G7 fossil fuel subsidy scorecard

Policy brief

Tracking the phase-out of fiscal support and public finance for oil, gas and coal

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Key findings

- Despite repeated pledges to end fossil fuel subsidies G7 countries provided at least $100 billion annually (2015 and 2016) in government support for the production and consumption of oil, gas and coal, both at home and abroad in more than 50 countries around the world. This included $81 billion in fiscal support through direct spending and tax breaks; and $20 billion in public finance on average per year in 2015 and 2016.
- In tracking G7 countries' progress towards meeting their 2025 fossil fuel subsidy phase-out pledge, this scorecard identified leaders and laggards across all seven indicators, but overall, no G7 country scored strongly; every G7 country is at serious risk of not delivering on their fossil fuel phase-out commitment.
- Among the G7, France scored highest due to its progress in ending support for fossil fuel production and power both at home and aboard, while the United States (US) scored lowest due to continued support for exploration and production, and backtracking on previous pledges.
- **Examples of progress include:**
  - An end to all public finance for coal mining by Canada, France, and Italy, with the latter two countries also ending all fiscal support for coal mining (with the exception of research and development). This trend should continue given European Union (EU) governments' commitment to end support to hard coal mining by the end of 2018.
  - Canada, France, the United Kingdom (UK) and the US also appear to have ended international public finance for coal-fired power (although this may change due to recent policy revisions in the US).
- **Key areas of concern include:**
  - All G7 governments have provided new public finance for oil and gas exploration and production since 2016 when the Paris Agreement came into force.
  - Japan continues to finance coal-fired power plants abroad.
- Across all G7 fiscal support for oil, gas and coal, 64% is for use by transport, households, industry and other sectors in G7 countries. This finding runs contrary to the widely held view that consumption subsidies are primarily a challenge for emerging markets and low-income countries.

Recommendations for the G7

- Complete and publish comprehensive fossil fuel subsidy peer reviews no later than 2019.
- Establish country-level plans for fossil fuel subsidy phase-out starting with key subsidies with negative social and environmental impacts.
- Follow the example set by EU governments and develop these plans with the aim of meeting an earlier 2020 deadline.
- Ensure subsidies for energy transition do not support fossil fuels, and that any remaining support goes to facilitating a 'just transition' and to vulnerable communities and households.
- Lead by example within other fossil fuel subsidy phase-out processes such as the G20 and Asia-Pacific Economic Cooperation, UN Sustainable Development Goals (SDGs), and United Nations Framework Convention on Climate Change.
- Establish a standing agenda item at the G7 Energy Ministerial meetings to track progress towards the 2025 deadline, with support from the Organisation for Economic Co-operation and Development, International Energy Agency and the International Monetary Fund.

The scorecard

Scoring G7 progress in ending government support for fossil fuels

	FRANCE	GERMANY	CANADA	UK	ITALY	JAPAN	US
Overall score and ranking	**1st** 63/100	**2nd** 62/100	**3rd** 54/100	**4th** 47/100	**5th** 46/100	**6th** 44/100	**7th** 42/100
1. Transparency	**3rd** 50/100	**1st** 90/100	**6th** 25/100	**7th** 10/100	**3rd** 50/100	**5th** 30/100	**2nd** 70/100
2. Pledges and commitments	**1st** 83/100	**1st** 83/100	**4th** 75/100	**1st** 83/100	**5th** 58/100	**6th** 50/100	**7th** 25/100
3. Ending support for fossil fuel exploration	**1st** 63/100	**1st** 63/100	**3rd** 42/100	**4th** 38/100	**4th** 38/100	**7th** 29/100	**4th** 38/100
4. Ending support for coal mining	**1st** 75/100	**4th** 60/100	**1st** 75/100	**5th** 55/100	**1st** 75/100	**6th** 45/100	**7th** 20/100
5. Ending support for oil and gas production	**1st** 54/100	**1st** 54/100	**7th** 25/100	**3rd** 42/100	**3rd** 42/100	**5th** 38/100	**6th** 33/100
6. Ending support for fossil fuel-based power	**2nd** 64/100	**6th** 39/100	**1st** 71/100	**3rd** 50/100	**7th** 29/100	**4th** 46/100	**5th** 43/100
7. Ending support for fossil fuel use	**4th** 54/100	**6th** 46/100	**2nd** 67/100	**5th** 50/100	**7th** 33/100	**1st** 71/100	**2nd** 67/100

Introduction

G7 countries (and others around the world) are in the early stages of an energy transition – including, in some areas, a shift away from the production and consumption of fossil fuels. This transition is being driven by decarbonisation objectives and policies, as well as a sharp reduction in the cost of clean technologies.

In acknowledgement of this, every year since 2009 the G7, and G20, have committed to phase out fossil fuel subsidies (G7, 2017; G20, 2017), along with related commitments under the Sustainable Development Goals (SDGs), the Paris Agreement. But while progress is being made to transition away from fossil fuels, this analysis shows that G7 governments continue to provide subsidies to the production and use of coal, oil and gas, which may hinder or delay these shifts.

Despite their numerous commitments, not only have G7 governments taken limited action to address fossil fuel subsidies but they have also failed to put in place any mechanisms to define and document the full extent of their support to oil, gas and coal, or to hold themselves accountable for achieving these pledges. This scorecard aims to address this accountability gap and track, for the first time, each G7 country's progress in phasing out fossil fuel subsidies across seven indicators.

The global transition away from fossil fuels

Coal

The International Energy Agency (IEA) estimates that to keep global temperature rise well below 2°C, coal-fired power plant emissions in Europe must fall by 80%, and be reduced by more than half globally by 2030 (IEA, 2016). And there has been some progress. A recent study has found that all leading indicators of coal power capacity growth worldwide dropped steeply in 2017, including pre-construction planning, construction starts, and project completions (Shearer et al., 2018). The International Renewable Energy Agency (IRENA) has estimated that all renewable electricity technologies will be cost competitive with, or even undercut, fossil fuels as early as 2020 (IRENA, 2018) and, in some parts of the United States, it is already possible to build and operate new solar and wind projects at a lower cost than continuing to operate existing coal plants (Steinberger and Long, 2018)

To speed up this transition, four of the G7 governments (Canada, France, Italy and the United Kingdom) have already committed to end coal-fired power between 2023 and 2030, and in April 2017, for the first time in 135 years, the UK had its first full day when no coal-fired power was used (Littlecott and Webb, 2017; Clark, 2017). Thanks to this drop in coal use, the UK's carbon emissions from fossil fuels in 2017 were the same as they were in 1890 (Hausfather, 2018).

Oil and gas

We are also seeing a decline in both investments and resulting oil and gas production globally (IEA, 2017). The fall in investment has been a result of sustained low oil and gas price forecasts, driven by: growth of the US shale gas industry; failure (until recently) of the Organization of the Petroleum Exporting Countries (OPEC) to cut production; weakening global demand – particularly in Asia; and the decarbonisation efforts linked to endeavours to address climate change (Bousso and Schaps, 2017; IOGP, 2016)

Also influencing the move away from oil and gas may be the emergence of bans on production and use in several countries and regions. Among the G7, France has announced it will stop granting new licences for oil and gas exploration (with a long-term goal of ending production by 2040), and has banned fracking alongside Germany, Scotland and Wales (in the UK), and several US states and Canadian provinces (De Beaupuy, 2017; Keep Tap Water Safe, 2018).

Other factors driving the transition from oil and gas could be the fall in demand for fossil fuels for plastics production, and significant disruption in the transport sector – now the biggest source of greenhouse gas emissions in Europe and the US (Vaughan, 2018; Transport and Environment, 2016; EIA, 2018). The transformation of the transport sector is being prompted by concerns about emissions of harmful gases and particulate matter, elevated significantly by the recent diesel scandal involving car companies cheating on emissions testing. This has led to calls for, and implementation of, stricter regulations[1] and greater government incentives for cleaner alternatives including electric vehicles (IEA, 2017a). In July 2017, both France and the UK announced plans to ban new petrol and diesel cars and vans from 2040 (Petroff, 2017). In addition, among the G7, Germany, Japan and a number of US states have electric car sales targets in place as part of wider clean energy and mobility plans (IEA, 2017b). Analysis by UBS has estimated that the cost of owning an electric car will draw level with that of a traditional combustion engine vehicle as early 2018 (Campbell, 2017).

1 Despite a potential rollback of national clean car standards in the US, some of the largest markets in the country such as California are keeping strong vehicle standards (Tonachel, 2018).

G7 fossil fuel subsidy phase-out commitments

Every year since 2009 the G7, and G20, have committed to phase out fossil fuel subsidies (G7, 2017; G20, 2017). At the 2016 G7 Leader's Summit in Japan, a 2025 deadline was suggested for meeting this commitment and this was repeated by the G7 Energy Ministers at their 2017 meeting in Rome (G7, 2016; G7, 2017).

Several G7 public finance institutions (or multilateral public finance institutions that receive contributions from the G7 countries) have made pledges to end some of their support for fossil fuels. For example, all G7 countries except for Italy and Japan[2] have made some level of commitment to end public finance for coal (Doukas et al., 2017). In addition, although no G7 country has specific pledges to end public finance for oil and gas, restrictions have been set by institutions to which they contribute. Also (though not included in this scorecard) the Asian Development Bank (ADB) and the African Development Bank (AfDB) both have restrictions on finance for oil and gas exploration, and the World Bank Group announced in late 2017 that it would end its finance for upstream oil and gas from 2019 (Doukas et al., 2017; World Bank, 2017).

All G7 countries have also committed to the SDGs, which highlight 'rationalising' fossil fuel subsidies as a means of implementing Goal 12 to 'ensure sustainable production and consumption patterns' (UN, 2015).

These commitments reflect the pledges these governments have made under Paris Agreement to achieve zero net emissions in the second half of this century, and to make 'finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development' (UNFCCC, 2015).

About this scorecard

Despite their numerous commitments, G7 governments have taken limited action to address fossil fuel subsidies. Moreover, they have also failed to put in place any mechanisms to define and document the full extent of these government fossil fuel subsidies or to hold themselves accountable for achieving these pledges.

This scorecard aims to address this accountability gap and, for the first time, track each G7 country's progress in phasing out fossil fuel subsidies across seven indicators.

Definitions

In its Agreement on Subsidies and Countervailing Measures, the World Trade Organization (WTO) defines a subsidy as (*paraphrased*): any financial contribution by a government, or agent of a government, that is recipient-specific and confers a benefit on its recipients in comparison to other market participants (WTO, 1994: section 1.1).

This definition has been accepted by the 164 WTO Member States including all G7 countries, and includes the following subsidy categories:

a. 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), below market value
b. government revenue that is otherwise due, foregone or not collected (e.g. fiscal incentives such as tax expenditures)
c. government provision of goods or services other than general infrastructure, or purchase of goods, below market value
d. income or price support.

This scorecard focuses on a subset of the categories (a) and (b) in the WTO definition, grouped as: (1) fiscal support (budgetary transfers and tax expenditures); and (2) public finance (grants, loans, equity infusions and guarantees).[3] We have not included information under categories (c) and (d) of the WTO definition in this analysis due to data limitations. This scorecard therefore excludes any G7 government provision of goods services below market value, including through state-owned enterprises (SOEs) (e.g. state-owned coal, oil or gas companies, as well as state-owned utilities that produce fossil fuel-powered electricity); and any G7 government price and income support to fossil fuels (e.g. provision of fossil fuel based electricity at a lower price for specific groups or sectors, such as households or industry).

Given these exclusions, and gaps in G7 transparency (see Findings), the scale of G7 government support to fossil fuels identified in this scorecard is likely an underestimate.

2 The US has also recently backtracked on prior commitments to restrict public finance for coal. In 2017, US Treasury guidelines that restricted US support for coal-fired power projects at international financial institutions were reversed.

3 The OECD estimates that the subsidy element of loans provided by governments – i.e. the revenue foregone because the governments provide such credit support below market value – can constitute up to 20% of their face value (OECD, 2018). However, such estimates are not reported. Instead, this report uses the data on the principal amount disbursed for direct loans or loan guarantees under the category of public finance.

Indicators

This scorecard tracks G7 progress towards the phase-out of fossil fuel subsidies against seven indicators, based on 38 sub-indicators (see also Annex 1):

- **Indicator 1, transparency,** examines comprehensiveness of government reporting on fiscal support and public finance to oil, gas and coal.
- **Indicator 2, pledges and commitments,** captures high-level G7 political commitments to phase out fiscal support and public finance to fossil fuels.
- **Indicators 3–7** look at progress by G7 governments in ending support for fossil fuel exploration, coal mining, oil and gas production, fossil fuel-based power, and fossil fuel use in industry, transport, households, agriculture and other sectors (see Figure 1).

The score for each indicator is given out of 100 (with 100 being a 'high' or 'perfect' score), so that each indicator from 1 to 7 was given equal weighting in determining the final score (with two overarching indicators on transparency and commitments, three indicators on fossil fuel production, and two indicators on fossil fuel consumption). Their overall score was an average of their score across the seven indicators.

This score out of 100 was calculated based on the sub-indicator scores, which were awarded according to different criteria (see the *Methodology note*). Each sub-indicator was given equal weighting within each indicator. For example, a country would receive an indicator score of 100 if it scored perfectly on each sub-indicator, and 0 if it scored '0' on each sub-indicator).

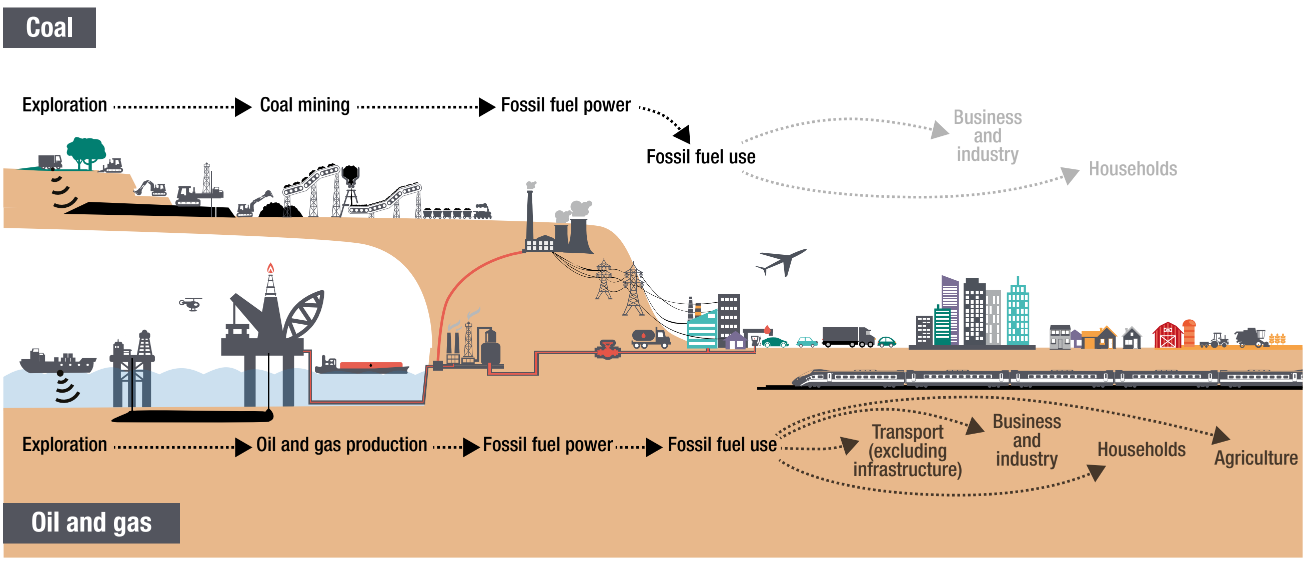
Detailed information on all indicators and sub-indicators, along with the definitions data sources used, and the scoring process are provided in the *Methodology note*.

Findings

G7 governments continue to subsidise fossil fuels

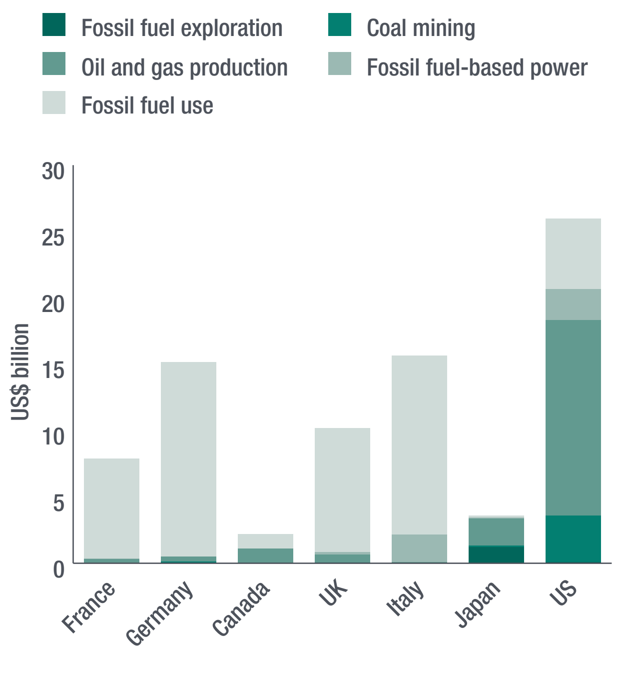
We find that, with less than seven years to meet their 2025 phase-out deadline, G7 governments continue to provide substantial support for the production and use of oil, gas and coal. On average per year in 2015 and 2016 the G7 governments gave at least $81 billion in fiscal support and $20 billion in public finance, for both production and consumption of oil, gas and coal at home and overseas (figures 2 and 3; and Annex 2 for the country-by-country breakdown).

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



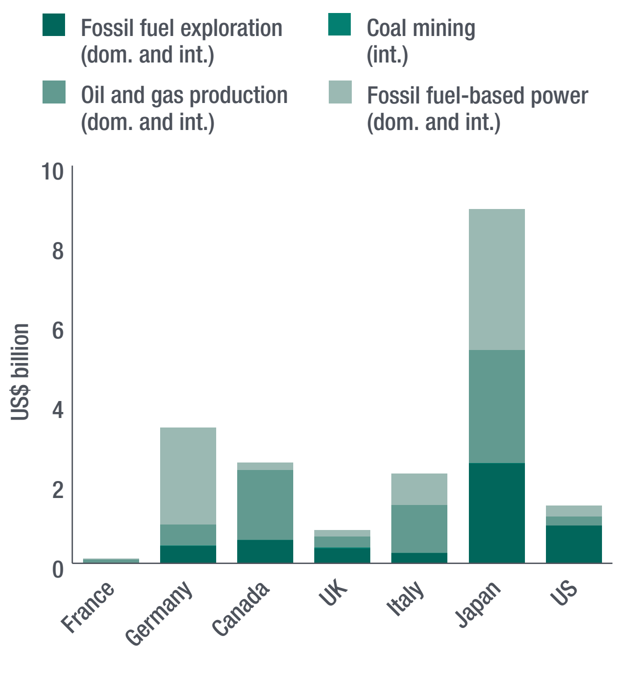
Source: author's elaboration

Figure 2 G7 fiscal support to fossil fuels (annual average in 2015 and 2016)



Note: direct comparison of the value of fiscal support between countries can be challenging. As the OECD emphasised in its 2015 Companion to the Inventory of Support Measures for Fossil Fuels, a significant number of subsidies take the form of tax expenditures that are calculated using a country's benchmark tax regime. Because this can vary widely by country, tax expenditure estimates are not readily comparable across countries (OECD, 2015). Please see Annex 2 for full data.
Source: author's elaboration

Figure 3 G7 public finance to fossil fuels (annual average in 2015 and 2016)



Note: the scale of coal mining is too small to represent visually in this figure. Please see Annex 2 for full data.
Source: author's elaboration

Contrary to the narrative that subsidies for fossil fuel consumption are primarily a challenge for emerging markets and developing countries, we find that 64% of total fiscal support is directed towards fossil fuel use across the G7. This includes significant support to fossil fuel use in transport ($26 billion), industry ($9 billion), households ($11 billion), and in other sectors ($5 billion).

We also find that in 2015 and 2016 the G7 public finance institutions reviewed (see the *Methodology note*) provided support to fossil fuel exploration, production and fossil fuel-based power in 57 countries (including other G7 countries) (Annex 3).

Scoring G7 progress

The G7 will only fulfil their pledge if each country acts ambitiously to end support to fossil fuel production and consumption by implementing the best practices demonstrated by leading members and holding laggards to account.

Our scoring (see *Methodology note* for detail) reveals that for most indicators (except for those on ending support to fossil fuel exploration and oil and gas production) at least one country scores more than 65/100, which suggests that for each indicator at least one country has made some progress towards ending fossil fuel subsidies (see Table 1). For each indicator, there is also a set of countries – those scoring less than 35/100 – who are lagging behind (Table 1; Box 1).

We also find that even the highest aggregate score among the G7 (given to France) is still low, at 63/100, with France continuing to provide significant support for oil and gas production (at home and abroad), gas and coal fired-power (at home and abroad), and for fossil-fuel use domestically (particularly in the transport sector). The lowest scoring country was the US, with 42/100.

Table 1 Scoring G7 progress in ending government support for fossil fuels

	FRANCE	GERMANY	CANADA	UK	ITALY	JAPAN	US
Overall score and ranking	**1st** 63/100	**2nd** 62/100	**3rd** 54/100	**4th** 47/100	**5th** 46/100	**6th** 44/100	**7th** 42/100
1. Transparency	**3rd** 50/100	**1st** 90/100	**6th** 25/100	**7th** 10/100	**3rd** 50/100	**5th** 30/100	**2nd** 70/100
2. Pledges and commitments	**1st** 83/100	**1st** 83/100	**4th** 75/100	**1st** 83/100	**5th** 58/100	**6th** 50/100	**7th** 25/100
3. Ending support for fossil fuel exploration	**1st** 63/100	**1st** 63/100	**3rd** 42/100	**4th** 38/100	**4th** 38/100	**7th** 29/100	**4th** 38/100
4. Ending support for coal mining	**1st** 75/100	**4th** 60/100	**1st** 75/100	**5th** 55/100	**1st** 75/100	**6th** 45/100	**7th** 20/100
5. Ending support for oil and gas production	**1st** 54/100	**1st** 54/100	**7th** 25/100	**3rd** 42/100	**3rd** 42/100	**5th** 38/100	**6th** 33/100
6. Ending support for fossil fuel-based power	**2nd** 64/100	**6th** 39/100	**1st** 71/100	**3rd** 50/100	**7th** 29/100	**4th** 46/100	**5th** 43/100
7. Ending support for fossil fuel use	**4th** 54/100	**6th** 46/100	**2nd** 67/100	**5th** 50/100	**7th** 33/100	**1st** 71/100	**2nd** 67/100

Box 1 Key near-term challenges for each G7 country

Canada must improve transparency as it does not publish specific reports on fiscal support to fossil fuels. In addition, Canada must put in place a plan to phase out support to oil and gas, as it is the largest provider of fiscal support to oil and gas production (per unit of GDP).

France must ensure that steps to shrink the taxation gap between diesel and petrol by 2021 (enshrined in national legislation) are implemented. In addition, the government must make sure its commitments are met both at home and abroad as, despite phasing out domestic exploration, France's public finance institutions have recently committed to financing new fossil fuel exploration overseas (e.g. in 2017 in Mozambique).

Germany must end public finance for fossil fuel-based power (at home and abroad), and develop a plan for phasing out significant and ongoing fiscal support to the use of diesel in transport.

Italy provides significant levels of fiscal support to the transport sector, the vast majority of which goes towards the use of diesel fuel. Italy must take clear steps to phase out overall fiscal support to fossil fuel consumption with a specific focus on near-term action to end subsidies to diesel.

Japan must improve transparency: it does not publish specific reports on fiscal support to fossil fuels, nor has it participated in the G20 fossil fuel subsidy peer review process. Japan must also make and keep clear near-term commitments to end international finance for coal-fired power.

The US is providing the highest level of total fiscal support to domestic coal, oil and gas production of all the G7 countries. The US must take proactive steps in the near-term to phase out government support to fossil fuel production at home.

The UK has extremely poor transparency: it does not publish specific reports on fiscal support to fossil fuels, nor has it participated in a peer review process under the G20. In addition, despite the strong high-level commitments and calls to end subsidies, the government denies that it provides any fossil fuel subsidies (under the government's own definition).

Note: this G7 fossil fuel subsidy scorecard is also accompanied by more detailed scorecards for each of the G7 countries (see Annex 4).

Indicator 1: transparency

Ranking (across G7)	Germany (1st)	US (2nd)	France (3rd)	Italy (3rd)	Japan (5th)	Canada (6th)	UK (7th)
Score (out of 100)	90	70	50	50	30	25	10

Indicator 1 on transparency looks at government recognition of and reporting on fiscal support and public finance to fossil fuels, using five sub-indicators (Annex 1).

Our analysis demonstrates significant differences between G7 governments in terms of their reporting on fiscal support to fossil fuels. Only one country reviewed – Germany – regularly reports on its fiscal support. By contrast, the UK denies that it provides any fossil fuel subsidies (under the government's own definition).

In addition to Germany, a few other countries have recently published inventories of fossil fuel subsidies. At the end of 2016, Italy launched its first inventory of environmentally harmful subsidies, including for fossil fuels – the Catalogo dei Sussidi Ambientali (Dannosi e Favorevoli). In January 2017, the French Ministry of Environment, Energy and the Sea published a report on environmental taxation, which includes energy, transport, pollution and resource taxation measures.

We also find that only three of the G7 governments (Germany, Italy and the US) have completed or committed to undertake a peer review of their fossil fuel subsidies as part of the G20 process.[4] These gaps in transparency are supported by the Organisation for Economic Co-operation and Development (OECD) analysis of support for fossil fuels, which is updated annually and includes information for all G7 countries. France, Germany and Japan are the only G7 countries for which the OECD has been able to quantify all measures identified. In the case of the UK, only 70% of measures have been quantified.

Finally, the accessibility of information on public finance for fossil fuels also varies significantly. We find that the US is the only G7 country for which all public finance institutions publish transaction-level data that appears to be comprehensive and specific (see *Methodology note* for information on public finance institutions reviewed). Overall, these gaps in transparency mean that estimates of fiscal support and public finance in this report are likely to be underestimates of the actual level of support provided by the G7 governments.

Indicator 2: pledges and commitments

Ranking (across G7)	France (1st)	Germany (1st)	UK (1st)	Canada (4th)	Italy (5th)	Japan (6th)	US (7th)
Score (out of 100)	83	83	83	75	58	50	25

Indicator 2 looks at countries' pledges to end fiscal support and public finance, and whether governments have backtracked on these by making any high-level announcements that go against those pledges, using three sub-indicators (see Annex 1).

As outlined, many G7 countries have made pledges and commitments to end fossil fuel subsidies that go beyond those made every year since 2009 by the G7 and G20 governments.

These pledges include those made by the EU Member States to phase out subsidies to hard coal mining by 2018 and environmentally harmful subsidies (EHS) (including fossil fuel subsidies) by 2020, and by signatories to the Convention on Biological Diversity (Aichi Target 3) who have also pledged to phase out EHS by 2020. Only the US is not part of either of these commitments with nearer-term deadlines.

Except for Italy and Japan, all G7 countries have also made some level of commitment to end public finance for coal. Here, the US is also an outlier, having recently back-tracked on previous commitments to restrict public finance for coal. In 2017, US Treasury guidelines that restricted US support for coal-fired power projects at international financial institutions were reversed.

Indicator 3: ending support for fossil fuel exploration

Ranking (across G7)	France (1st)	Germany (1st)	Canada (3rd)	Italy (4th)	UK (4th)	US (4th)	Japan (7th)
Score (out of 100)	63	63	42	38	38	38	29

Indicator 3 reviews G7 fiscal support and public finance to exploration for coal, oil and gas, and is based on six sub-indicators (see Annex 1).

4 To facilitate progress against their commitment to phase out fossil fuel subsidies, both G20 and APEC leaders decided to use voluntary self-reviews and, later, peer reviews of fossil fuel subsidies (Gerasimchuk et al., 2017).

The Intergovernmental Panel on Climate Change (IPCC) has estimated that to meet the objective of keeping warming to no more than 2°C, at least three-quarters of existing proven reserves of oil, gas and coal will need to be left in the ground (IPCC, 2014).

Despite these clear boundaries, all the G7 governments have provided new public finance for fossil fuel exploration since the end of 2016, clearly undermining their commitments under the Paris Agreement.

Among the G7, only Canada has reformed fiscal support to fossil fuel exploration at home, by reforming the Canadian Exploration Expense (CEE). Although it did not completely phase out the CEE, it did reclassify certain expenses (such as those related to successful discovery wells as development expenses) so that they are now deducted at a lower rate. The UK and the US have also provided new or extended fiscal support (through tax breaks) for domestic fossil fuel exploration since 2016 (see more detail in Annex 4).

Of all the G7 governments, France has come closest to ending support to fossil fuel exploration (with no fiscal support or public finance identified in data gathered for 2015 or 2016). However, in 2017 France's Compagnie Française d'Assurance pour le Commerce Extérieur (Coface) provided support for natural gas exploration in Mozambique (alongside the UK and Italy). This continued public finance for exploration abroad is at odds with France's commitments to end exploration at home.

Indicator 4: ending support for coal mining

Ranking (across G7)	Canada (1st)	France (1st)	Italy (1st)	Germany (4th)	UK (5th)	Japan (6th)	US (7th)
Score (out of 100)	75	75	75	60	55	45	20

Indicator 4 reviews G7 fiscal support and public finance for coal mining, throughout the different stages of production, and is based on five sub-indicators (Annex 1). This indicator does not include support for coal exploration (already captured under indicator 3), but rather includes access, development, extraction and transportation. The subsidies captured by this indicator do not include those being provided for transitioning *away from* coal – such as support for workers and communities and to rehabilitation of coal mining sites (though these make up a significant part of the support).

Ending government incentives for coal mining is one area in which there has been some significant progress across the G7. Canada, France and Italy have ended all public finance for coal mining, with the latter two countries also ending all fiscal support for coal mining (with the exception of research and development), based on our review of support provided between January 2015 and March 2018. Some of this progress may have come as the EU Member States have a commitment to phase out subsidies to hard coal mining by 2018.

The only G7 government providing both new fiscal support and public finance for coal mining since the end of 2016 is the US, with Japan providing new public finance for coal mining overseas. The US government is also undermining previous efforts to reduce domestic support for coal mining. In 2017, the US government rescinded a prior coal valuation rule that had been designed to stop firms from selling coal extracted on federal lands to their own subsidiaries at artificially low rates, with the aim of reducing royalty payments (Volcovici, 2017).

Indicator 5: ending support for oil and gas production

Ranking (across G7)	France (1st)	Germany (1st)	Italy (3rd)	UK (3rd)	Japan (5th)	US (6th)	Canada (7th)
Score (out of 100)	54	54	42	42	38	33	25

Indicator 5 looks at G7 fiscal and public finance support for oil and gas production, and is based on five sub-indicators (see Annex 1). This does not include support to exploration for oil and gas (already captured under indicator 3), and rather includes the following stages of production: development, extraction and preparation; pipelines and storage; as well as aid to gas stations.

Recent analysis has estimated that the reserves in oil and gas fields currently in operation, even without coal, would take the world beyond 1.5°C – the threshold of temperature rise at which the worst impacts of climate change can be avoided (OCI, 2016). Based on these findings, if the G7 are to meet climate commitments, no new fossil fuel extraction or transportation infrastructure should be built and some early closure of existing operations will be required.

Despite this urgent need to restrict fossil fuel production, not a single G7 government has ended fiscal support or public finance to oil and gas production, with Canada providing the highest levels of support (per unit of GDP). All the G7 governments have also provided new public finance to oil and gas production since the end of 2016 (when the Paris Agreement came into force).

Indicator 6: ending support for fossil fuel-based power

Ranking (across G7)	Canada (1st)	France (2nd)	UK (3rd)	Japan (4th)	US (5th)	Germany (6th)	Italy (7th)
Score (out of 100)	71	64	50	46	43	39	29

Indicator 6 looks at G7 fiscal support and public finance to fossil fuel-based power, including co-generation of electricity and heat from coal, oil and gas, and is based on seven sub-indicators (see Annex 1). This indicator includes construction of power plants, and power generation.

In terms of domestic support to fossil fuel power, Germany is the only G7 country that was found *not* to have any fiscal support to coal and gas fired power. However, Germany does have plans to establish a capacity reserve under which 2.7 GW of coal-fired generation will receive (currently undefined) payments for staying available as back-up capacity until 2021 (van der Burg and Whitley, 2017). This form of support is becoming increasingly common, with France and Japan the only G7 countries that do not have active capacity mechanisms (which currently support fossil fuel power) (see Box 2).

Canada, France, the UK and the US all appear to have ended international public finance for coal-fired power. This trend may reverse due to recent policy changes in the US, and Japan has continued to provide public finance for coal-fired power plants since the end of 2016. In addition, all G7 governments continued to provide public finance at home and abroad for gas fired-power plants (in 2015 and 2016), with Canada the only G7 government not to provide new public finance to fossil fuel power since the end 2016.

Indicator 7: ending support for fossil fuel use

Ranking (across G7)	Japan (1st)	Canada (2nd)	US (2nd)	France (4th)	UK (5th)	Germany (6th)	Italy (7th)
Score (out of 100)	71	67	67	54	50	46	33

Indicator 7 looks at fiscal support for fossil fuel use in different sectors (outside of electricity generation, which is already covered under indicator 6). No public finance from the G7 countries for fossil fuel use was identified during the period reviewed, except for specific support for the petrochemical industry, which is not included in our analysis of public finance.

Italy, Germany and France continued to provide significant levels of fiscal support to fossil fuel use in transport and industry, with Italy also providing significant support to fossil fuel use in households. Given the challenging economic circumstances for many families and individuals, especially the poorest, energy price relief on electricity and heating is an important form of social support. However, support that is targeted at poor households is relatively limited. Recent analysis for 11 European countries (including France, Germany, Italy and the UK) found that half (14 out of 28) of the fiscal support instruments to households were not targeted by the government at specific segments of the population (Gençsü et. al., 2017). The only governments that did not provide fiscal support to fossil fuel use in households (in 2015 and 2016) were France and Germany.

Box 2 G7 support to fossil fuel-based power in the name of the energy transition

G7 governments have provided $5 billion and $7 billion through fiscal support and public finance to fossil fuel-based power respectively (on average per year in 2015 and 2016).

In addition to this support, 'capacity mechanisms' have been introduced to offer payments to electricity market operators for their capacity to produce electricity or to reduce or shift electricity demand. In the US a similar proposed initiative claimed to enhance 'grid resilience'. This support is often provided in the name of supporting the transition to low-carbon energy systems. However, in several countries it has resulted in large payments to fossil fuel-fired generation, including coal plants that would otherwise be uneconomic. For example, the UK's annual capacity market auction has received criticism for discriminating against low-carbon options, overestimating future supply needs, favouring fossil fuels and delaying coal -plant decommissioning.

We found that capacity mechanisms supporting fossil fuel-based power are in place at the national or subnational level in all G7 countries except France and Japan.

For more information see: van der Burg and Whitley, 2016; and Farmer and Moore, 2018.

Recommendations

To meet their 2025 deadline to end fossil fuel subsidies the G7 should put in place mechanisms for defining and documenting the full extent of their support to the production and consumption of oil, gas and coal (at home and abroad), and establish systems for holding themselves to account (and for supporting each other) towards achieving these pledges.

To that end we recommend that the G7 develop a roadmap towards ending fossil fuel subsidies by 2025 including these key recommended next-steps:

Recommendation 1

All G7 countries should complete comprehensive peer reviews of their fossil fuel subsidies by no later than 2019 – showing leadership within the wider G20 peer review process.

Recommendation 2

The G7 should establish country-level plans for fossil fuel subsidy phase-out, starting with key subsidies with negative social and/or environmental impacts (including those that: create a significant burden on public budgets; unlock new reserves; lock-in high carbon infrastructure; and increase demand for oil, gas and coal).

Recommendation 3

In developing country-level plans, the G7 should look to leadership within the EU Member States who have already set an earlier deadline for ending fossil fuel subsidies (2020), with phase-out plans to be developed under their National Energy and Climate Plans.

Recommendation 4

G7 country-level phase-out plans should ensure that mechanisms with the stated aim of assisting the energy transition do not support fossil fuel production and consumption.

Recommendation 5

The G7 must ensure that any remaining subsidies support a 'just transition' for workers and communities, and target the most vulnerable groups during the energy transition.

Recommendation 6

The G7 should lead by example within other fossil fuel subsidy phase-out processes including through the G20 and APEC, and through the targets and indicators of the SDGs and the Nationally Determined Contributions (NDCs) under the UNFCCC.

Recommendation 7

Establish a standing agenda item in G7 Energy Ministerial meetings to share lessons learned on the fossil fuel subsidy phase-out and to track progress towards the 2025 deadline, with support from the OECD, IEA, and IMF.

Taking these recommended steps will also support the G7's wider objective under Canada's 2018 Presidency of 'working together on climate change, oceans and clean energy'. Ending fossil fuel subsidies will increase the competitiveness of key industries including low-carbon businesses, and support wider carbon pricing initiatives, reduce air pollution and avoid risk of stranded fossil fuel assets (ODI, 2017). Ending fossil fuel subsidies will also create fiscal space within government budgets that can be used support wider public goods such as health, education, and security.

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Annex 1 Overview of indicators and sub-indicators used in the G7 fossil fuel subsidy scorecard

INDICATORS						
1. Transparency	2. Pledges and commitments	3. Ending support for fossil fuel exploration	4. Ending support for coal mining	5. Ending support for oil and gas production	6. Ending support for fossil fuel-based power	7. Ending support for fossil fuel use
SUB-INDICATORS						
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 and G20 commitment) *(count)*	**3A** Scale of domestic public finance for oil and gas exploration (no coal identified) *(2015 and 2016 average per unit of GDP, $)*	**4A** Scale of fiscal support for coal mining *(2015 and 2016 average per unit of GDP, $)*	**5A** Scale of domestic public finance for oil and gas production *(2015 and 2016 average per unit of GDP, $)*	**6A** Scale of international public finance for coal-fired power (no domestic identified) *(2015 and 2016 average per unit of GDP, $)*	**7A** Scale of fiscal support for fossil fuels use in industry *(2015 and 2016 average per unit of GDP, $)*
1B Comprehensive and specific government reporting of fiscal support for fossil fuels (regular or irregular) *(Y/N/Partial)*	**2B** Number of pledges to end public finance for fossil fuels *(count)*	**3B** Scale of international public finance for oil, gas and coal exploration *(2015 and 2016 average per unit of GDP, $)*	**4B** Scale of international public finance for coal mining (no domestic identified) *(2015 and 2016 average per unit of GDP, $)*	**5B** Scale of international public finance for oil and gas production *(2015 and 2016 average per unit of GDP, $)*	**6B** Scale of domestic and international public finance for gas-fired power *(2015 and 2016 average per unit of GDP, $)*	**7B** Scale of fiscal support for fossil fuel use in transport *(2015 and 2016 average per unit of GDP, $)*
1C Taking part or committing to take part in peer reviews *(Y/N)*	**2C** Evidence of backtracking on existing pledges *(Y/N)*	**3C** Scale of fiscal support for exploration (coal, oil and gas) (*2015 and 2016 average per unit of GDP, $)*	**4C** New fiscal support for coal mining provided since the end of 2016 *(Y/N)*	**5C** Scale of fiscal support for oil and gas production *(2015 and 2016 average per unit of GDP, $)*	**6C** Scale of fiscal support for fossil fuel power *(2015 and 2016 average per unit of GDP, $)*	**7C** Scale of fiscal support for fossil fuel use by households *(2015 and 2016 average per unit of GDP, $)*
1D At least half of public finance institutions provide transaction-level data that appears to be comprehensive and specific *(Y/N/Partial)*		**3D** New fiscal support for fossil fuel exploration provided since the end of 2016 *(Y/N)*	**4D** New public finance for coal mining provided since the end of 2016 *(Y/N)*	**5D** New fiscal support for oil and gas production provided since the end of 2016 *(Y/N)*	**6D** New fiscal support for fossil fuel-based power provided since the end of 2016 *(Y/N)*	**7D** Scale of other fiscal support for fossil fuel use (agriculture etc.) *(2015 and 2016 average per unit of GDP, $)*
1E Percentage of measures in OECD analysis of fossil fuel support that have been quantified *(%)*		**3E** New public finance for exploration provided since the end of 2016 *(Y/N)*	**4E** Evidence of removal of subsidies to coal mining provided since the end of 2016 *(Y/N)*	**5E** New public finance for oil and gas production provided since the end of 2016 *(Y/N)*	**6E** New public finance for fossil fuel-based power provided since the end of 2016 *(Y/N)*	**7E** New fiscal support for fossil fuel consumption provided since the end of 2016 *(Y/N)*
		3F Evidence of removal of fiscal support for exploration (since the end of 2016) *(Y/N/Partial)*		**5F** Evidence of removal of fiscal support for oil and gas production since the end of 2016) *(Y/N/Partial)*	**6F** Evidence of removal of fiscal support for fossil fuel-based power since the end of 2016) *(Y/N)*	**7F** Evidence of removal of fiscal support for fossil fuel consumption since the end of 2016) *(Y/N)*
					6G Capacity mechanism to fossil fuel-based power *(Y/N/Partial)*	

Note: Light grey cells indicate qualitative information, white cells indicate quantitative information. Included in brackets is the type of scoring used for each sub-indicator.

Annex 2 G7 fiscal support and public finance to oil, gas and coal (2015 and 2016)

	France	Germany	Canada	UK	Italy	Japan	US	
Fiscal support* (US$ bn)								
Fossil fuel exploration	0.00	0.00	0.02	0.04	0.00	1.24	0.10	**1.39**
Coal mining	0.00	0.12	0.00	0.00	0.00	0.10	3.49	**3.71**
Oil and gas production	0.32	0.37	1.07	0.62	0.08	2.00	14.73	**19.19**
Fossil fuel-based power	0.01	0.00	0.01	0.18	2.10	0.10	2.32	**4.72**
Fossil fuel use	7.57	14.68	1.09	9.33	13.46	0.14	5.33	**51.60**
Total**	**7.90**	**15.18**	**2.19**	**10.16**	**15.63**	**3.58**	**25.97**	**80.62**

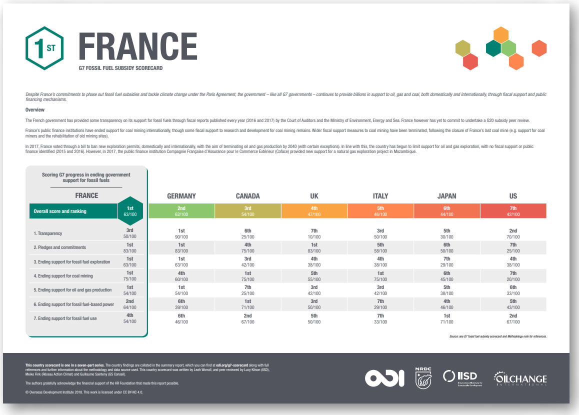
	France	Germany	Canada	UK	Italy	Japan	US	
Public finance (US$ bn)								
Fossil fuel exploration (dom. and int.)	0.00	0.44	0.59	0.37	0.26	2.51	0.95	**5.13**
Coal mining (int.)	0.00	0.01	0.00	0.02	0.00	0.01	0.00	**0.04**
Oil and gas production (dom. and int.)	0.10	0.52	1.76	0.28	1.20	2.84	0.22	**6.93**
Fossil fuel-based power (dom. and int.)	0.02	2.44	0.18	0.16	0.80	3.55	0.28	**7.44**
Total	**0.12**	**3.41**	**2.54**	**0.84**	**2.26**	**8.92**	**1.45**	**19.54**

**All domestic. ** This includes fiscal support for transport ($26 billion), households ($12 billion), industry ($9 billion), and to agriculture and other sectors ($5 billion).*
Source: author's own

Annex 3 Recipient countries of G7 public finance for fossil fuels (2015 and 2016)

	Fossil fuel exploration	Coal mining	Oil and gas production	Fossil fuel-based power
France	n/a	n/a	• Argentina • France • Sub-Saharan Africa • Tunisia	• Nigeria
Germany	• Azerbaijan • Brazil • Norway • United States • Viet Nam	• Egypt • Russian Federation • Ukraine	• Germany • Indonesia • Kenya • Malaysia • Mexico • Netherlands • Norway • Russian Federation • Singapore • South Korea • Western Europe (Germany, Switzerland, France)	• Bangladesh • Egypt • Germany • Malta • Mexico • Nigeria • Oman • Saudi Arabia • Turkey
Canada	• Australia • Canada • Colombia • Global • India • Indonesia • Mexico • Norway • Papua New Guinea • Peru • Suriname • United States	n/a	• Barbados • Canada • Colombia • Cuba • Egypt • Global • India • Indonesia • Mexico • Nigeria • Oman • Papua New Guinea • Peru • Saudi Arabia • United Arab Emirates • United States	• Egypt • Indonesia • Oman • Saudi Arabia
UK	• Brazil • United Arab Emirates	• Russian Federation	• Brazil • China • India • Jordan • Saudi Arabia • Singapore • United Arab Emirates • Viet Nam	• Bangladesh • Ghana • India • Nigeria • Sierra Leone • Turkey • Ukraine • United Arab Emirates
Italy	• Angola • Azerbaijan • Brazil	n/a	• Belarus • Brazil • Egypt • Italy • Russian Federation	• Dominican Republic • Egypt • Global • Indonesia
Japan	• Australia • Brazil • Canada • Indonesia • Russian Federation • United Arab Emirates • United States • Viet Nam	• Indonesia	• Bahamas • Brazil • Indonesia • Kuwait • Russian Federation • Singapore • Trinidad and Tobago • United Arab Emirates	• Bangladesh • Indonesia • Japan • Qatar • Sri Lanka • United States • Uzbekistan • Viet Nam
US	• Egypt • Mexico • Multiple countries • United States	n/a	• Brazil • Colombia • Egypt • Multiple countries • United Arab Emirates • United States	• Ghana • Nigeria • Senegal • Spain

Annex 4 Links to country scorecards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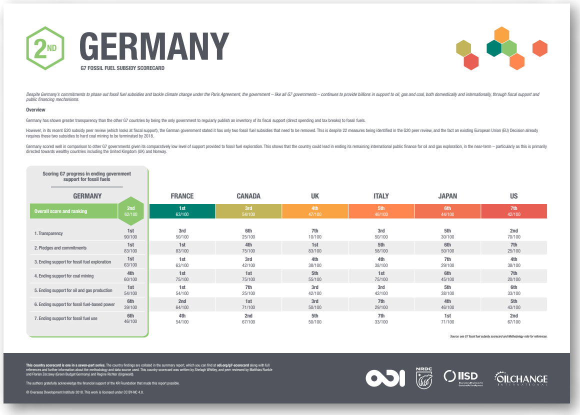
G7 FOSSIL FUEL SUBSIDY SCORECARD


2nd GERMANY
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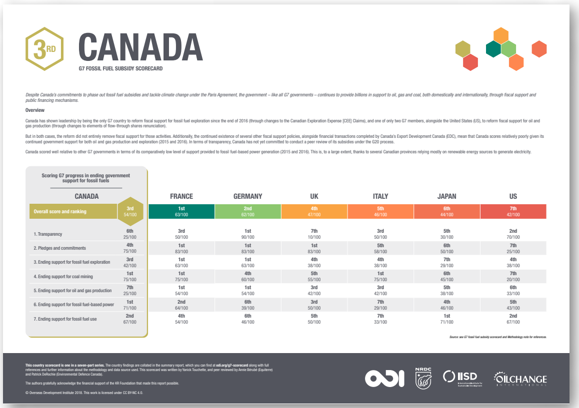
3rd CANADA
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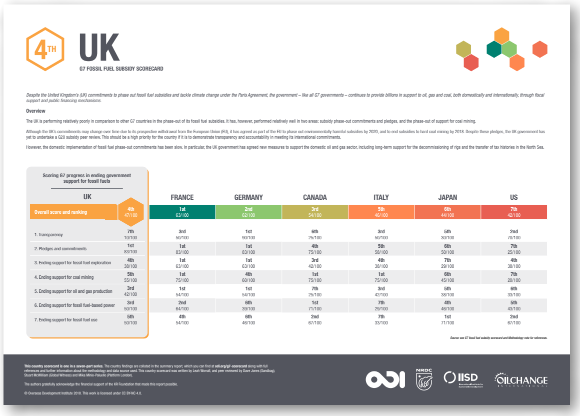
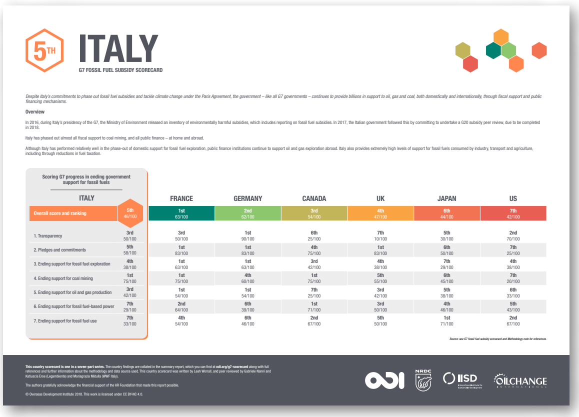

4th UK
G7 FOSSIL FUEL SUBSIDY SCORECARD


5th ITALY
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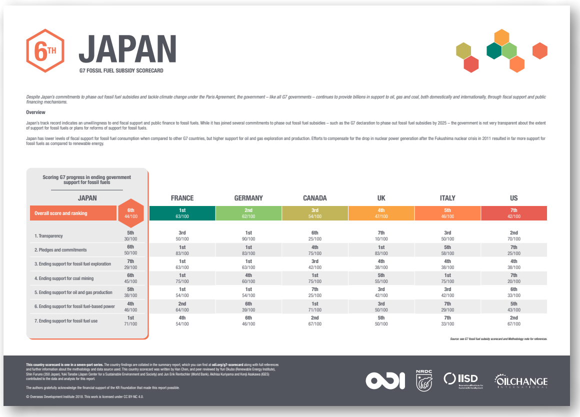
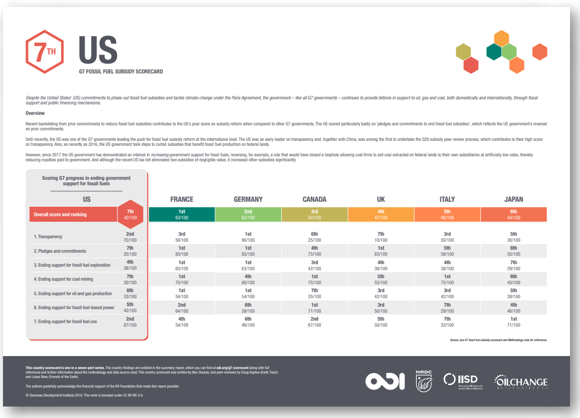

6th JAPAN
G7 FOSSIL FUEL SUBSIDY SCORECARD


7th US
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