



Brazilian energy needs grow significantly and its energy mix continues to rely heavily on hydro and renewables over the forecast period

1. Brazilian energy consumption grows by 2.2% p.a., much faster than the global growth (1.2% p.a.).
2. Renewables gain significant share in the energy mix to account for 23% by 2040 (up from 14% in 2017).
3. Brazil accounts for 23% of the increase in global oil production between 2017 and 2040.

+2.2% p.a.

Average growth in Brazilian energy consumption

22%

Share of biofuels in total liquids consumed in 2040

+2 Mb/d

Growth in oil production

+35 Bcm

Growth in gas production

- ▶ Energy consumption in Brazil increases by 2.2% p.a., much faster than the global growth of 1.2% p.a. Its share on global energy consumption increases to 3% by 2040.
- ▶ Strong energy consumption growth implies that Brazilian energy per capita converges to the global average over the forecast period.
- ▶ The consumption of every fuel increases. However, most the growth is in renewables including biofuels (+71 Mtoe, + 175%), oil (46 Mtoe, + 39%) and natural gas (+38 Mtoe, + 114%).
- ▶ The energy mix shifts toward non-fossil fuels as hydro, renewables and nuclear account for almost 50% of the mix by 2040, up from 43% in 2017.
- ▶ The share of renewables in power generation doubles to one-third in 2040. The use of gas also gains weight in the power mix while limited growth in hydro capacity means that it loses share.
- ▶ Energy demand grows in every final sector. However, buildings grow the fastest (+91%), followed by transport (62%) and non-combusted (52%) and industry (51%).
- ▶ Liquids demand grows by over 1 Mb/d but growth decelerates. In fact, liquids demand plateaus slightly above 4 Mb/d in the late 2030s.
- ▶ Energy production increases by 2.6% p.a. and Brazil becomes a net energy exporter.
- ▶ Brazil remains the world's second largest user of biofuels after the US; in 2040 22% of total liquids consumed are biofuels.
- ▶ Oil production increases significantly (70%) reaching almost 5 Mb/d by 2040, which represents 5% of global production.
- ▶ Gas production more than doubles to reach 63 Bcm by 2040. However, Brazil remains a net gas importer over the forecast period.
- ▶ Net CO₂ emissions grow by 31%, slightly faster than the non-OECD average.



BP Energy Outlook – 2019

Insights from the Evolving transition scenario – Brazil



	Level		Shares		Change (abs.)		Change (%)		Change (annual)*	
	2017	2040	2017	2040	1995-2017	2017-2040	1995-2017	2017-2040	1995-2017	2017-2040
Primary energy consumption (units in Mtoe unless otherwise noted)										
Total	294	485			137	191	87%	65%	2.9%	2.2%
Oil† (Mb/d)	2	3	40%	34%	1	1	58%	38%	2.1%	1.4%
Gas (Bcm)	38	82	11%	15%	33	44	621%	114%	9.4%	3.4%
Coal	17	18	6%	4%	5	2	40%	9%	1.5%	0.4%
Nuclear	4	10	1%	2%	3	6	526%	175%	8.7%	4.5%
Hydro	84	112	28%	23%	26	28	46%	34%	1.7%	1.3%
Renewables (including biofuels)	41	112	14%	23%	33	71	401%	175%	7.6%	4.5%
Transport [^]	93	152	32%	31%	50	58	116%	62%	3.6%	2.1%
Industry [^]	114	172	39%	35%	48	58	73%	51%	2.5%	1.8%
Non-combusted [^]	12	18	4%	4%	2	6	22%	52%	0.9%	1.8%
Buildings [^]	75	143	25%	29%	37	68	97%	91%	3.1%	2.9%
Power	130	247	44%	51%	67	117	106%	89%	3.3%	2.8%
Production										
Oil† (Mb/d)	3	5			2	2	273%	70%	6.2%	2.3%
Gas (Bcm)	28	63			22	35	417%	129%	7.8%	3.7%
Coal	3	2			1	-1	28%	-32%	1.1%	-1.6%

* Compound annual growth rate.

† Oil supply includes crude oil, shale oil, oil sands, natural gas liquids, liquid fuels derived from coal and gas, and refinery gains, but excludes biofuels. Oil demand includes consumption of all liquid hydrocarbons but excludes biofuels.

[^] Includes electricity and the associated conversion losses in power generation.



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