BRAZIL: INVENTORY OF ESTIMATED BUDGETARY SUPPORT AND TAX EXPENDITURES FOR FOSSIL-FUELS

Energy resources and market structure

Brazil's energy consumption has risen rapidly in recent years, lifting its world ranking to eighth-largest energy consumer in 2012. The country is also scaling up its domestic energy production, particularly since the discovery in 2007 of large oil and gas deposits in the offshore pre-salt layer, the ultimately recoverable volumes of which have been estimated at more than 50 billion barrels of oil equivalent. By comparison, the country's proven reserves of oil stood at just over 13 billion barrels at the end of 2012. Crude oil and petroleum products account for 40% of the country's total primary energy supply (TPES), followed by biofuels and hydro-electricity which account respectively for 29% and 14% of total energy use. Other energy sources include natural gas (9%) and coal (6%), while nuclear power and remaining renewable-energy sources account for less than 2% each.

Brazil is a relatively small producer of coal, having extracted about 6.7 million tonnes in 2012, mostly in the form of bituminous coal. Most of the country's coal resources are situated in the south of Brazil, in the states of Rio Grande do Sul and Santa Catarina. Brazilian coal is considered of low quality with a high ash content and low calorific content, which prevents its use in the steel industry. Therefore, 98% of coal consumed in the country is imported, and coal produced domestically is intended primarily for thermoelectric power generation. The country has currently five coal-fired thermoelectric power plants, of which three are state-owned. New investments in coal-fired power plants are planned in the coming years.

The national oil and gas company, Petrobras (Petróleo Brasileiro SA), retains a dominant position in oil and natural-gas production, with large operations in the upstream, midstream and downstream sectors. The state-owned company enjoyed a monopoly in hydrocarbons production until 1997, when Brazil began the liberalization of its energy sector allowing international and domestic oil companies to operate in the market through concession agreements, authorizations or production-sharing contracts (PSCs). The Brazilian oil and gas industry is regulated by the National Agency of Petroleum, Natural Gas and Biofuels (ANP), which is responsible for ensuring compliance with regulations and oversees contracting. The ANP supervises all activities, from exploration and development through distribution and retail sales. Currently, oil and gas contracts in Brazil are mostly based on concession agreements with more than 50 oil-extracting companies such as Shell, British Petroleum, Chevron, Repsol, Statoil, Galp Energia, Repsol, Sinopec and ONGC operating in the country. However, Petrobras remains the leading company by production volume.

Almost all of Brazil's oil production takes place offshore in very deep water in the southeastern region of the country (the Campos and Santos basins). More than 50% of the country's crude-oil production comes from six fields (Barracuda, Jubarte, Marlim, Marlim Sul, Marlim Leste and Roncador) located in the Campos basin. The ANP has since 1998 conducted a series of bidding rounds, known as the "Brazil Rounds", to allocate rights for oil and gas exploration on a regular basis. Both public-sector and private companies participate in these rounds. Bidding companies must follow certain eligibility requirements, such as federal-tax clearance certificates and demonstrate a commitment to increasing local content, both of which may be used as criteria by the ANP in ranking companies. The Brazil Round concluded its 11th round of bidding in 2013. Large discoveries of oil and gas reserves in the pre-salt layer have led to changes in the operating environment for oil and gas producers, including a new regulatory framework — with provisions relating to the management of government oil and gas revenues — and the creation of a new agency, Petrosal, to regulate production from the pre-salt layer.

As with crude oil, Brazil holds significant natural-gas reserves, most of which are located in the southeastern offshore part of the country, with Petrobras controlling more than 90% of natural-gas reserves, as well as domestic production, transmission, and natural-gas imports. Onshore production takes place mainly in the inland States of Amazonas and Bahia, and is consumed locally. The country's main natural-gas pipelines are operated by subsidiaries of Petrobras and are concentrated in the southeast and northeast parts of the country. In the last decade, with the entry into operation of the Bolivia-Brazil gas pipeline and the construction of LNG import terminals in Rio de Janeiro and in the northeast part of the country, there has been a significant increase in the domestic supply of natural gas. Further investments are also expected in the context of the bidding rounds for pre-salt fields. The ANP is planning to introduce new regulation limiting the participation of Petrobras in the construction of new pipelines in the country, as part of its policy to unbundle the natural-gas market in Brazil.

Electricity demand in the country is increasing rapidly, with hydro-electricity accounting for 80% of Brazil's electricity generation. The Brazilian Electricity Regulatory Agency (*Agência Nacional de Energia Elétrica* — ANEEL) is the government agency responsible for co-ordinating electricity policy from generation to retail sales. State-owned Eletrobras (Centrais Elétricas Brasileiras SA) is the dominant power generator and transmitor of electricity in Brazil; by contrast, electricity distribution is carried out by about 41 private and state-owned companies. Despite major regulatory and structural reforms in the 1990s, which marked the transition to a more competitive environment with active participation of private companies, the country suffered large-scale rationing in 2000 and 2001. Starting in 2004, the Federal Government has adopted further adjustments, introducing regulated electricity auctions, long-term contracts, and creating institutions to improve co-ordination and planning. Its flagship programme, "Light for all" (*Programa Luz para todos*), aims to extend electricity access to all rural areas through investments in network expansion and generating systems. The programme's initial target was to bring electricity to 10 million rural inhabitants by the year 2008, a number which was reached in May 2009. The programme was extended until 2014 and currently benefits 14.9 million rural inhabitants.

Prices, taxes and support mechanisms

Prices for petroleum products in Brazil were officially deregulated in January 2002 with the elimination of formal price controls and increased openness to fuel imports. However, in practice the Federal Government often intervenes in the market through Petrobras, using the national company's pricing policy as a discretionary tool to limit variations in domestic fuel prices, in an effort to control inflation. Domestic ex-refinery prices for pure gasoline, diesel fuel and LPG are kept in a narrow band below international prices, which has led the stated-owned company to incur financial losses of about USD 8 billion in 2011 and USD 17 billion in 2012, although one cannot attribute all these losses to the regulated prices.

The ANP has adopted a pricing policy stipulating five different prices for natural gas depending on its origin and end use: domestic natural gas, natural gas imported from Bolivia, natural gas for thermo-electric power plants, natural gas for the fertilizer industry, and LNG, each with different tariff structures and price-adjustment mechanisms. Coal prices in Brazil have been deregulated since 1990 and are set by the market. Electricity tariff equalisation prevailed among all Brazilian States until 1993. Currently, electricity tariffs are set by ANEEL (the electricity regulator), which establishes maximum values to be charged in each concession agreement with contracted distributors.

Fossil fuels in Brazil are subject to a variety of taxes levied at the federal, state, and municipal levels (Table 1). Oil and gas companies are subject to two federal taxes on their net corporate income: the corporate income tax (IRPJ) and the social contribution tax on profits (CSLL), which aims to fund social and welfare programmes. Oil and gas producers are similarly taxable under two general social contributions, the federal PIS and COFINS. On the consumption side, a specific fuel consumption tax, CIDE, was introduced in 2002 and is levied on the import and retail sale of gasoline, diesel fuel, fuel oil, aviation kerosene, LPG, other petroleum products, and ethanol fuel. 71% of the revenues raised through the CIDE are collected by the Federal Government, with the rest allocated to states in shares proportional to the length of their roads, their consumption of fuel, and their population. The revenues finance environmental projects (including those that aim to reduce the effects of pollution caused by the use of fuels), subsidise the fuel consumption of low-income households, and fund transport infrastructure. ICMS is another consumption tax that operates in a manner similar to value-added taxes and is levied at the state level on products imported from other states or overseas.

Table 1. Fossil-fuel taxation overview - Brazil

	Activity	Tax base	Rate applied to fossil fuels	Level
Corporate income taxation				
Corporate income tax (*Imposto de Renda sobre Pessoa Jurídica — IRPJ*)	All sectors	Net income	15% (basic rate); plus surtax of 10% in excess of BRL 240 000 (USD 122 825)	Federal
Social contribution tax on profits (*Contribuição Social sobre o Lucro Líquido — CSLL*)	All sectors	Net income	9%	Federal
Financial Compensation for Mineral Resources Exploration (CFEM)	Mining sector	Net income	2%	Federal (12%), State (23%) and Municipality (65%)
Social security contributions				
PIS and COFINS	All sectors. Petroleum products follow a special regime (*PIS COFINS Monofásico*).	Gross revenues	1% to 47.40%, according to the product	Federal
Consumption taxes				
Excise duty *(Imposto sobre produto Industrializado – IPI)*	All sectors	Aggregated value on end-user price	Exempt	Federal
CIDE Fuel-Tax (*CIDE-Combustíveis*)	Specific to gasoline, diesel fuel, fuel oil, aviation kerosene, LPG, other petroleum products and ethanol fuel	Fixed prices and volume sold or imported	Temporary exemption for petroleum products (June 2012)	Federal
Other taxes				
Customs duties (Imposto de Importação - II)	All sectors	CIF value of imported products	Exempt	Federal

	Activity	Tax base	Rate applied to fossil fuels	Level
Additional tax on goods imported to Brazil by sea (*Adicional de Frete para a Renovação da Marinha Mercante - AFRMM*).	All sectors	CIF value of imported products	Exempt	Federal
ICMS	All sectors	Imports from other states or overseas	12% to 30%, according to the product and the state where it is consumed.	State
Services tax (*Imposto sobre Serviços - ISS)*	All sectors	Revenues derived from the provision of services	Exempt	Municipality

Source: OECD based on Brazilian Federal Government (n.d.) [a].

The coal sector attracts support mainly through the Energy Development Fund (*Conta de Desenvolvimento Energético* — CDE) and through tax exemptions for coal used to generate electricity. Measures benefitting oil and gas producers include special tax incentives for infrastructure development in the north, northeast, and midwestern regions of the country, as well as a special tax regime for goods used in research and production of oil and natural gas. These special tax regimes form part of a comprehensive incentive package created in 2003 and sponsored by the Federal Government, the Programme for Mobilization of the National Oil and Natural Gas Industry (Prominp). In addition, the package includes provisions encouraging professional training and local technology- and capacity-building through the development of local production in the oil, natural-gas, and marine service sectors. The Prominp programme also provides preferential loans to companies in the oil and gas production chain, the financing for which comes from Petrobras and the national development bank (BNDES). Applicants to these programmes must meet a minimum local-content requirement, which range from 30% in deep offshore wells to 70% in onshore oil and gas production. In 2012, preferential loans from BNDES for the oil and gas sector totalled approximately BRL 8 billion (USD 4.1 billion). On the consumption side, a prominent example of support is the CIDE fuel-tax exemption on the retail price of gasoline and diesel fuel, which is intended to limit the impact of variations of international fuel prices in the domestic market.

Data documentation

General notes

Brazil is a federation comprising 27 sub-national jurisdictions[1] that possess a certain degree of freedom in setting prices for energy generation, transmission, and distribution. For this reason, there may be variations between federal and regional authorities in the adoption and implementation of energy-related policies. A few regional spending programmes provide reductions in the ICMS tax for transactions involving diesel fuel used in public transportation. A cursory review of these regional policies suggests that the overall value of sub-national support for fossil fuels is much less significant than that of federal support.

Brazil's fiscal year coincides with the calendar year.

[1] The Federative Republic of Brazil currently consists of 26 states and one federal district.

Methodological note

A large part of support to fossil fuels in non-OECD countries (and in a few member countries such as Mexico) takes the form of price controls or regulations benefitting final consumers. In many cases, this occurs through the government mandating that state-owned oil and gas companies charge lower retail prices, thereby lowering the revenues these companies collect through sales of fuel. This often results in the government subsequently intervening to compensate state-owned oil and gas companies for the losses they incurred in the downstream sector due to the regulated prices, with this compensation taking many forms. Some governments choose, for example, to compensate national oil and gas companies through targeted tax concessions (e.g., VAT exemptions) or equity injections.

At present, this inventory does not attempt to estimate the amounts of support that regulated prices generate, and instead focusses on direct budgetary transfers and tax expenditures, including those benefitting national oil and gas companies. For that reason, some of the measures classified here under "Producer Support Estimate" may have been introduced by governments with a view to compensating domestic, vertically integrated oil and gas companies for the lower prices they are required to charge, resulting in these measures being connected to some extent to consumer support.

Estimates of the support directly conferred to final consumers by regulated prices are, however, available from the International Energy Agency (IEA), which estimates these induced transfers as part of its annual "World Energy Outlook" publication. Readers are therefore advised not to compare or add together the OECD and IEA estimates given the significant risk of overlap and double-counting this involves.

Producer Support Estimate

Upstream operators of oil and natural-gas concession blocks are subject to a particular tax regime that includes additional specific government levies, notably royalties, a signature bonus, a special participation tax, and an area-retention tax. Royalties take the form of a monthly tax applied on sales revenue at a rate of 10%, which can be reduced in exceptional cases to 5%. Special participation is a quarterly tax applied on sales revenue at a rate that varies from 10% to 40%, and which is adjusted for certain high-volume or high-profit-margin fields. The signature bonus is an amount included by oil and gas producers in their concession bids, and which is payable to the ANP upon signature of the concession agreement. Last, the area-retention tax is an annual tax set by the ANP during the bidding round, and which depends on the size and the geological characteristics of the field. Under this latter tax, upstream operators of concession blocks located onshore must pay the owners of the land on which they operate an amount determined by the ANP, usually in the range of 0.5% to 1% of the value of production. Under concession agreements, upstream operators are also required to carry out domestic R&D investments equal to at least 1% of their gross revenues.

Some fiscal measures related to oil and natural-gas production may not constitute tax expenditures under an alternative baseline where resource taxes (or production taxes) vary with market conditions and production costs. This inventory uses the annual amounts of tax expenditures as reported by the Federal Revenue Secretariat of Brazil.

Special Tax Incentive for Oil Companies Infrastructure Development in North, Northeast and Midwest Regions – REPENEC (data for 2011-)

This measure was introduced in 2010 under the name of REPENEC to provide oil and natural-gas companies with special tax incentives in relation to infrastructure development in the north, northeast, and midwestern regions of Brazil. Through REPENEC, the government provides temporary exemptions from PIS and COFINS social contributions and from the IPI excise tax that is levied on domestic sales of certain capital goods and services. REPENEC also provides temporary exemptions from customs duties on imports of certain capital goods. Eligible products include machinery, equipment, construction materials and services for implementation of infrastructure work in the petrochemical, oil-refining, and natural-gas sectors.

The tax exemptions apply to acquisitions, domestic leases, and imports of goods and services linked to approved oil and gas infrastructure projects, completed within five years from the date of the concession agreement. This measure has been extended until July 2017.

Annual transfers related to this measure exclude customs-duty exemptions and are allocated to crude oil and natural gas on the basis of the IEA's Energy Balances for Brazil's extraction sector.

Sources: RFB (2010), RFB (various years) [a], IEA.

Tag: BRA_te_01

Special Tax Regime for Goods used in the Exploration and Production of Oil and Natural Gas Fields — REPETRO (data for 2010-)

The REPETRO programme was introduced in 1999 to allow upstream oil and natural-gas operators to benefit from a special tax regime on their imports and "presumed exports"[2] of machines, equipment, instruments, tools, and spare parts intended for use in Brazil in connection with the exploration, development, production, and storage of oil and gas. REPETRO provides exemptions from PIS and COFINS social contributions, the IPI excise tax, customs duties, as well as exemptions from an additional tax on goods imported to Brazil by sea (*Adicional de Frete para a Renovação da Marinha Mercante* – AFRMM). ICMS tax reductions may also be available, depending on the tax legislation of the State concerned.

This measure is scheduled to remain in force through 31 December 2020.

According to the Brazilian Federal Revenue Secretariat, tax exemptions due to REPETRO totalled BRL 40 billion (about USD 20 billion) over the last ten years. Annual transfers related to this measure are allocated to crude oil and natural gas on the basis of the IEA's Energy Balances for Brazil's extraction sector.

Sources: RFB (n.d.) [a], IEA.

Tag: BRA_te_02

Special Tax Regime for Imports of Crude Oil and Petroleum Products - REPEX (data for 2008-)

This provision came into force in 2001 under the name of REPEX and allows oil companies to benefit from a special tax regime for their imports of crude oil and refined petroleum products in Brazil.

[2] Presumed exports (known in the country as *exportação ficta* or *saída ficta*) refer to the sale of machines and other equipment by domestic oil and gas suppliers to foreign companies with oil and gas activities in the Brazilian territory, even though the goods do not actually leave the country. In order to benefit from this special tax regime, presumed exports must be combined with a subsequent temporary import of goods.

REPEX provides exemptions from PIS and COFINS social contributions, the IPI excise tax, and customs duties.

Annual transfers related to this measure exclude customs-duty exemptions and are allocated to crude oil and diesel fuel on the basis of the IEA's Energy Balances for Brazil's fuel imports.

Sources: RFB (2001c), RFB (various years) [b], IEA.

Tag: BRA_te_05

Consumer Support Estimate

CIDE Fuel-Tax Reductions (data for 2010-)

This measure was introduced by the federal government to limit variations in domestic fuel-prices. It consists of reductions in the CIDE fuel-tax applicable to imports and retail sales of gasoline, diesel fuel, kerosene, aviation kerosene, and natural gas. CIDE tax rates, which have been gradually reduced since 2004, are generally expressed on a specific basis, taking into account the volume of fuel sold or imported. CIDE tax rates for gasoline, diesel fuel, kerosene, aviation kerosene, and natural gas have been set to zero since June 2012 in order to offset increases in the ex-refinery prices of petroleum products.

Annual amounts related to this measure are allocated to gasoline and diesel fuel on the basis of the IEA's Energy Balances for Brazil's road, residential, and agricultural sectors. No estimates of the revenue foregone due to the CIDE fuel-tax reductions are available for kerosene, aviation kerosene and natural gas.

Sources: RFB (2001a), RFB (2001b), RFB (various years) [a], IEA.

Tag: BRA_te_03

LPG Allowance for Low-Income Households (data for 2003)

Sales of LPG in Brazil were until 2001 subject to a negative rate of CIDE fuel-tax. Starting in 2002, the federal government then introduced an LPG allowance for low-income households (*Auxílio Gás*) targeting the beneficiaries of an income-redistribution programme known as the Social Protection Network (*Rede de Proteção Social*). The LPG allowance was financed out of CIDE fuel-tax revenues and consisted in the distribution every two months of vouchers valued at BRL 15 to low-income families (those earning less than half of the minimum wage) for purchasing LPG cylinders. This programme — as well as other similarly targeted programmes — was incorporated in late 2003 into the government's broader social-welfare programme *Bolsa Família*. This latter programme now provides beneficiaries with direct cash transfers that do not directly support the consumption of LPG.

Annual amounts related to this measure are entirely allocated to LPG. Data were only available for the year 2003 at a time when the measure provided LPG vouchers rather than cash transfers.

Sources: Brazilian Federal Government (2002), Brazilian Senate (2003).

Tag: BRA_dt_01

Tax Exemptions for Coal and Natural Gas used in Electricity Generation (data for 2005-)

This provision exempts coal- and gas-fired thermoelectric power plants from PIS and COFINS taxes for their purchases of coal and natural gas. Prior to August 2013, only coal and natural gas purchased by thermoelectric power plants that were part of the Thermoelectric Priority Programme benefitted from this exemption.

Annual transfers related to this measure are entirely allocated to hard coal given the low share of natural gas in total electricity generation in Brazil.

Sources: RFB (2001d), RFB (various years) [a].

Tag: BRA_te_04

Tax Reduction on the Import and Retail Sale of Naphtha (data for 2005-)

This provision was introduced in 2005 to provide oil companies with reductions from PIS and COFINS social contributions on their imports and retail sales of naphtha.

This measure is entirely allocated to naphtha.

Sources: RFB (various years) [a], RFB (n.d.) [b].

Tag: BRA_te_06

Fuel Consumption Fund (data for 2007-)

This measure dates back to 1970 and allows diesel-fired thermal power plants located in the northern region of Brazil (known as "isolated systems") to benefit from refunds meant to offset the high costs of electricity generation in this area. The Fuel Consumption Fund (*Conta de Consumo de Combustíveis* - CCC) thus reimburses the difference existing between the region's high costs for electricity generation and the national average cost, taking into account the costs associated with the purchasing and shipping of diesel fuel to this area. The fund is financed through a charge levied on electricity distribution and transmission companies.

Annual amounts related to this measure cover the costs of purchasing and transporting diesel fuel and exclude customs-duty exemptions.

This measure is entirely allocated to diesel fuel.

Sources: Eletrobras (various years).

Tag: BRA_dt_02

Energy Development Fund - CDE (data for 2006-)

The Energy Development Fund (*Conta de Desenvolvimento Energético* - CDE) was set up in 2002 with multiple objectives: to help low-income households, to support diesel- and coal-fired power plants, and to encourage the expansion of the natural-gas network in Brazil. Resources for this fund come from a charge levied on electricity-distribution companies, the revenues of which are also used to maintain the competitiveness of energy produced from alternative sources (wind-power, small hydro-power, and biomass) and coal. CDE also partly funds the programme "Light for all" (*Programa Luz para todos*), which extends electricity access to rural areas of the country. There are currently five diesel- and coal-fired power plants that benefit from funding under the CDE: Charqueadas, Jorge Lacerda, São Jerônimo, Presidente Médici, and Figueira.

Annual amounts related to this measure only cover the grants provided to diesel- and coal-fired power plants. Annual transfers from CDE are allocated to hard coal, fuel oil, and diesel fuel on the basis of estimates provided by Eletrobras, which has responsibility for managing the fund.

Sources: Eletrobras (various years).

Tag: BRA_dt_03

General Services Support Estimate

National System of Strategic Fuel Stocks - SINEC (no data available)

In 1991, the federal government approved a law creating the SINEC (*Sistema Nacional de Estoques de Combustíveis*), which provides for the establishment of a strategic reserve for crude oil and ethanol, with a view to guaranteeing the adequate supply of fuels in Brazil. The strategic reserve has, however, not been implemented so far.

Sources: Brazilian Federal Government (1991).

National Plan for Research and Development in the Oil and Gas Sector – CP-Petro (data for 2004-)

In 1999 the Brazilian government established the CP-Petro programme to conduct research in connection to enhanced oil and natural-gas recovery techniques. The programme is financed out of royalty revenues and also encourages the training and qualification of workers and the development of partnership projects involving companies, higher-education institutions, and research centres linked to the oil and gas sector in the country.

This programme is allocated to the GSSE since it benefits Brazil's oil and gas sector as a whole and does not necessarily increase the current production or consumption of fossil fuels. This inventory uses production data from the IEA's Energy Balances to allocate the annual amounts reported in budget documents to oil and natural-gas extraction.

Sources: FINEP (2012), Brazilian Federal Government (n.d.) [b], IEA.

Tag: BRA_dt_04

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