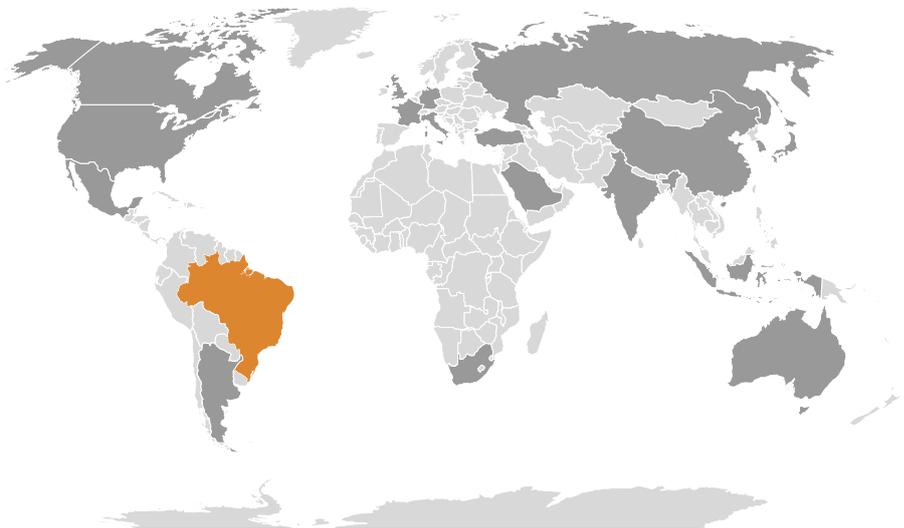




G20 subsidies to oil, gas and coal production: Brazil

Ravenna Nuaimy-Barker



- Argentina
- Australia
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- Canada
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- 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 Brazil's production subsidies is available at:
<http://www.odi.org/publications/10090-G20-subsidies-oil-gas-coal-production-Brazil>

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Country Study
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Background

Brazil is emerging as a major oil-producing country. Advances in deep-water drilling and, in particular, the discovery of the pre-salt oilfields (very large deposits trapped below 2km of salt under the seabed hundreds of kilometres off Brazil's southeast coast) have boosted Brazil's proven oil and gas reserves in recent years.

The oil and gas industry is dominated by the state-owned enterprise Petrobras, which is by far the largest firm working on domestic exploration and production, and which has development rights for the pre-salt oilfields. Corruption scandals have undermined the company's support from the public and investors while its debts have forced it to reduce investment and start to divest from lower priority (non-core) activities. Leading politicians have also been implicated in the revelations of systematic corruption at Petrobras contributing to national political turmoil, including massive public protests and threats of impeachment for President Dilma Rousseff, who, at the time of writing, had an approval rating of just 8%.

Hydroelectric power plants generate 75% of Brazil's electricity, with other sources of renewable energy accounting for an ever-increasing share of generation capacity, including biofuels, which provide less than 1% of generation capacity). However, a severe drought in 2015 (the worst in over 40 years) recently increased the country's reliance on fossil fuels (Lillis, 2014; Eletrobras, 2015a).

National subsidies

Tax expenditures

Although taxes on the fossil fuel industry are levied at national, regional and local level, the majority are collected through the Federal Government. Some of the wide variety of tax exemptions, suspensions, and reductions that benefit fossil fuel production are targeted at the industry directly. Other are focused regionally or more broadly on economic development, but fossil fuel producers can still take advantage of them.

Many of the tax benefits for fossil fuel production in Brazil involve the suspension of one or more of the following taxes:

- PIS - Programme of Social Integration (*Programa de Integração Social*)
- COFINS - Social Security Financing Contribution (*Contribuição para o Financiamento da Seguridade Social*)
- IPI - Excise Tax on Industrialised Products (*Imposto sobre Produtos Industrializados*)
- IPRJ – Corporate Income Tax (*Imposto de Renda sobre Pessoa Jurídica*)
- II – Import Duty (*Imposto de Importação*)

REPENEC (*Regime Especial de Incentivos para o Desenvolvimento de Infraestrutura da Indústria Petrolífera nas Regiões Norte, Nordeste e Centro-Oeste*) is a special regime of incentives for the development of infrastructure for the petroleum industry in the northern, north-eastern and central-west regions (Receita Federal, 2015a) exempts companies from a range of taxes in these specific regions. They do not have to pay the PIS and COFINS social contributions, or the IPI excise taxation for domestic sales and imported machinery and materials for infrastructure projects, such as drilling rigs, pipelines and access routes. The reported value of the REPENEC tax breaks for companies averaged \$299 million annually in 2013 and 2014 (Receita Federal, 2012: Quadro III, 2013: Quadro III).

REPETRO (*Regime Aduaneiro Especial de Importação e Exportação de Bens Destinados à Pesquisa e Lavra de Petróleo e Gás*) is a special customs regime for exporting and importing assets intended for research activities and extraction of petroleum and natural gas (Receita Federal, 2015b). Again, REPETRO exempts companies from PIS, COFINS and IPI excise taxation on goods imported for oil and gas research and extraction as well as customs duties and additional taxes usually levied on goods imported by sea to Brazil. No estimates for the cost of REPETRO could be found.

Brazil's thermoelectricity tax reduction provision exempts coal- and gas-fired power plants from the payment of PIS and COFINS taxes for their purchases of coal and natural gas (OECD, 2014; Receita Federal, 2013: Quadro XX). The benefit to companies is valued at \$45 million annually.

SUDAM (*Superintendência do Desenvolvimento da Amazônia: Superintendency of Development for the Amazon*) and SUDENE (*Superintendência de Desenvolvimento do Nordeste: Superintendency for the Development of the Northeast*), two regional development administrations, provide significant tax benefits as well as direct funding to support economic development in the Amazonia, and northeast regions of the country. In particular, companies undertaking approved projects are eligible for a reduction of up to 75% of their IPRJ and are eligible to reinvest up to 30% of the income tax they owe (EY, 2015; SUDAM, 2015a; SUDENE, 2015a). Fossil fuel development is a priority for these two regions (SUDAM, 2015b; SUDENE, 2015b).

Tax breaks for fossil fuel production have been implemented in the SUDENE region, but it is unclear whether similar tax breaks have been provided in the SUDAM region. The 2014 Annual Report for the SUDENE region reported annual tax expenditures of \$2.5 billion for the production and transport of gas and petroleum specifically, and \$3.2 billion for the energy sector, which was likely to have included fossil fuel production (SUDENE, 2015c). Earlier reports were less transparent, preventing the precise calculation of benefits to fossil fuel producers. However, it is clear that \$600

million of SUDENE's tax expenditure was allocated to oil and gas pipelines in 2013 (SUDENE, 2014a). Given the available data, we assume that the 2014 figure remains representative for the benefits to the production and transport of gas, although it is likely to be an underestimate.

REIDI (*Regime Especial de Incentivos para o Desenvolvimento da Infraestrutura*), the Special Incentive Regime for Infrastructure Development, suspends or exempts companies from paying PIS and COFINS on acquisitions and imports of goods and services linked to approved infrastructure projects in several sectors. Although the production and processing of natural gas and energy generation, transmission and distribution are included, a lack of disaggregation prevents any calculation of the portion of the \$625 million in support in 2014 that benefited fossil fuel production activities rather than other sectors (Ministério de Minas e Energia, 2015; Receita Federal, 2013: Quadro III). Therefore, no benefits for fossil fuel producers from this regime are added to the national subsidy totals.

RECAP (*Regime Especial de Aquisição de Bens de Capital para Empresas Exportadoras*) is the special regime for the acquisition of capital goods for export companies, which could include fossil fuel producers. The regime exempts equipment, instruments and machinery to be used as fixed assets for producing goods for export from PIS and COFINS (EY, 2013; Receita Federal, 2015c). Given the broad scope of this tax exemption, it is difficult to estimate the benefit to fossil fuel production and it is therefore not added to the national subsidy totals.

The special bonded (customs controlled) warehouses for oil and gas platforms grants full suspension of federal taxes otherwise due on imports (II, IPI, PIS, and COFINS). It also grants full suspension of federal taxes that would otherwise be payable on local purchases under IPI, PIS and COFINS for bonded areas located on oil and gas platforms that are contracted by foreign companies for research and drilling purposes (EY, 2015: 75). There was no available information on the scale of this benefit for companies.

Temporary admission is a special customs regime that could benefit fossil fuel producers. The regime grants total or partial suspension of federal and state import taxes (II, IPI, PIS, COFINS and ICMS) on the importation of equipment and general products if the imported items are re-exported within a stipulated period. (EY, 2015: 75). Again, there was no information available on how much companies benefit from this tax break.

Tax incentives for investments in research and development (R&D) may also benefit fossil fuel producers. Depending on the growth of the research team involved, 160-180% of R&D investment can be deducted from taxable income (Deloitte, 2013). Where companies engage in R&D to develop their exploration and extraction capabilities, this engagement may be interpreted as

foregone tax revenue that benefits the further production of fossil fuels. It is not possible to quantify this benefit, but, for context, Petrobras spent \$1.1 billion on R&D in 2012, including R&D on the 'discovery of new exploratory frontiers' and 'enhancement of oil and gas final recovery' (Petrobras, 2013a). Other tax reductions for R&D projects include a 50% reduction in the IPI excise tax for equipment, machinery and tools, and the possibility to deduct expenses (accelerated depreciation). IT companies engaged in R&D attract the 160% 'super' deduction (Deloitte, 2013; EY, 2013).

The Manaus Free Trade Zone provides several fossil fuel companies, which are mostly involved in processing and refinement, with exemptions from IPI, PIS and COFINS on imported goods, an 88% reduction in import tax on inputs and a 75% reduction on IPRJ (SUFRAMA, 2009; 2015). The lack of disaggregated data makes it impossible to calculate what percentage of the \$4.9 billion provided in the Zone as tax expenditures in 2014 were directed to fossil fuel producers (Receita Federal, 2013).

The variable royalty rate applied to fossil fuel extraction is another type of support for fossil fuel production. Brazilian regulations set a standard rate for monthly royalty payments to the government for oil-field extraction of 10% by volume, but allow for this rate to be reduced to as little as 5% if there are potential challenges to extraction in a particular field (EY, 2015; 65). No estimate for the value of this support was available.

Direct spending

The largest budgetary transfer supporting fossil fuel production in Brazil is the Fuel Consumption Fund (*Conta de Consumo de Combustíveis*, CCC). Across 2013 and 2014, this transfer, which provides specific support to electricity generators for their fuel purchases (OECD, 2014), was valued at an estimated annual average of \$1.7 billion (Eletrobras, 2013). The CCC is one of three sectoral funds that receive annual equalisation payments valued in total at \$4.9 billion (CGU, 2014). Two other funds – the Energy Development Fund (CDE) and Global Reversal Reserve (RGR) – also include support for non-fossil fuel energy sources, making it impossible to quantify their specific support to fossil fuel production alone, although it is known that the funds help to promote energy development and encourage the expansion of the natural-gas network (Eletrobras, 2015b). Recent reforms mean that, as of 2015, these subsidies have been effectively phased out, with their costs covered by consumers (Mercopress, 2015).

The Federal Government also provides smaller amounts of direct support for fossil fuel production at several points along the production chain including annual support for natural-gas and petroleum production of \$20 million (CGU, 2013, 2014). Electricity transmission and distribution companies also receive budgetary support

totalling \$496 million each year (CGU, 2014). However, it is not possible to ascertain what proportion of this, if any, supports fossil fuel production.

In addition to the tax breaks detailed above, both SUDAM and SUDENE have direct funding programmes to support development in their regions; the *Fundo de Desenvolvimento do Amazonia* (FDA) and the *Fundo Constitucional de Financiamento do Nordeste* (FCN), respectively. The FDA has invested in electricity generation in the past, and includes fossil fuel production among its priorities, but it is not clear whether it provided funds for fossil fuel production in 2013 and 2014 (SUDAM, 2015b; SUDAM, 2015c). The most recent data available highlight fossil fuel production as a priority for the FCN, which spent \$28 million in 2013 on projects related to the petrochemicals industry (SUDENE, 2015b; SUDENE, 2014b). However, it is not clear whether this spending supported fossil fuel production directly.

In October 2013, the Ministry of Mines and Energy (MME) released the maps of its latest study with the federal energy planning company EPE (*Empresa de Pesquisa Energética*) on zones of natural oil and gas resources in Brazil (*Estudo de Zoneamento Nacional de Recursos de Óleo e Gás*) (EPE, 2014). As well as supporting energy planning processes at federal and regional level, these maps are freely available to companies wishing to undertake

further exploration activities and represent a subsidy, given that they are goods and services that are provided at below market value. The production of these maps and on-going associated research activities are believed to form the bulk of the annual support for ‘geologic and geophysical services applied to prospecting for petroleum and natural gas’, valued at an average of \$56 million annually in 2013 and 2014 (CGU, 2013 and 2014).

Additional direct subsidies include the following:

- The National Agency for Petroleum, Natural Gas, and Biofuels (*Agência Nacional do Petróleo, Gás Natural e Biocombustíveis*, ANP) manages the multi-year \$100 million Human Resources Program (PRH-ANP) that has provided over 2,700 scholarships to students training to enter the oil and gas industries. The funding for this programme comes from CT-Petro, the *Ministério da Ciência, Tecnologia e Inovação* (MCTI), and from participating businesses (ANP, 2015).
- The CT-Petro programme for research and development (R&D) in enhanced hydrocarbon recovery received an average of \$12 million per year (ANP, n.d.; Ramos de Souza, 2011; CGU, 2013, 2014).
- The Decennial Plan for Expansion of Transport through Pipelines (PEMAT) is a 10-year plan (2013-2022) to expand Brazil’s network of gas pipelines (MME and EPE,

Table 1: Brazil'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 amount
SUDENE	Tax exemption	Oil and gas as well as other industries	Gaining access, exploration, field development, extraction, transportation, electricity generation	N/A	2,564	2,564
REPENEC	Tax exemption	Oil and gas as well as other industries	Field development, extraction, production, transportation	514	85	299
Thermo-electricity	Tax exemption	Natural gas, coal	Electricity generation	46	45	45.5
CCC Conda de Consumo de Combustíveis	Direct spending	Oil and gas	Electricity generation	2,149	1,741	1,945
Geologic and Geophysical services applied to prospecting petroleum and natural gas	Direct spending	Oil and natural gas	Exploration	57	56	55.5
Other national subsidies (see Data Sheet)						39
Totals						
Total national subsidies (\$ m)						4,949
Total national subsidies (BRL m)						11,630

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

Note: 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.

2014). Although valued at less than \$1 million during the current study phase, significant government investment in fossil fuel infrastructure may be needed if the project becomes operational in the years to come (CGU, 2013, 2014).

State-owned enterprise investment

Petrobras, in which the Government holds the controlling interest (just over 50%), is Brazil's largest oil and gas producer by far. Producing an average of 800 million barrels of oil annually in 2013 and 2014, it produces more than five times more oil and gas annually than the 34 private oil and gas companies operating in Brazil combined (Rystad Energy, 2015). The fully integrated company has activities along the entire oil and gas value chain.

The company has, however, been rocked by a recent and major national investigation into corruption (Operation Car Wash). The investigation revealed systemic corruption that centred around a cartel of Petrobras officials and suppliers that systematically overcharged the company and funnelled the illicit profits to political parties and officials, as well as private individuals (Petrobras, 2015: 24).

The company has also suffered significant losses as a result of reforms in 2015 that ended its mandate of setting price levels for consumer fuels (Petrobras, 2013a; Millard, 2014).

In 2013 the company embarked on plans to invest \$237 billion over five years on exploration and production (Millard and Orihuela, 2013; EY, 2012). In 2013, company-wide investment totalled \$47 billion, falling to \$36 billion in 2014. While there is little information on how much the company invested specifically in domestic exploration and development in 2013, it invested \$23 billion in 2014. Production has increased significantly as a result of the company's investments as four new platforms came online in 2014 adding 525,000 barrels of oil per day (bpd) to its capacity.

Investment by Petrobras in the 'refining, transportation and marketing' sector totalled \$7.5 billion in 2014. Most of the investment in this sector targeted the expansion of

refining capacity, with \$2.4 billion alone invested in the newly commissioned Abreu e Lima Refinery (Rnest). The company also allocated \$2.4 billion to gas and energy projects, including the construction of the two pipeline routes for pre-salt projects, and invested in fertilizer plants, power plants, and carbon capture and storage projects, together with other sectors of the natural gas value chain (Petrobras, 2015 and 2014a; Iglesias, 2015).

Petrobras has substantial international operations, investing \$2.3 billion internationally in 2013 and \$1.5 billion in 2014. Around 90% of this investment went to exploration and production, with the remainder targeting refining, petrochemicals, distribution, gas and energy (Petrobras 2014b, 2015). The startup of the St. Malo field in the United States was a major focus, although Petrobras was also engaged in fossil fuel production in Angola, Argentina, Benin, Bolivia, Chile, Colombia, Gabon, Japan, Namibia, Nigeria, Paraguay, Peru, Tanzania and Uruguay (Petrobras, 2015).

The firm's high level of indebtedness and its ambitious domestic investment plans resulted in the downgrading of its credit rating (Petrobras, 2013b). In response, Petrobras has reduced the pace of capital expenditures, and has started to sell-off of assets and divest from lower priority (non-core) activities as a part of a wider restructuring process. In 2015 and 2016 the company aims to divest \$14 billion of assets, divided across domestic and international exploration and production (30%); refining, transportation and marketing (30%); and gas and power (40%) (Petrobras, 2015). This restructuring aims to ensure that sufficient capital is available to continue priority exploration and development, particularly in the pre-salt fields (Petrobras, 2015; 6).

In addition, the firm issued an unusual \$2.5 billion investment-bond offering in June 2015 that will mature in 100 years. The bond offering attracted the intended investment, but its value fell 15% within three months of its issue – a sign that investors are still unsure of the company's future (Millard, 2015).

Eletrobras, which is majority-held by the Government (55%), is Brazil's largest electricity supplier, responsible

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

SOE	Project / investment	Description	Fossil fuel sector	Value 2013	Value 2014	Average annual value
Petrobras	Investment	Exploration, extraction, and related services	Oil and gas	47,000	36,000	41,500
Totals						
Total SOE investment (\$ m)						41,500
Total SOE investment (BRL m)						97,525

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

for 34% of electricity generation and owning half of the country's transmission lines (Eletrobras, 2014). It is a vertically integrated firm, with activities ranging from energy generation to trading, and only 6.5% of the 175 TWh produced by Eletrobras in 2014 was generated by fossil fuels (Eletrobras, 2014, 2015a).

In 2013 the company invested \$5 billion, which included in generation (\$2.9 billion), distribution (\$400 million), and research and development (\$224 million) (Eletrobras, 2014). In 2014 the company invested \$4.6 billion, shared between generation (\$2.6 billion), transmission (\$1.6 billion), distribution (\$297 million), and other areas (\$150 million) (Eletrobras, 2015a). Given the relatively small portion of electricity generated from fossil fuels and the lack of fully disaggregated data, it was not possible to estimate the size of the company's investment in fossil fuel production specifically.

In addition to Petrobras and Eletrobras, there are several sub-national state-owned enterprises that are involved in electricity generation, distribution and transmission. None of these approach the scale of Eletrobras in their capacities, revenues or the amount of state support they receive.

Public finance

Domestic

The Brazilian Development Bank (BNDES) is the country's main financing agent, holding 21% of private sector debt and almost all of Brazil's long-term debt (Musacchio and Lazzarini, 2014). Of the bank's \$3.5 billion income in 2014, 70% came from returns on operations – almost 50% of which was from oil, gas and energy projects, 20% from the National Treasury, 6% from the monetisation of assets and 4% from the Workers' Assistance Fund (BNDES, 2015: 18).

A tally of the contracts that financed fossil fuel production listed on the BNDES website for 2013 and 2014 amounted to \$2.3 billion. According to news reports, BNDES approved an additional \$3.7 billion in financing to Sete Brazil for drilling rigs in 2014, however, the company became embroiled in scandal and the money has not been disbursed. An additional \$5.4 billion in financing went to Petrobras during 2013 and 2014, or an average of \$2.7 billion annually, but has not been included in the totals as the company's investments are already counted as a state-owned enterprise.

The 2010-2014 '*Brasil Maior*' national and multi-sector industrial development plan involves approximately \$70 billion in investment credit. This includes the BNDES FINEM (*Financiamento a Empreendimentos*) line of credit to support the development of new oil fields and enhanced extraction and the *Progridir* financing programme, which

reduces borrowing costs for companies in the Petrobras supply chain by 20-50% (PwC, 2013).

Banco do Brasil, a state-owned bank with 59% government ownership, also provides finance for fossil fuels. Banco do Brasil provided an additional \$603 million in financing for fossil fuel production in 2013 and 2014.

In addition, the three other national finance bodies in Brazil are the *Financiadora de Estudos e Projetos* (FINEP), *Caixa Econômica Federal* (CEF), and *Agência Brasileira de Cooperação*. The oil and gas sector benefits from the joint efforts of BNDES, Petrobras and FINEP as part of the *Invoa Petro* programme, which will provide approximately \$1 billion of finance between 2012 and 2016 for innovation projects in the oil and gas industry supply chain (BNDES 2012b). In 2014, this programme provided \$75 million in financing (BNDES, 2015:27). This amount is not included in the totals to avoid double counting.

Regional development banks also provide finance in Brazil, including: *Agencia de Desenvolvimento do Estado do Ceará* (ADECE), *Banco da Amazônia S.A.*, *Banco de Desenvolvimento de Minas Gerais S.A.* (BDMG), *Banco do Nordeste do Brasil S.A.* (BNB) and *Banco Regional de Desenvolvimento do Extremo Sul* (BRDE). These regional development banks were not found to have financed oil, gas and coal in 2013 or 2014. However, the reporting was not consistent, so it is possible that projects have been missed in some cases.

Altogether, domestic financing for fossil fuels was found to amount to \$6.3 billion over 2013 and 2014, or an annual average of \$3.1 billion.

International

BNDES also operates as an export credit agency: EXIM Brazil. In 2013 and 2014, at least four transactions totalling \$5 million dollars went to support gas pipelines in Argentina – an annual average of \$2.5 million.

Brazil also contributed an annual average of \$50 million to fossil fuel projects in 2013 and 2014 through its shares in the World Bank Group, Inter-American Development Bank and African Development Bank, which ranged from 0.4% to 11% depending on the institution.

Finally, Brazil holds a 20% share in the New Development Bank and a 3.2% share in the Asian Infrastructure Investment Bank, two new international institutions. The New Development Bank is scheduled to begin operations in 2016, with \$50 billion in capital expected to rise to \$100 billion over time. The Asian Infrastructure Investment Bank is also scheduled to begin operations in 2016, with \$100 billion in total capital. These new institutions could be potential sources of public finance for fossil fuel production in the future.

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

Institution name	Coal mining	Coal-fired power	Upstream oil and gas	Oil and gas pipelines, power plants and refineries	Multiple or unspecified fossil fuels	Total fossil fuel finance 2013 & 2014	Annual avg. fossil fuel finance	
Domestic								
BNDES	-	32	5,311	347	166	5,857	2,928	
Banco do Brasil	-	-	603	-	-	603	302	
Subtotal domestic	-	32	5,914	347	166	6,460	3,230	
International								
BNDES	-	-	-	-	5	5	2	
Multilateral development bank share	-	11	28	60	-	99	50	
Subtotal international	-	11	28	60	5	104	52	
Totals								
Total public finance (\$ m)							3,282	
Total public finance (BRL m)							7,713	

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

Private companies

Private upstream oil and gas companies

Over the period of 2013 and 2014, private oil and gas companies (excluding state owned Petrobras) spent an average of \$19 billion annually in capital expenditures in Brazil.

As well as being the largest producer, Petrobras is also the largest holder of oil and gas reserves in Brazil, with 75% of the 16 billion barrels of oil equivalent (BOE) total reserves. BG, which is now owned by Shell, holds the next highest share, with 8% (1.2 billion BOE).

Private midstream/downstream oil and gas companies

While Brazil does have private companies operating in midstream oil and gas, this sector is also heavily dominated by the SOE Petrobras. Of the total of 2.4 million barrels per day of crude oil refining capacity in the country in 2014, 2 million are held by Petrobras.

Similarly, Petrobras controls the vast majority of the national natural gas transmission network, with a stake in 21 of Brazil's 27 natural gas distribution companies. The remainder of the natural gas distribution companies are also state-owned (EIA, 2015).

Many of the private companies involved in downstream oil and gas are the same as those involved in upstream oil and gas production (Brazil Oil and Gas, 2015).

Brazil has three floating LNG regasification and storage terminals. These terminals are privately held by AMP Terminals, Excelerate Energy, and Chemtech.

Private coal companies

Brazil has 13 coal-producing companies. The country's coal production is relatively minor and energy generation from coal accounts for only 2.5% of total generation. However, the country has been increasing its coal production, and produced almost 8 million tonnes in 2014, with future increases expected. The country is now building several new coal-fired power plants and plans to power them with imported coal (Vasconcelos, 2014).

Private electricity companies (fossil fuel-based)

The bulk of Brazil's electricity generation is based on hydropower, and controlled by state-owned Eletrobras and sub-national state owned enterprises. The government also owns almost the entire electricity transmission network (EIA, 2015). The electricity distribution sector, however, is dominated by private companies which control over half of the country's distribution capacity. In Brazil there are 47 private electricity distribution companies, 10 sub-national state owned electricity distributors, and 6 national subsidiaries of Eletrobras (ABRADEE, 2015).

Table 4: Top 10 private upstream oil and gas producers in Brazil, 2013-2014 (\$ million except where stated otherwise)

Company	Headquarter country	Oil production (in country) (million bbl)		Gas production (in country) (billion cm)		Sum of operating expenditure & capital expenditure, including exploration expenditure (in-country, \$ million)		Profitability (from country operations, as measured by free cash flow) (\$ m)	
		2013	2014	2013	2014	2013	2014	2013	2014
BG	United Kingdom	13	24	0	0	2,998	3,652	-1,844	-1,452
Statoil	Norway	16	16	0	0	791	854	348	341
Sinochem	China	10	11	0	0	455	470	334	299
HRT Oil & Gas	Brazil	6	8	0	0	906	713	-391	0
Shell	Netherlands	5	9	0	0	435	1,056	-1,048	-253
Queiroz Galvao Exploracao e Producao	Brazil	0	0	1	1	337	232	-103	12
Cambuhy Investimentos	Brazil	0	0	1	1	227	176	-96	-16
Chevron	United States	2	8	0	0	495	573	183	231
Repsol	Spain	3	6	0	0	659	682	-323	-106
ONGC (India)	India	3	5	0	0	250	276	14	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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