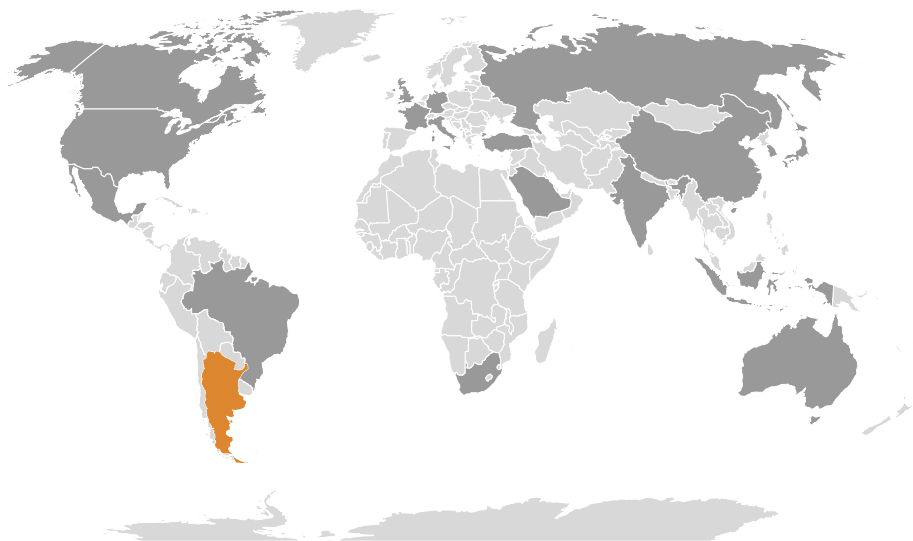




G20 subsidies to oil, gas and coal production: Argentina

Sam Pickard



► Argentina

Australia
Brazil
Canada
China
France
Germany
India
Indonesia
Italy
Japan
Korea (Republic of)
Mexico
Russia
Saudi Arabia
South Africa
Turkey
United Kingdom
United States

This country study is a background paper for the report **Empty promises: G20 subsidies to oil, gas and coal production** by Oil Change International (OCI) and the Overseas Development Institute (ODI). It builds on research completed for an earlier report **The fossil fuel bailout: G20 subsidies to oil, gas and coal exploration**, published in 2014.

For the purposes of this country study, production subsidies for fossil fuels include: national subsidies, investment by state-owned enterprises, and public finance. **A brief outline of the methodology can be found in this country summary.** The full report provides a more detailed discussion of the methodology used for the country studies and sets out the technical and transparency issues linked to the identification of G20 subsidies to oil, gas and coal production.

The authors welcome feedback on both this country study and the full report to improve the accuracy and transparency of information on G20 government support to fossil fuel production.

A Data Sheet with data sources and further information for Argentina's production subsidies is available at:
<http://www.odi.org/publications/9698-g20-subsidies-oil-gas-coal-production-argentina>

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Country Study
November 2015

Background

Argentina holds proven reserves totalling an estimated 2.3 billion barrels of oil (0.1% of the global total) and 300 billion cubic metres (bcm) of gas (0.2%) (BP, 2015). The country is a net importer of coal, with very limited domestic production (90,000 tonnes in 2013) (EIA, 2013). Although Argentina is one of the largest producers of natural gas and crude oil in Latin America, the country has experienced declining production, while the consumption of primary energy grew by a third between 2004 and 2014 (BP, 2015). This imbalance led to Argentina becoming a net importer of energy in 2011 – the first time since 1984 (Borderes and Parravicini, 2014; Fin24, 2013). In 2014, crude oil was imported for the first time, and natural gas was imported by pipeline from Bolivia and by sea as liquefied natural gas (LNG), the majority of which came from Trinidad and Tobago (Fernández Blanco, 2015) (BP, 2015). Relatively high global energy prices in 2013 meant that the cost of importing fossil fuels amounted to \$13 billion, equal to about 20% of the Central Bank's foreign exchange reserves (Fin24, 2013; The Economist, 2013b).

These import costs have led to the government objectives of regaining energy independence and developing fossil fuel resources for export. This is in no small part driven by the relatively recent appraisal of the Vaca Muerta formation. Spanning four provinces, this large shale formation has prompted recent reports to list Argentina's overall shale gas and oil deposits as the second and fourth largest in the world, respectively (Stafford, 2014; Fossett, 2013).

Exploring and developing these reserves will be costly. It is estimated that the development of Vaca Muerta alone will require anything from \$70 billion to \$90 billion and that developing all of Argentina's shale formations could cost \$200 billion over the next few decades (The Economist, 2013a; Bronstein and Raszewski, 2015). In 2012, to accelerate the development process, legislation was passed to specifically use public capital to drive exploration and production of oil and gas.¹ One example of this was the expropriation of 51% of the former state-owned Yacimientos Petrolíferos Fiscales (YPF) shares from then-owners Repsol. In the same year a commission was established to oversee the national plan for hydrocarbon investment. This led to the creation of a number of programmes to increase short-term production of oil, gas and refined products as well as attracting investment to explore and extract from undeveloped (particularly unconventional) reserves and invest in new refinery capacity.² With insufficient funds or finance to develop the reserves available domestically, the government has developed regulations, financial incentives and deployed

public investment through state-owned enterprises (SOEs), to attract international investment to the sector (Borderes and Parravicini, 2014).

These efforts appear to have aided the oil industry. Mainly driven by YPF, the number of drilling rigs in the country doubled between 2012 and 2014, while falling oil prices caused the global number to fall by 35% (Gonzalez, 2015a).

In addition to significant support for fossil fuel producers, subsidies to consumption also indirectly influences the production of fossil fuels. For many years the government has fixed below market rates the price of crude oil, natural gas and electricity paid by intermediaries and consumers (Di Bella et al., 2015; Navajas, 2015). In 2013, because of the high burden on the government budget and continued under-recovery of generation and transmission costs, the government committed to phase-out consumption subsidies for electricity and gas (IEA, 2014). However, subsidies continued and in the first two months of 2015 alone, the government transferred \$1.3 billion to cover these costs to the state-owned Wholesale Electricity Market Administration Company (CAMMESA) and \$528 million to cover the costs of the 53% state-owned Argentina Energy Company (ENARSA) (La Gaceta, 2015).

National subsidies

Tax expenditure

Recent legislation has introduced a number of tax breaks for companies looking to invest in oil and gas production in Argentina. In 2013, laws were amended so that oil and gas companies willing to invest more than \$1 billion in the country would be allowed to sell 20% of their production abroad after five years without paying export taxes or being required to repatriate profits (The Economist, 2013a; Stafford, 2014). This announcement was immediately followed by a statement from the major US oil company Chevron that it would enter into a \$1.2 billion joint venture with YPF in the Vaca Muerta region (Young, 2013; The Economist, 2013a; Romero and Krauss, 2013). The New Hydrocarbon Law, passed in late 2014, enhanced these benefits further (Lanardonne et al., 2015; Waszkiewicz and Spalding, 2015).

Under the New Hydrocarbon Law:

- companies only need to invest \$250 million across a three-year period to be able to sell 60% of offshore production and 20% of onshore production overseas without paying export taxes;

1 For details on the legislation, see: *Ley 26741* (<http://www.infoleg.gob.ar/infolegInternet/anexos/195000-199999/196894/norma.htm>)

2 The *Comisión de Planificación y Coordinación Estratégica del Plan Nacional de Inversiones Hidrocarburíferas* created the *Programa de Estímulo a la Producción de Petróleo Crudo*.

- the previous patchwork of regional agreements was harmonised into a default agreement that limits royalties to 12% and extends the default length of contracts to explore for or produce hydrocarbons;
- in the 10-year period following a ‘pilot project’, royalties may be further reduced by half for offshore production, tertiary recovery and recovery of heavy crude oil, and by 25% for unconventional production;
- extensions and renewals of production agreements are now also subject to maximum increases in royalties of 3% (up to a limit of 18%).

In parallel, there are a number of tax incentives to promote exploration including: accelerated amortisation of new assets for income tax purposes (gradual write-off); exemption from personal asset tax and import duties for assets used in exploration activities; and fixed levels of taxation for the duration of the operating contract irrespective of wider tax changes (Bordes and Parravicini, 2014; Bonvecchi, 2010; Ernst and Young, 2015). No estimates of the cost to government of any of these tax incentives could be identified.

Direct spending

A number of large budgetary transfers arise from the premium payments accruing from the *Petróleo Plus*, *Refinación Plus* and *Gas Plus* programmes which the government pays to producers of crude oil, refined oil products and natural gas, respectively. Here the domestic prices paid to fossil fuel producers are fixed with the aim of attracting investment in fossil fuel exploration, production and refining activities. For example, the oil price was set at \$72 per barrel in 2013 and increased to \$77 per barrel in early 2015 even though global oil prices had fallen below these levels (Gonzalez, 2015a). Similarly, gas now receives a premium price of \$7.50 per million British thermal units (BTU), which is the top end of the price range reportedly required to develop shale resources (Gonzalez, 2015a; Newbury, 2014). The annual accounts of the ministry responsible do not detail the value of these subsidies (Ministerio de Economía y Finanzas Públicas, 2013b, 2014b; Di Paola, 2014). However, the government did not make any payments under *Petróleo Plus* in 2013 and 2014, instead delaying these to 2015 (paid via bonds and valued at \$784 million), which is outside the timeframe of this study (Gonzalez, 2015b).

The Ministry of the Economy and Public Finances also operates a programme that is tasked with increasing

the amount of gas produced in Argentina and increasing investment in exploration and production.³ As well as projects to expand the natural gas network, the programme spent an annual average of \$1.2 billion in payments to domestic gas producers (Ministerio de Economía y Finanzas Públicas 2013a; 2014a). Recent legislative updates have introduced further subsidies to companies looking to produce oil, particularly from Argentina’s shale formations.⁴ For a number of basins the government provides a backstop to low oil prices. Depending on the domestic price, a company receives extra payments of up to \$3 dollars per barrel for producing oil, a further \$2 per barrel for exporting it, and an extra \$1 per barrel if they produce more than agreed in their production schedule. The fall in oil price which started at the end of 2014 is too recent for these subsidies to be included in our analysis which is focussed on 2013 and 2014.

Other budget transfers from government ministries include an annual average of \$341 million for constructing gas pipelines, an average of \$475 million in payments to the state-owned coal mine Yacimientos Carboníferos Río Turbio (YCRT), and an average of \$159 million per year for the construction of the coal-fired power plant at Río Turbio (Ministerio de Economía y Finanzas Públicas 2013b, 2014b).

A number of other programmes that provide support to the rehabilitation of mines, the production of fossil-fuelled electricity and the transmission and distribution of electricity and natural gas are also in place (ibid.).⁵ Between 2003 and 2014, the Argentinian government invested significantly in fossil fuel power plants, both in joint ventures with private companies (1.6 gigawatts (GW) added to the electricity grid) and solely using public funds through a number of national and regional agencies (2.6 GW added) (De Dicco, 2014). Further public investments in 801 MW of fossil-fuelled plant is planned by 2019; however, no data was available to ascertain whether these investments are the same as those noted above, nor what the total cost of the programme across 2013 and 2014 (De Dicco, 2014). An annual average of \$3.2 million was also listed as a long-term investment in two power stations (Ministerio de Economía y Finanzas Públicas 2013c; 2014c).

Other support mechanisms

We did not identify any further support mechanisms for fossil fuel production in Argentina.

3 Programa de Estímulo a la Inyección de Excedente de Gas.

4 Programa de Estímulo a la Producción de Petróleo Crudo. See for example, Resolución 33/2015 (www.infoleg.gov.ar/infolegInternet/anexos/240000-244999/244903/norma.htm)

5 See for example, Programa: Regulación del Transporte y Distribución de Gas; Programa: Formulación y Ejecución de la Política de Energía Eléctrica; Programa: Formulación y Ejecución de la Política Geológico-Minera.

Table 1: Argentina's national subsidies for fossil fuel production, 2013–2014 (\$ million except where stated otherwise)

Subsidy	Subsidy type	Targeted energy source	Stage	2013 estimate	2014 estimate	Estimated annual average amount
Programme to stimulate the injection of extra gas	Price support	Gas	Production	1,093	1,335	1,214
Payments to YCRT coal mine	Direct spending	Coal	Production	439	511	475
Construction of gas pipelines	Direct spending	Gas	Distribution	352	330	341
Construction of coal-fired power plant at YCRT	Direct spending	Coal	Generation	191	127	159
Long-term investments in fossil fuel power plant	Direct spending	Electricity	Generation	3	3	3
Other national subsidies (see Data Sheets)				-	-	-
Total						
Total national subsidies (\$ m)						2,192
Total national subsidies (ARS\$ m)						15,511

Sources and additional data are available in the Data Sheets that accompany each Country Study.

State-owned enterprise investment

YPF is currently the largest oil and gas producer in Argentina, and, following its renationalisation (it is now 51% state-owned), the company has re-launched its exploration activities across known areas of medium-to-low risk, including the offshore continental shelf and the country's shale oil basins (YPF, 2014). A recent company report states that it is also planning to develop an international exploration portfolio, although the specific countries are not detailed (YPF, 2014). Across 2013 and 2014, YPF was responsible for 42% of the oil and gas produced in Argentina – averaging 194 barrels of oil equivalent of the two fuels combined. According to details logged with the Ministry of Energy, YPF combined investment in the three categories of exploration, complementary services and extraction totalled \$1.9 billion in 2013 and \$3.5 billion in 2014 (Secretaría de Energía, 2015).

In addition to this, we also include the transfer of \$5 billion of government bonds to the private Spanish company Repsol S.A. in compensation for the 2012 expropriation of control of YPF as investment by an SOE (Gonzalez and Cancel, 2014).

In 2013 YPF reported plans to spend \$15 billion over the coming decade developing shale resources in the Vaca Muerta, drilling 200 unconventional wells per year (Fin24, 2013). To achieve such investment, YPF has taken advantage of the recent legal changes detailed above to negotiate a number of joint ventures with major international oil companies. The most recent of these ventures was formed in September 2015 when YPF signed an agreement with the Russian SOE Gazprom to produce oil and gas from shale deposits, adding to other joint ventures with Chevron (US), Dow Chemicals (US), the Malaysian SOE Petronas and the Chinese SOE Sinopec (Buenos Aires Herald, 2015; YPF 2015). Through

these joint ventures and support from the newly formed Argentinian Hydrocarbons Fund, YPF has been able to raise \$2 billion on capital markets (Mander, 2015).

YPF is also heavily involved in the midstream and downstream oil and gas sectors, with three of its own refineries and a 50% stake in another, meaning that it holds approximately half of the nation's refining capacity (YPF, 2014; Daugherty, 2014). Combined investment by YPF in all of its fossil fuel production activities averaged \$5.7 billion in 2013 and 2014 (Arelovich et al., 2015).

Argentina's other state-owned (53%) oil and gas company, Energía Argentina S.A. (ENARSA), has a remit to be involved across the oil and gas production chain; however, the majority of its operations are focused on overseeing the transport and distribution networks for gas and electricity (Despouy, 2013). ENARSA, a minor fossil fuel producer in the country had the right to extract offshore oil and gas resources until that right was transferred back to the state in the last hydrocarbon law reform. The company is also engaged in exploration activities in Venezuela with the state-owned enterprise PDVAS (ENARSA, n.d.). Although not specifically quantified, the company receives 'billions of dollars' in national subsidies, though these appear to be linked to fossil fuel imports and consumption as opposed to exploration or extraction (Marty, 2014). ENARSA also operates approximately 2 GW of fossil fuel electricity plant (Secretaría de Energía, n.d.). It was not possible to identify the portion of ENARSA's \$408 million of average annual capital expenditure that specifically benefited fossil fuel production (Ministerio de Economía y Finanzas Públicas 2013d, 2014d). A number of subnational SOEs also operate fossil fuelled power stations, but analysis of these is outside of the scope of this report (Secretaría de Energía, n.d.).

Yacimientos Carboníferos Río Turbio (YCRT) is Argentina's state-owned coal-mining company. It operates

Table 2: Argentina's state-owned enterprise (SOE) investment, 2013–2014 (\$ million except where stated otherwise)

SOE	Project/investment	Description	Sector	2013	2014	Average annual value
YPF	Government bond	Compensation for expropriation of YPF	Oil and gas	N/A	5,000	2,500
YPF	Investment	All fossil fuel production activities	Oil and gas	5,021	6,451	5,736
YCRT	Rio Turbio Coal Mine	Capital expenditure (not included as cannot be distinguished from national subsidies)	Coal	107	134	–*
ENARSA	Oil and gas exploration, production and distribution		Oil and gas	N/A	N/A	N/A
Totals						
Total SOE investment (\$ m)						8,236
Total SOE investment (ARS\$ m)						58,278

Sources and additional data are available in the Data Sheets that accompany each Country Study.

Notes: * as we could not distinguish from the national subsidies, we did not include this figure. N/A indicates data was not publicly available at the time of publication. When data is not available for both 2013 or 2014, the two-year average is based on the data for one year only.

the country's only significant coal field in the province of Santa Cruz (on the border with Chile), which has total reserves of 632 million tonnes. The nearby Río Turbio thermal power plant was built solely to justify the continued production from the mine. However, in 2013 there was not enough coal available to run the plant, and the government was discussing importing coal from South Africa or Colombia to keep it operational (Arias and Cabot, 2013). Although no formal decision has been made, work now appears to be ongoing to transform part of the plant to run on natural gas, which, along with supplementary coal, will be imported from Chile (Cabot and Blanco, 2015; Rossi, 2015; OPI Santa Cruz, 2015). In 2013 and 2014, YCRT's capital expenditure averaged \$120 million annually (Ministerio de Economía y Finanzas Públicas 2013d, 2014d). It is unclear whether this is in addition to the transfers made to the mine and its associated power plant, detailed in the national subsidies section, so this SOE investment is not included in the totals.

Public finance

Domestic

Soon after renationalising YPF, a \$2 billion Argentinian Hydrocarbons Fund was established in 2013 by the Ministry of Economy and Public Finance to provide support to fossil fuel companies in which the government has some level of ownership (Ministerio de Economía y Finanzas Públicas, 2013e).⁶ This fund is to support activities across exploration, production, processing and marketing of fossil fuels (upstream and downstream). It

appears that the 'fund' operates as a lender with a \$1 billion line of credit extended to YPF in 2014 (Ministerio de Economía y Finanzas Públicas, 2014a).

The government also provided finance averaging \$1.1 billion per year for the construction of gas trunk transmission lines and two fossil-fuelled power plants (Ministerio de Economía y Finanzas Públicas 2013b; 2014b).⁷

Government balance sheets also detail long-term loans to fossil fuel power station operators and transport networks, though it does not appear that any financing arrangements were in place across the years in focus (Ministerio de Economía y Finanzas Públicas 2013d, 2014d).

State-owned banks, the largest being Banco de la Nación Argentina (BNA), and Banco Provincia dominate the country's banking sector. Although these institutions do not disclose details of their portfolios, a subsidiary of BNA is the trustee of the \$2 billion Argentinian Hydrocarbons Fund discussed above and on average 4.8% of total loans (valued at \$682 million on average) held in the country (assumedly including those held by private banks) were for the production of coke, petroleum and nuclear fuel products (Ministerio de Industria, 2015). Again, a lack of disaggregation prevents the inclusion of this in the totals.

⁶ Fondo Argentino de Hidrocarburos.

⁷ Gas pipes constructed by CAMMESA and two power stations: la Central Termoeléctrica Vuelta de Obligado and la Central Termoeléctrica Guillermo Brown.

International

The country's 100% state-owned Banco de Inversión y Comercio Exterior (BICE) makes medium- and long-term investment and provides export finance to domestic companies (BICE, 2014a, 2014b; BNAmericas, 2014). The only data found reported that in 2013 and 2014, \$8.3 million and \$9.9 million, respectively, went to 'Gas/Oil/ Plást' (plastics) (BICE, 2014c), which is not included in the totals.

Beyond BICE's activities, no additional international financing for oil, gas or coal was identified for Argentina in 2013 and 2014. Argentina did contribute an annual average of \$33 million to fossil fuel production in 2013 and 2014 through its shares in the African Development Bank, the Inter-American Development Bank, and the World Bank Group.

Private companies

Private upstream oil and gas companies

The majority state-owned YPF was responsible for approximately 42% of Argentina's oil and gas production in 2013 and 2014 with other operators (including privately owned and foreign SOEs) contributing the balance of production. Recent developments have seen a number of private companies committing to substantial investments, largely in partnership with YPF in developing Argentina's unconventional oil and gas reserves.

Because most these joint ventures are not yet producing oil or gas, many are not included in Table 4. Nonetheless, these commitments are significant, identifying likely future big players in the industry, and include: \$3 billion by Chevron (US); \$500 million by Shell (Netherlands);

\$500 million by Bidas (a 50-50 joint venture between the Chinese SOE, China National Offshore Oil Corporation (CNOOC) and Bidas Energy Holdings); \$500 million by the Malaysian SOE Petrolia Nasional Bhd. (Petronas); \$1.2 billion by Total (France), Wintershall (Germany) and Pan American Energy LLC (joint venture between BP and Bidas); \$120 million by Dow Chemicals (US); and the recent signing of a Memorandum of Cooperation between YPF and the Russian SOE Gazprom (Mander, 2015; Scott, 2014; Kelly, 2014; Gonzalez, 2013; Total, 2014; Gonzalez and Mazneva, 2015).

Private midstream/downstream oil and gas companies

In 2014, Argentina's refining capacity represented approximately 10% of capacity in Central and South America (BP, 2015). YPF holds the largest share of the eight refineries in the country. However, a number of foreign companies, including Shell (Netherlands), Axion (subsidiary of Bidas), the Brazilian SOE Petrobras, and the domestic refiner OIL control significant refining capacity as well (Pompozzi, 2013).

Private coal companies

No private coal companies were identified in Argentina.

Private electricity companies (fossil fuel-based)

Although the majority of electricity generation capacity in Argentina is privately owned and fossil fuel based, the sector is highly fragmented involving 65 private companies, with only three (Endesa Costanera SA, CT PuertoSA, and Pampa Energía) having installed capacities of 1 GW or more (Secretaría de Energía, n.d.).

Table 3: Argentina's public finance for fossil fuel production, 2013–2014 (\$ million except where stated otherwise)

Institution name	Upstream coal	Downstream coal	Upstream oil & gas	Downstream oil & gas	Multiple or unspecified fossil fuels	Total fossil fuel finance 2013 & 2014	Annual avg. fossil fuel finance
Domestic							
Ministry of Economy and Finances	-	-	-	-	2,000	2,000	1,000
Ministry of Federal Planning, Public Investment and Services	-	-	-	-	2,269	2,269	1,135
Subtotal domestic	-	-	-	-	4,269	4,269	2,135
International							
Multilateral development bank shares	-	6	22	38	0	67	33
Subtotal international	-	6	22	38	0	67	33
Totals							
Total public finance (\$ m)							2,168
Total public finance (ARS\$ m)							15,340

Sources and additional data are available in the Data Sheets that accompany each Country Study.

Table 4: Top private upstream oil and gas producers in Argentina, 2013–2014

Company	Headquarter country	Oil production (in country) (million bbl)		Gas production (in country) (billion cubic metres)		Sum of operating expenditure & capital expenditure, including exploration expenditure (in-country, \$ m)		Profitability (from country operations, as measured by free cash flow) (\$ m)	
		2013	2014	2013	2014	2013	2014	2013	2014
BP	United Kingdom	24	24	4.5	4.4	729	726	813	756
Total	France	3.4	3.0	4.2	4.0	388	443	195	87
Wintershall	Germany	3.5	3.0	4.2	4.0	404	446	176	86
Petrobras	Brazil (SOE)	13	12	2.3	2.3	930	537	34	309
Pluspetrol	Argentina	11	10	1.8	1.6	371	327	262	236
Sinopec Group (parent)	China (SOE)	14	12	0.8	0.7	348	328	319	242
CNOOC	China (SOE)	7.8	7.9	1.5	1.5	242	242	272	252
Bridas Energy	Argentina	7.8	7.9	1.5	1.5	242	242	272	252
Chevron	United States	10	8.7	0.1	0.2	403	1462	110	-920
Techint (Tecpetrol)	Argentina	4.6	4.3	0.9	0.8	223	156	116	139

Source: Rystad Energy, 2015.

Methodology

(for detailed methodology see Chapter 3 of main report)

This report compiles publicly available information on G20 subsidies to oil, gas and coal production across G20 countries in 2013 and 2014. It provides a baseline to track progress on the phase-out of such subsidies as part of a wider global energy transition. It uses the following terms and their definitions.

Production subsidies

Government support for fossil fuel production. For the purpose of this country study, production subsidies include national subsidies, investment by state-owned enterprises (SOEs) (domestic and international) and public finance (domestic and international) specifically for fossil fuel production.

Fossil fuel production

Production in the oil, gas and coal sectors. This includes access, exploration and appraisal, development, extraction, preparation, transport, plant construction and operation, distribution and decommissioning. Although subsidies for the consumption of fossil fuels can support their production, this report excludes such subsidies as well as subsidies for the consumption of fossil fuel-based electricity.

National subsidies

Direct spending, tax and duty exemptions and other mechanisms (such as forms of capacity markets) provided by national and sub-national governments to support fossil fuel production. Normally, the value assigned for a national subsidy is the number provided by the government's own sources, by the OECD, or by an independent research institution.

State-owned enterprise (SOE) investment

A SOE is a legal entity created by a government to undertake commercial activities on its behalf. SOEs can be wholly or partially owned by governments.

It is difficult to identify the specific component of SOE investment that constitutes a subsidy, given the limited publicly available information on government transfers to SOEs (and vice-versa), and on the distribution of investment within their vertically integrated structures. Therefore, this report provides data on total investment by SOEs in fossil fuel production (where this information is available from the company), which are presented separately from national subsidies.

For the purpose of this report, 100% of the support provided to fossil fuel production through domestic and international investment by an SOE is considered when a government holds >50% of the shares.

Public finance

Public finance includes the provision of grants, equity, loans, guarantees and insurance by majority government-owned financial institutions for domestic and international fossil fuel production. Public finance is provided through institutions such as national and multilateral development banks, export credit agencies and domestic banks that are majority state-owned.

The transparency of investment data for public finance institutions varies. Assessing the portion of total financing that constitutes a subsidy requires detailed information on the financing terms, the portion of finance that is based directly on public resources (rather than raised on capital markets) or that depends on the institutions' government-linked credit rating. Few of the institutions assessed allow public access to this information. Therefore, we report the total value of public finance from majority government-owned financial institutions for fossil fuel production separately from 'national subsidy' estimates.

For the purpose of this report, 100% of the support provided to fossil fuel production through domestic and international financing is considered when a government holds >50% of the shares in the bank or financial institution.

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