist at the subnational level, including those established by municipal, state, and provincial governments. The investment by these SOEs would have an impact on the level of overall support provided within a G20 country. However, due to the challenges of data access, they are not included within the estimates of SOE investment.

**Externalities:** The definition of subsidies we have used (the WTO definition) does not include the externalities arising from the use of fossil fuels, such as the cost of air pollution to healthcare systems. Some argue that quantifying and presenting these costs provides a more accurate picture of the total cost to governments—or the revenue foregone—due to the use of fossil fuels. The International Monetary Fund, for example, provides such estimates, which are made up of prices warranted by supply costs, environmental costs, and revenue considerations (Coady et al., 2019).



## 10.0 Data Gaps

As outlined above, G20 governments have made commitments to phase out fossil fuel subsidies. The first step in achieving these objectives is to clearly identify and estimate current subsidies, including through processes such as the G20 peer reviews.

Unfortunately, transparency of information on all types of government support to fossil fuels remains limited. Overall, our analysis of reporting demonstrates the significant gap in G20 countries in terms of their reporting on government support to fossil fuels. Across the analysis for all G20 countries, numerous direct transfers and tax expenditures could not be quantified in the Inventory of Support Measures for Fossil Fuels database (OECD, 2020b), while the fossil fuel-related activities of some public finance and SOE investments were identified but were not quantified either.

The OECD does not report on direct transfers and tax expenditures for Saudi Arabia. The researchers attempted to perform a bottom-up data collection of direct transfers and tax expenditures for Saudi Arabia; however, a lack of transparency meant that no government-published sources on support for fossil fuels were found. Data for Saudi Arabia is limited to IEA price support estimates for fossil fuel-based power and fossil fuel use, as well as some public finance and SOE investment data.

The OECD data did not include data for Turkey and the United Kingdom for the years 2018 and 2019 at the time of data collection for this report. Where data is missing in a year, the average is only taken for the years where data exists, for example, United Kingdom data for 2018 and 2019 is missing, so only the “average” of the 2017 data is used for the period.

Turkey’s public finance institutions did not supply any transaction-level data on its fossil fuel investments and, hence, its level of support will be underestimated.

For some of the SOEs included in the analysis, no available data could be found with respect to their capital investment for the entire period considered (e.g., for the Argentina’s YCRT or China’s China Guodian Corporation); for others, data was missing for specific years in the period considered. This contributes to a further underestimation of governments’ SOE investments.

Finally, as has been mentioned throughout this note, collecting subnational-level data (especially for SOE investments) is difficult, and, therefore, it is likely that our findings underestimate the level of government support for fossil fuels in the G20 countries across all support measures.

Public money commitments to fossil fuel-intensive sectors are very 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)).



## References

- 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>
- 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>
- Coady, D., Parry, I., Le, N.-P., & Shang, B. (2019). *Global fossil fuel subsidies remain large: An update based on country-level estimates*. <https://www.imf.org/~media/Files/Publications/WP/2019/WPIEA2019089.ashx>
- 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>
- 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/>
- 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. (2020). *Communiqué: G20 Finance Ministers and Central Bank Governors Meeting 15 April 2020 [Virtual]* [Press release]. [https://g20.org/en/media/Documents/G20\\_FMCBG\\_Communiq%C3%A9\\_EN\\_\(2\).pdf](https://g20.org/en/media/Documents/G20_FMCBG_Communiq%C3%A9_EN_(2).pdf)
- Gençsü, I., Whitley, S., Roberts, L., Beaton, C., Chen, H., Doukas, A., Geddes, A., Gersimchuk, 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>



- Intergovernmental 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)
- International Energy Agency (IEA). (2020a). *IEA subsidies database*. <https://www.iea.org/topics/energy-subsidies>
- International Energy Agency. (2020b). *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>
- 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 (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. (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/>
- Sdralovich, 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>
- 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)*. <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. (2015c). *Transforming our world: The 2030 Agenda for Sustainable Development*. <https://sustainabledevelopment.un.org/post2015/transformingourworld/publication>



- 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>
- United Nations Environment Programme, Organisation for Economic Co-operation and Development, & International Institute for Sustainable Development. (2019). *Measuring fossil fuel subsidies in the context of the sustainable development goals.* <https://wedocs.unep.org/bitstream/handle/20.500.11822/28111/FossilFuel.pdf>
- 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)







<b>Country</b>	<b>Public finance institutions</b>
Saudi Arabia	Public Investment Fund; Saudi Fund for Development; Saudi Industrial Development Fund
South Africa	Development Bank of Southern Africa; Industrial Development Corporation of South Africa; Export Credit Insurance Corporation
United Kingdom	CDC Group Plc; Department for International Development; Department for Business Innovation and Skills; UK Export Finance
United States	Overseas Private Investment Corporation; Export-Import Bank of the United States; US Department of Energy
United States	None identified



## Annex 2. List of Majority Government-Owned State-Owned Enterprises Reviewed

Country	National-level majority state-owned enterprises
Argentina	YPF (ex Yacimientos Petrolíferos Fiscales S. A.) YCRT (Yacimientos Carboníferos Río Turbio) IEASA (ex ENARSA)
Australia	None identified
Brazil	Petrobras (Petróleo Brasileiro S.A.)
Canada	Trans Mountain Pipeline
China	Sinopec Group (China Petrochemical Corporation) CNPC (China National Petroleum Corporation, Petro China) CNOOC (China National Offshore Oil Corporation) China Huadian Corporation China Coal Energy China Huaneng Group Corporation China Datang Corporation China Energy Investment Corporation China Guodian Corporation Shenhua Group CR Power (China Resources Power)
France	EDF (Électricité de France)
Germany	None identified
India	ONGC (Oil and Natural Gas Corporation Limited) GAIL (Gas Authority of India Ltd.) IOCL (Indian Oil Corporation Limited) BPCL (Bharat Petroleum Corporation Limited) HPCL (Hindustan Petroleum Corporation Limited) CIL (Coal India Limited) SCCL (Singareni Collieries Company Limited) NTPC (National Thermal Power Corporation Limited) BHEL (Bharat Heavy Electricals Limited)



<b>Country</b>	<b>National-level majority state-owned enterprises</b>
Indonesia	PT Pertamina PTBA (PT Bukit Asam) PLN (Perusahaan Listrik Negara) PGN (Perusahaan Gas Negara)
Italy	None identified
Japan	None identified
Mexico	Pemex (Petróleos Mexicanos); CFE (Comisión Federal de Electricidad)
Republic of Korea	KNOC (Korea National Oil Corporation) KEPCO (Korea Electric Power Corporation) KOGAS (Korea Gas Corporation) KOCOAL (Korea Coal Corporation)
Russia	Gazprom Rosneft Bashneft*
Saudi Arabia	Saudi Aramco Saudi Electricity Company
South Africa	Petro SA Transnet; Eskom AEMFC (African Exploration Mining and Finance Corporation)
Turkey	TKI (Turkish Coal Operations Authority) TTK (Turkish Hard Coal Enterprises) EÜAŞ (Electricity Generation Company) BOTAŞ (Petroleum Pipeline Company) TPAO (Turkish Petroleum Corporation)
United Kingdom	None identified
United States	None identified

