



Country Analysis Executive Summary:

Brazil

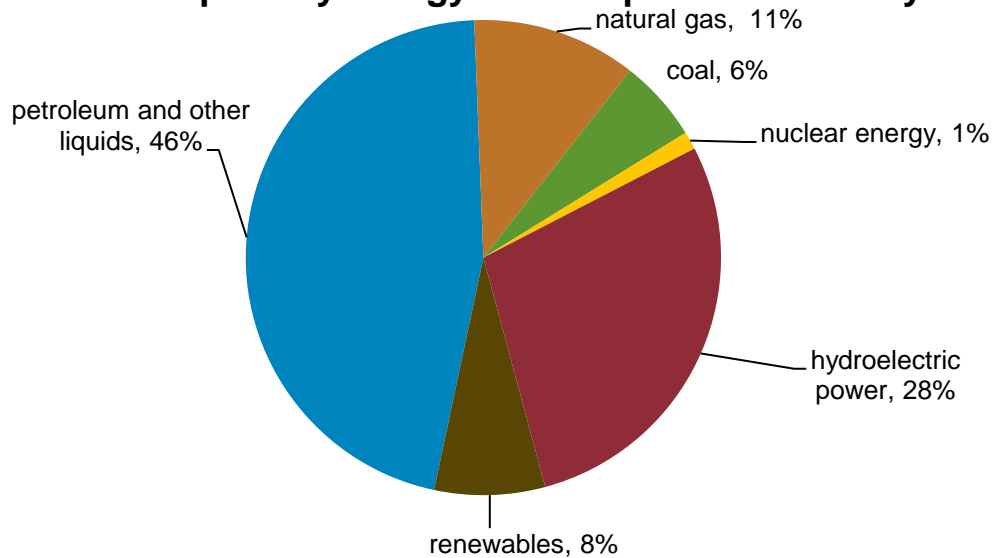
Last Updated: April 18, 2019

Overview

Brazil is the ninth-largest liquid producer in the world and the third-largest producer in the Americas.

- In 2017, Brazil produced 3.36 million barrels per day (b/d) of petroleum and other liquids, making it the ninth-largest producer in the world and the third-largest in the Americas behind the United States and [Canada](#).
- In 2017, Brazil was the eighth-largest energy consumer in the world and the third-largest energy consumer in the Americas, behind the United States and Canada.¹
- Total primary energy consumption in Brazil has grown by 28% in the past decade because of economic growth. Petroleum and other liquids represented about 46% of Brazil's domestic energy consumption in 2017 (Figure 1).

Figure 1. Total primary energy consumption in Brazil by fuel type, 2017



Source: BP Statistical Review of Energy, 2018

Petroleum and other liquids

Brazil was the largest producer of petroleum and other liquids in South America in 2017.

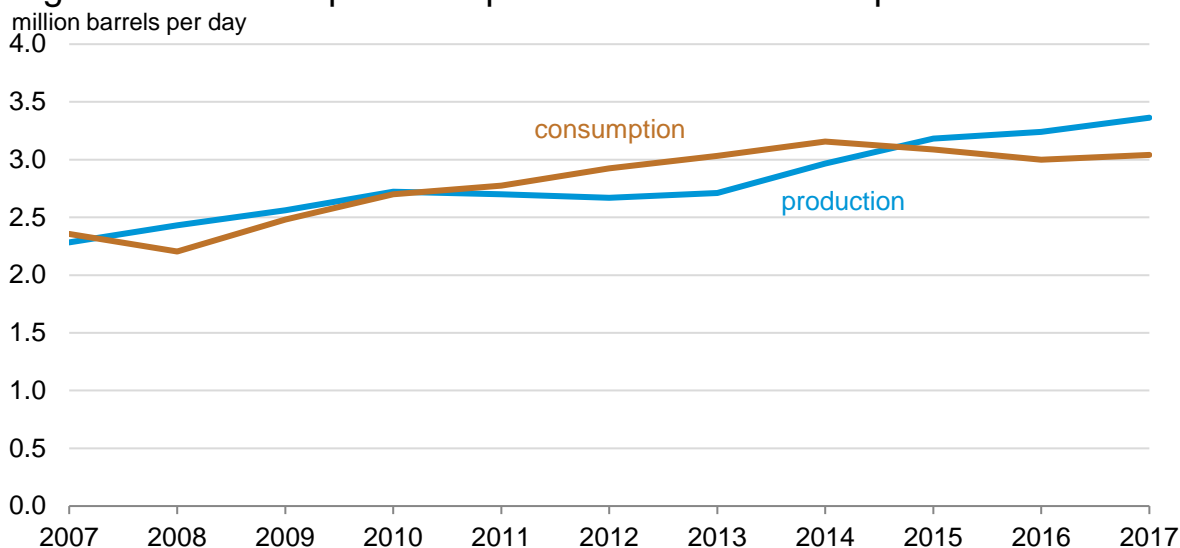
Reserves

- The *Oil & Gas Journal* estimates that as of January 2018, Brazil had 12.6 billion barrels of proved oil reserves. This amounts to the second-largest level in South America after Venezuela.²

Production and Consumption

- In 2017, Brazil's production of petroleum and other liquid fuels was 3.36 million b/d, up from 3.24 million b/d in 2016, continuing a trend of increasing production. Crude oil (including condensate) accounted for 2.6 million b/d, and the remainder was produced as biofuels, natural gas, and other natural gas liquids (NGLs) (Figure 2).

Figure 2. Brazil's liquid fuels production and consumption



Source: U.S. Energy Information Administration, *Short-Term Energy Outlook*

- Production of oil in the pre-salt layer grew 26% from 2016 to 2017, accounting for almost 50% of total production in 2017, according to the Agência Nacional do Petróleo, Gás Natural e Biocombustíveis (ANP).³
- The transportation sector accounts for a large share of demand. In 2017, Brazil's energy consumption in the transportation sector was 33% of total energy demand: diesel oil accounted for 44%, gasoline accounted for 29%, and ethanol accounted for 16%. The remaining shares were natural gas, biodiesel, and aviation kerosene.⁴

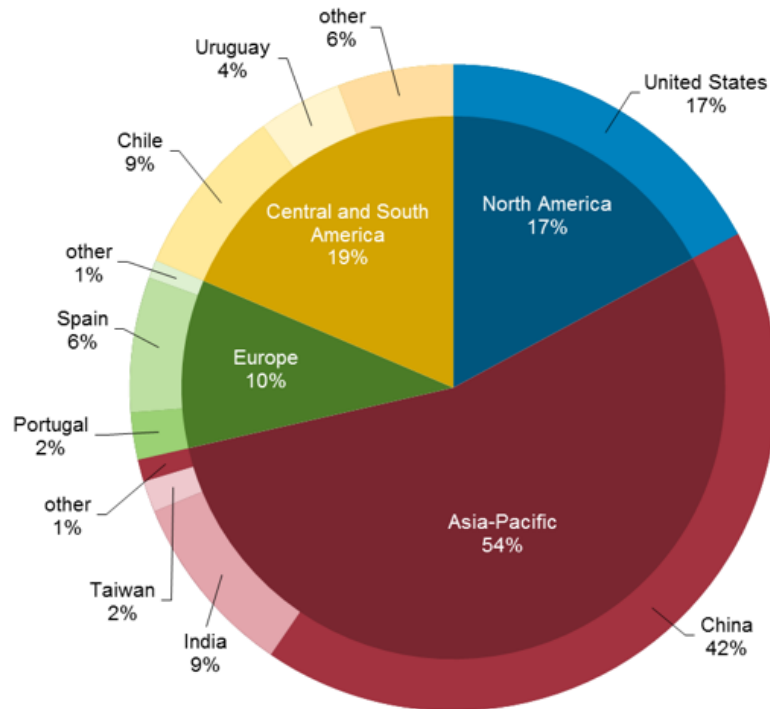
Refining


- According to *Oil & Gas Journal*, at the end of 2017 Brazil had 2.1 million b/d of crude oil refining capacity at 12 refineries, most of which are owned by Petrobras.⁵
- In 2017, Brazil ranked ninth in the world in refinery capacity and had a utilization rate of 76%.⁶

Exports and Imports

- Brazil exported approximately 997,000 b/d of crude oil in 2017, a 25% increase from the previous year and the highest amount to date.⁷ China, the largest importer of Brazilian crude oil, imported about 423,000 b/d in 2017, an increase of more than 43% from 2016.⁸ (Figure 3).

Figure 3. Brazil crude oil exports by region and country, 2017



 Note: Some individual figures do not match the regional total due to rounding.
Source: U.S. Energy Information Administration, Agência Nacional do Petróleo, Gás Natural e Biocombustíveis

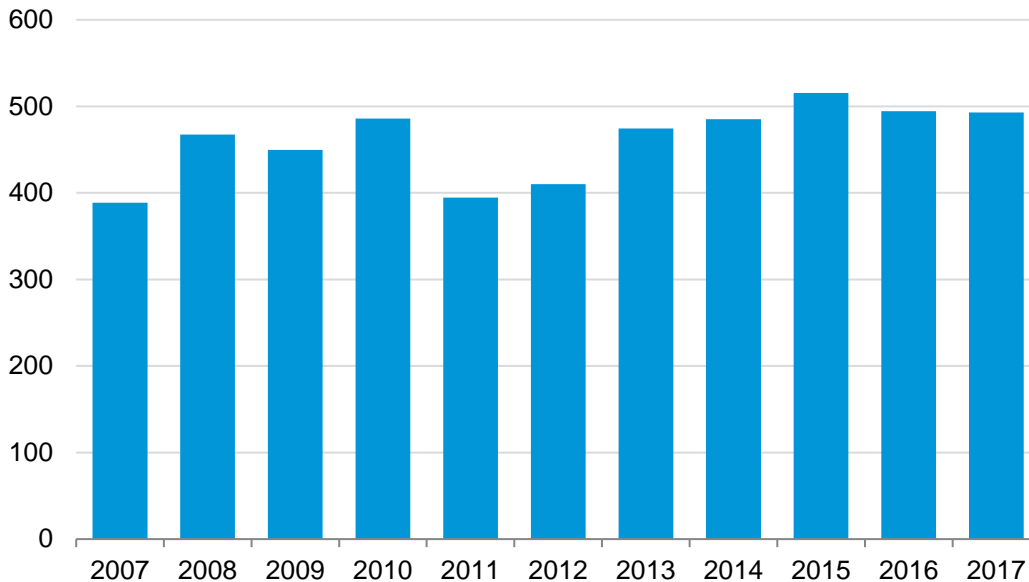
- Brazil imported its largest volume of crude oil from the Middle East and Africa, accounting for 55% and 40%, respectively. Crude oil from Saudi Arabia accounted for 51% of Brazil's total crude oil imports in 2017.⁹
- In 2017, Brazil imported 616,000 b/d of petroleum products, up 26% from the previous year.¹⁰ The United States was the largest source of Brazil's petroleum products imports, accounting for 314,000 b/d of imports in 2017. (Link to Background Reference)

Biofuels

- Total biofuels production in 2017 was 567,000 b/d.¹¹ Brazil is the second-largest producer of ethanol in the world after the United States.¹² Total ethanol production fell to 493,000 b/d in 2017, slightly lower than 2016, according to the ANP (Figure 4).¹³ (Link to Background Reference)

Figure 4. Brazilian ethanol production

thousand barrels per day



Source: U.S. Energy Information Administration, ANP

- In 2017, Brazil exported approximately 25,000 b/d of ethanol, down more than 70% from its highest level of exports in 2008. The United States imported 17,000 b/d of ethanol from Brazil in 2017.¹⁴
- Although Brazil is a major ethanol producer, the country imported more than 31,000 b/d of ethanol in 2017 (up 119% from 2016). Nearly all imported ethanol came from the United States. Brazil is a significant market for American ethanol exporters because of several factors. Brazil began importing small amounts of ethanol from [South Africa](#) in 2017.¹⁵
- Brazil also produces biodiesel. In 2017, the country produced approximately 74,000 b/d of biodiesel, a 13% increase from 2016. More than three-quarters of biodiesel is produced from soybean oil.^{16,17}

Natural Gas

Despite Brazil's significant reserves, natural gas accounted for only 11% of Brazil's total primary energy consumption in 2017. Brazil's natural gas reserves are located primarily offshore in the Campos Basin.

Reserves

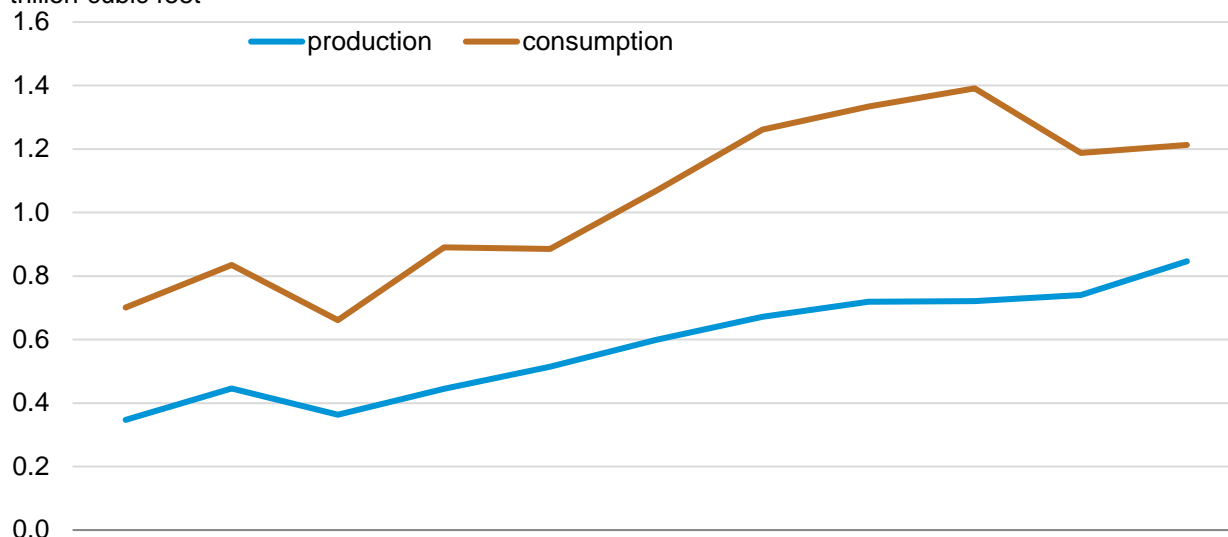
- According to the *Oil & Gas Journal*, Brazil held 13 trillion cubic feet (Tcf) of proved natural gas reserves at the beginning of 2018, the third largest in South America after [Venezuela](#) and [Peru](#).

Production and Consumption

- In 2017, Brazil produced 846 billion cubic feet (Bcf) of natural gas, an increase from 2016 as Brazil continues to develop its vast offshore reserves.¹⁸
- Brazil's consumption of natural gas was 1.2 Tcf in 2017, an increase from 2016 (Figure 5). Demand from the industrial sector was a little more than 50% of the country's total natural gas consumption in 2017.¹⁹

Figure 5. Brazil's dry natural gas production and consumption

trillion cubic feet



Source: U.S. Energy Information Administration based on ANP

- Production of natural gas in the pre-salt layer grew 26% year over year from 2016 to 2017, according to ANP.²⁰

Imports

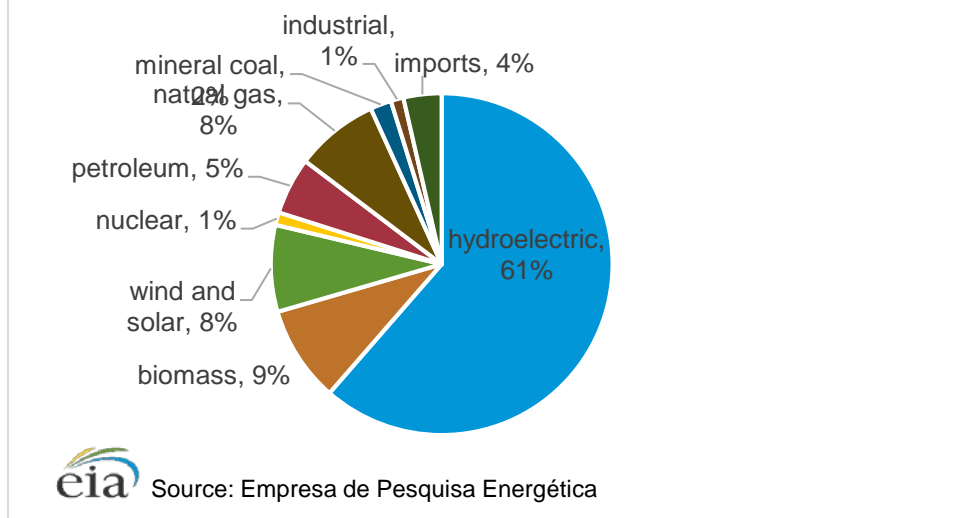
- Brazil imported 376 Bcf of natural gas in 2017, a decrease from 2016. Of this amount, 83% came from Bolivia (via pipeline), and the remainder was liquefied natural gas (LNG) imports primarily from [Nigeria](#), the United States, and [Angola](#).²¹

Electricity

Brazil has the third-largest electricity sector in the Americas behind the United States and Canada.

- Brazil had an installed generating capacity of 157 gigawatts (GW) in 2017, a 4.5% increase from 2016, according to the Ministério de Minas e Energia (MME) (Figure 6).²²

Figure 6. Power generation supply, 2017



- As of June 2017, Brazil had 100 megawatts (MW) of photovoltaic (PV) solar in its generation mix, up from about 1 MW five years ago. By 2024, the government expects Brazil's overall solar capacity to exceed 8 GW.²³

Notes

- In response to stakeholder feedback, the U.S. Energy Information Administration has revised the format of the Country Analysis Briefs. As of January 2018, updated briefs are available in two complementary formats: the Country Analysis Executive Summary provides an overview of recent developments in a country's energy sector and the Background Reference provides historical context. Archived versions will remain available in the original format.
- Data presented in the text are the most recent available as of April 2019.
- Data are EIA estimates unless otherwise noted.

¹ BP [Statistical Review of World Energy, 2018](#).

² *Oil & Gas Journal*, Worldwide Report, 2018.

³ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, "[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)" Table 1.3 (August 2018).

⁴ Empresa de Pesquisa Energética, "[Balanço Energético Nacional 2018](#)" (May 2018).

⁵ *Oil & Gas Journal*, Worldwide Refining Survey, 2018.

⁶ *Oil & Gas Journal*, Worldwide Report, 2018.

⁷ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, "[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)" Table 1.17 (August 2018).

⁸ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, "[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)" Table 1.17 (August 2018).

⁹ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, "[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)" Table 1.16 (August 2018).

¹⁰ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, "[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)" Table 1.18 (August 2018).

¹¹ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, "[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)" Table 2.1 and 2.7 (August 2018).

¹² BP [Statistical Review of World Energy, 2018](#).

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- ¹³ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, “[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)” Table 2.1 (August 2018).
- ¹⁴ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, “[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)” Table 2.4 (August 2018).
- ¹⁵ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, “[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)” Table 2.3 (August 2018).
- ¹⁶ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, “[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)” Table 2.7 (August 2018).
- ¹⁷ US Department of Agriculture, “[Brazil Biofuels Annual Report 2016](#)” (August 2016.)
- ¹⁸ BP [Statistical Review of World Energy, 2018](#).
- ¹⁹ Empresa de Pesquisa Energética, “[Balanço Energético Nacional 2018](#)” (May 2018).
- ²⁰ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, “[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)” Table 1.5 (August 2018).
- ²¹ Agência Nacional do Petróleo, Gás Natural e Biocombustíveis, “[Oil, Natural Gas, and Biofuels Statistical Yearbook 2018](#)” Table 1.23 (August 2018).
- ²² Ministério de Minas e Energia, “[Resenha Energética Brasileira: Exercício de 2017.](#)”
- ²³ BN Americas, “[Out of the dark: Brazil's solar boom](#)” (June 8, 2017).