

MINISTRY OF
MINES AND ENERGY



MONTHLY ENERGY BULLETIN BRAZIL

May 2024 Edition

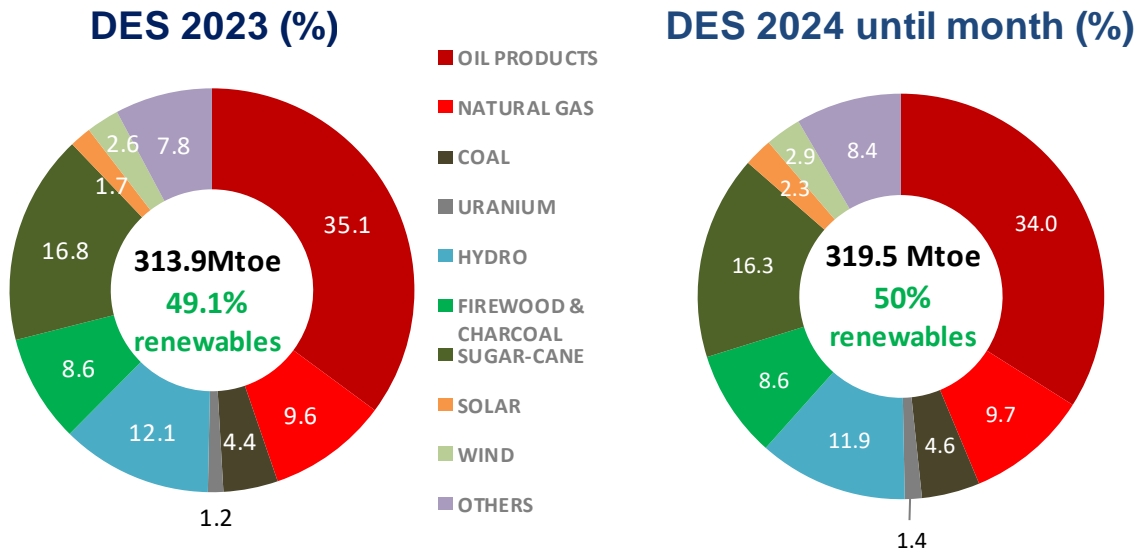
November 24

DOMESTIC ENERGY SUPPLY

Regarding the data up to November 2024, renewables share in the Domestic Energy Supply (DES)¹ is expected to increase to 49.7%, slightly above the previous year (48.1%), mainly due to the greater share of hydraulic and sugarcane products.

According to the most current survey by the Brazilian Supply Company (Conab), it is estimated that there will be an increase of 1.3% in ethanol production from sugarcane and corn compared to the 2023/2024 harvest.

MORE RENEWABLE DOMESTIC ENERGY SUPPLY IN 2024

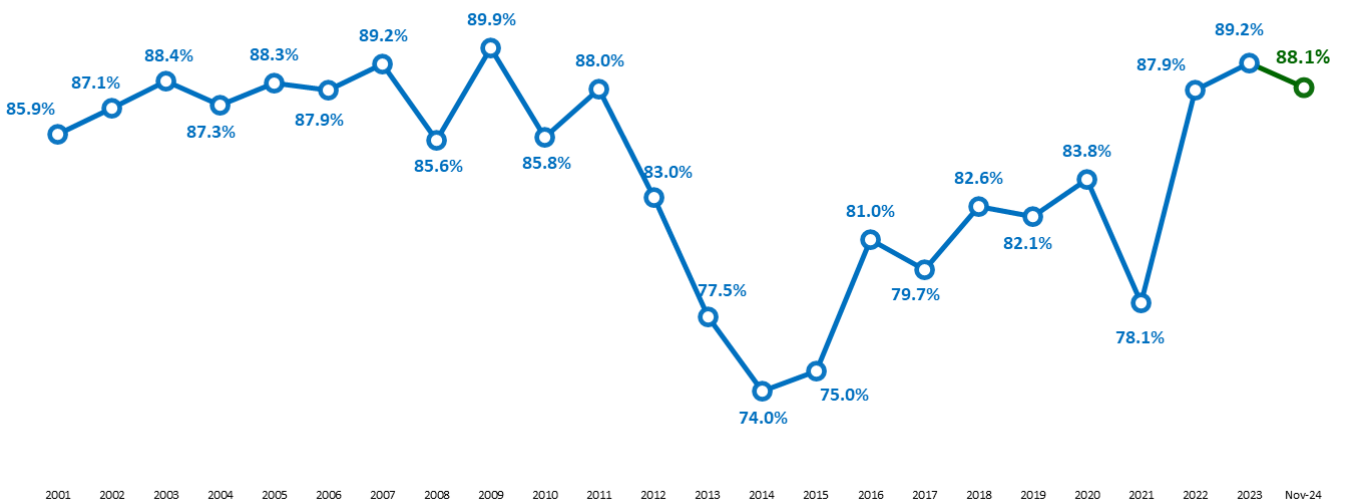


*OTHER: includes other renewable and non-renewable

In 2024, regarding the proportion of renewables in the Domestic Electricity Supply (DELS)², it was found that 88.1% were obtained from renewable sources up to November, reaching a cumulative value of 706.3 TWh.

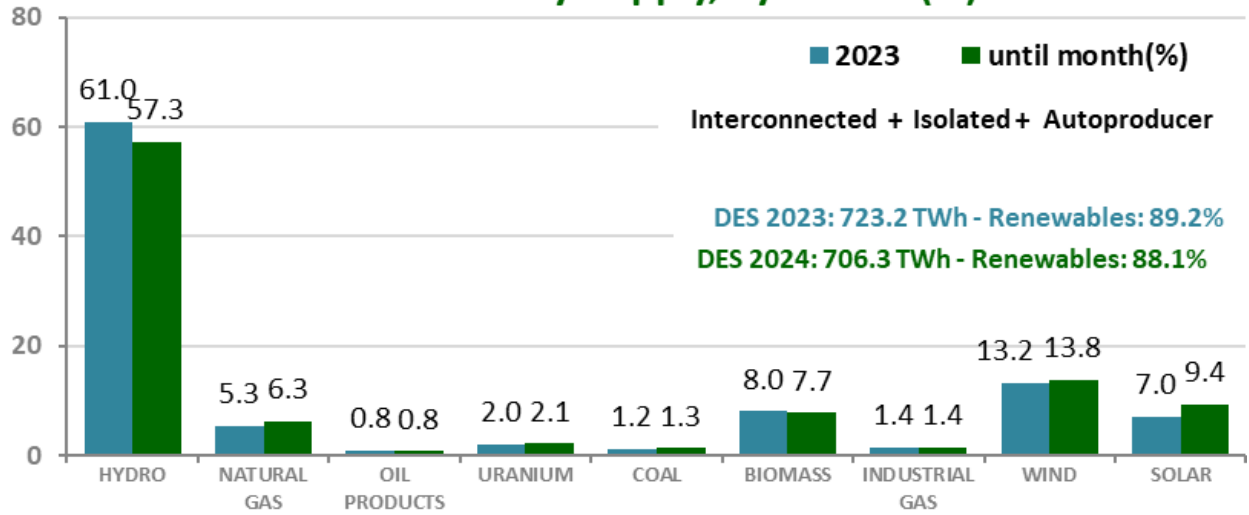
The figure below highlights the significant proportion of renewables in our DELS, contributing to a cleaner energy generation. This is a result of both favorable hydrological conditions and investments in solar and wind energy.

Percentage of Renewables at DELS



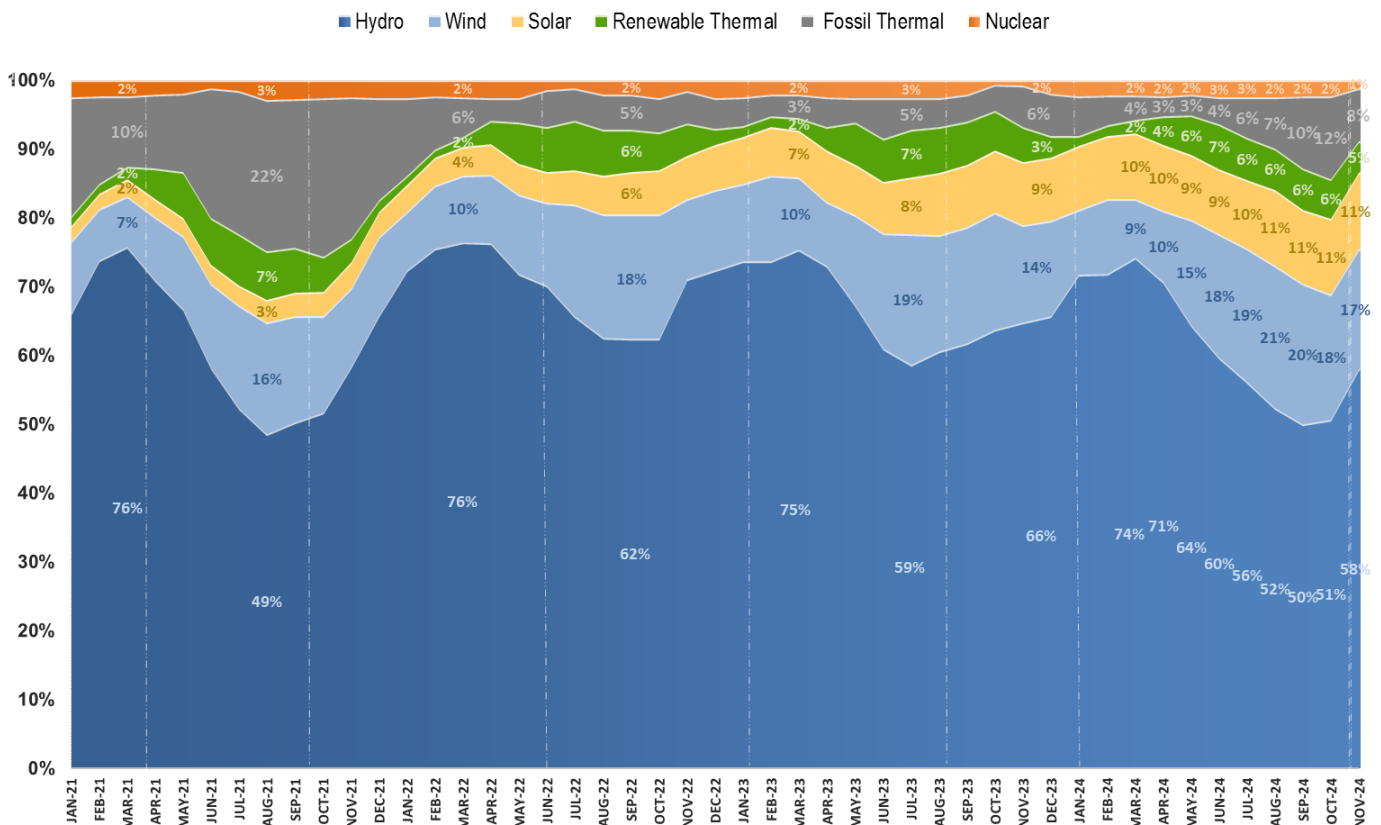
For the first eleven months of the year, compared to the same period of the previous year (year-to-date, or YTD), there was a 49.0% increase in generation for centralized solar and 12.0% for wind generation. For hydropower, compared to the average for the whole of last year, generation is around 2.0% lower.

Domestic Electricity Supply, by Source (%)



The last two years were more favorable for hydropower generation, compared to 2021, when there was a scenario of water scarcity. The following figure shows how each source participated in monthly power generation. When there was a reduction in hydropower share, biomass and wind sources mostly increased their share, in order to meet the Brazilian electricity demand. Wind and solar shares have increased over the years, due to an increase in installed capacity, mainly due to solar distributed generation.

Share of Power Supply in Electrical Generation in Brazil (with DG) - 2021 to 2024



HIGHLIGHTS IN NOVEMBER 2024

Oil and natural gas

Oil production decreased 1.1%, while natural gas production rose 2.2%, YTD.

Steel and Mining growing

YTD, steel production grew by 5.9% while aluminum production increased by 8.8% and iron ore exports rose by 5.3%. Meanwhile, pellets exports increased by 10.3%.

Hydraulic supply falling

The hydraulic energy supply decreased by 1.8%, YTD. The monthly average was 49,099 MWavg. Itaipu's supply for the same period also decreased by 29.5%.

Wind energy supply in high

Wind energy supply up to November 2024 increased by 12.0%, YTD.

For the first eleven months of 2024, 4,014 MW of wind power plants came into operation, 1.0% lower than the same period of the last year.

International power energy exchange

In November 2024, Brazil exported 62.0 MWavg to Argentina and imported 38.0 MWavg from Uruguay.

Increase in natural gas availability

Gas consumption availability grew by 3.2% YTD.

Coal for electricity power generation rising

Coal public power generation showed an increase of 16.3%, YTD.

Oil derivatives apparent consumption

Apparent consumption of petroleum derivatives reduced by 1.1% YTD, diesel B (14% biodiesel) final consumption decreased by 0.1% and regular gasoline consumption reduced by 4.4%.

Energy consumption in light vehicles using Otto cycle fuels (gasoline, ethanol, and natural gas) had an increase of 4.7% year-to-date.

Gasoline and hydrated ethanol prices rising

Gasoline C and hydrated ethanol prices increased by 7.5% and 1.7% respectively, year-to-date.

Biodiesel production and automotive ethanol consumption in high

Biodiesel production and automotive ethanol consumption increased by 23.9% and 19.4%, respectively, YTD. Automotive ethanol includes anhydrous ethanol mixed with gasoline and hydrated ethanol.

As of April 2023, the mandatory biodiesel blending in diesel oil was increased to 12%, as well as the progressive evolution of this percentage, which should reach 15% by 2026.

A resolution of the National Energy Policy Council - CNPE established new guidelines for the evolution of the mandatory addition of biodiesel to diesel sold to the final consumer.

In February 2025, a new resolution of CNPE temporarily fixed the mandated percentage for the blending of biodiesel with diesel at 14% until a new decision of the Council. Biodiesel replacing fossil diesel contributes to the reduction of greenhouse gas emissions, in addition to reducing the need to import fossil fuels.

Electricity consumption growing

Electricity consumption in the residential sector grew 0.4% compared to November 2023. Industrial consumption increased by 5.5% while commercial consumption grew 1.2%.

Electricity tariffs in high

The three electricity tariffs (residential, commercial and industrial) had increased compared to the previous year. Residential tariffs grew by 4.7%, while for the commercial sector there was an increase of 8.3%, and 10.7% for the industrial sector.

Solar distributed generation installed capacity (DG) rising

Brazilian solar DG installed capacity is still a highlight and has increased 36.5% compared to November 2023. The centralized solar installed capacity (non-GD) also increases, with a 49.3% growth compared to the same month of the previous year.

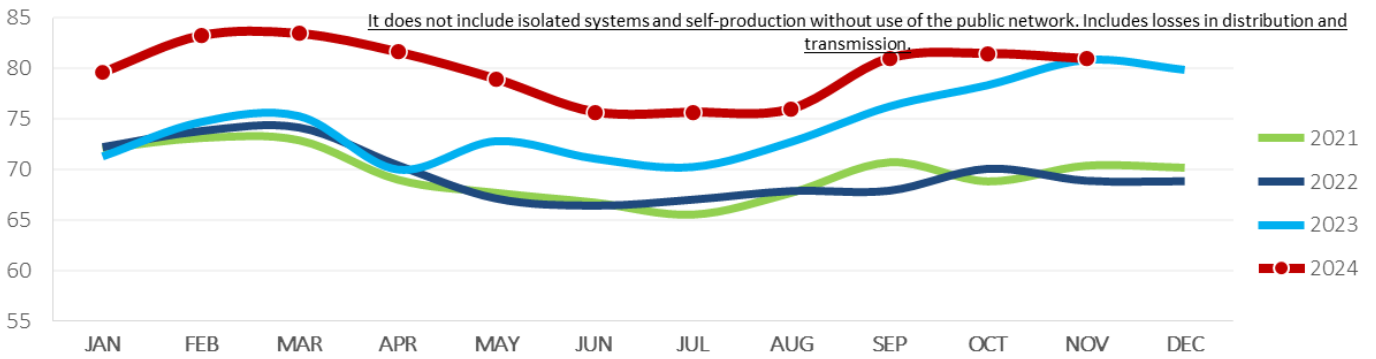
For the first eleven months of the year, 5,294 MW of installed centralized solar capacity came into operation.

The DG's growth is a result of public policies to encourage renewable energy sources and distributed micro and mini generation, such as Law No. 13,203/2015 and Law No. 14,300/2022, which is considered a legal framework for distributed generation in Brazil.

SPECIFICATION	NOVEMBER					
	IN THE MONTH			YTD / YTD Previous Year		
	2024	2023	Δ% 24/23	2024	2023	Δ% 24/23
OIL						
PRODUCTION - with Shale Oil and NGL(10 ³ b/d)	3,380	3,760	-10.1	3,427	3,464	-1.1
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	78.51	91.31	-14.0	84.56	85.09	-0.6
OIL PRODUCTS						
TOTAL CONSUMPTION (10 ³ b/day)	2,329	2,378	-2.1	2,369	2,396	-1.1
hereof: DIESEL with biodiesel - (10 ³ b/day)	1,160	1,193	-2.7	1,169	1,169	-0.1
hereof: GASOLINE C (10 ³ b/day)	767	766.6	0.0	753	788	-4.4
CONSUMER PRICE - DIESEL (R\$/l)	5.98	6.08	-1.6	5.92	5.74	3.1
CONSUMER PRICE - GASOLINE C (R\$/l)	6.10	5.63	8.3	5.91	5.49	7.5
CONSUMER PRICE - LPG (R\$/13 lg)	106.84	101.38	5.4	103.24	104.51	-1.2
NATURAL GAS (d)						
PRODUCTION (10 ⁶ m ³ /day)	158	162	-2.8	152	149	2.2
IMPORTS (10 ⁶ m ³ /day)	28.5	20.5	38.9	23.2	17.6	32.2
NON-UTILIZED AND REINJECTION (106 m ³ /day)	91.3	89.3	2.2	87.0	80.8	7.7
AVAILABILITY FOR CONSUMPTION (10 ⁶ m ³ /day)	94.8	93.4	1.6	88.7	86.0	3.2
INDUSTRIAL CONSUMPTION (10 ⁶ m ³ /day) (c)	40.1	39.0	2.8	39.0	39.7	-1.7
POWER GENERATION CONS. (10 ⁶ m ³ /day)(d)	25.6	19.6	30.8	18.2	12.1	50.4
INDUSTRIAL PRICE SE (b) (US\$/MMBtu) - consumption range of 20,000 m ³ /day (c)	18.72	19.29	-3.0	19.50	21.01	-7.2
MOTOR PRICE SE (US\$/MMBtu) (c)	23.23	27.00	-14.0	24.76	27.57	-10.2
RESIDENTIAL PRICE SE (US\$/MMBtu) (c)	47.40	52.88	-10.4	49.61	52.99	-6.4
ELECTRICITY						
NATIONAL INTERCONNECTED SYSTEM	80,981	80,876	0.1	79,776	73,955	7.9
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	45,030	46,273	-2.7	45,185	42,073	7.4
SOUTH POWER LOAD (MWavg)	14,226	13,393	6.2	13,703	12,628	8.5
NORTHEAST POWER LOAD (MWavg)	13,499	13,566	-0.5	13,083	12,140	7.8
NORTH POWER LOAD (MWavg)	8,226	7,644	7.6	7,804	7,115	9.7
TOTAL CONSUMPTION (TWh) (a)	47.3	46.4	2.0	46.6	44.0	6.1
RESIDENTIAL	14.8	14.8	0.4	14.7	13.6	8.1
INDUSTRIAL	16.8	16.0	5.5	16.5	15.6	5.2
COMMERCIAL	8.7	8.6	1.2	8.6	8.1	6.1
OTHER SECTORS	6.9	7.0	-1.6	6.9	6.7	3.8
PLANTS ENTRY INTO OPERATING (MW)	930	639	45.5	10,252	8,552	19.9
RESIDENTIAL PRICE (R\$/MWh)	938	872	7.6	873	834	4.7
COMMERCIAL PRICE (R\$/MWh)	925	837	10.6	869	802	8.3
INDUSTRIAL PRICE (R\$/MWh)	920	803	14.5	852	770	10.7
ETHANOL AND BIODIESEL						
BIODIESEL PRODUCTION (10 ³ b/d)	171	147	16.4	158	128	23.9
MOTOR ETHANOL CONSUMPTION (10 ³ b/d)	585	542	7.8	573	480	19.4
ETHANOL EXPORTS (10 ³ b/d)	22	41	-45.8	33	42	-19.8
HYDRATED ETHANOL PRICE (R\$/l)	4.05	3.56	13.8	3.84	3.77	1.7
COAL						
ELECTRICITY GENERATION (MWavg)	1319	1209	9.1	1023	880	16.3
IMPORT PRICE (US\$ FOB/t)	148.92	197.41	-24.6	179.98	219.45	-18.0
NUCLEAR ENERGY						
ELECTRICITY GENERATION - (GWh)	962	621	54.9	1,865	1,656	12.7
INDUSTRIAL SECTORS						
STEEL PRODUCTION (10 ³ t/day)	92	91	1.4	93	88	5.9
ALUMINIUM PRODUCTION (10 ³ t/day) (c)	3.1	2.8	9.0	3.0	2.7	8.8
IRON ORE EXPORTS (10 ³ t/day)	1,047	979	6.9	1,001	950	5.3
PELLETS EXPORTS (10 ³ t/day)	69	68	1.8	73	66	10.3
BIG IRON EXPORTS (10 ³ t/day)	6.8	6.3	7.1	10.3	10.4	-1.1
PAPER PRODUCTION (10 ³ t/day)	30.9	31.0	-0.1	31.0	28.8	7.7
PULP PRODUCTION (10 ³ t/day)	75.5	67.6	11.7	69.4	66.0	5.2
SUGAR PRODUCTION (10 ³ t/day)	91.6	144.1	-36.5	129.1	132.1	-2.2
SUGAR EXPORTS (10 ³ t/day)	113	124	-9.0	108	92	17.1

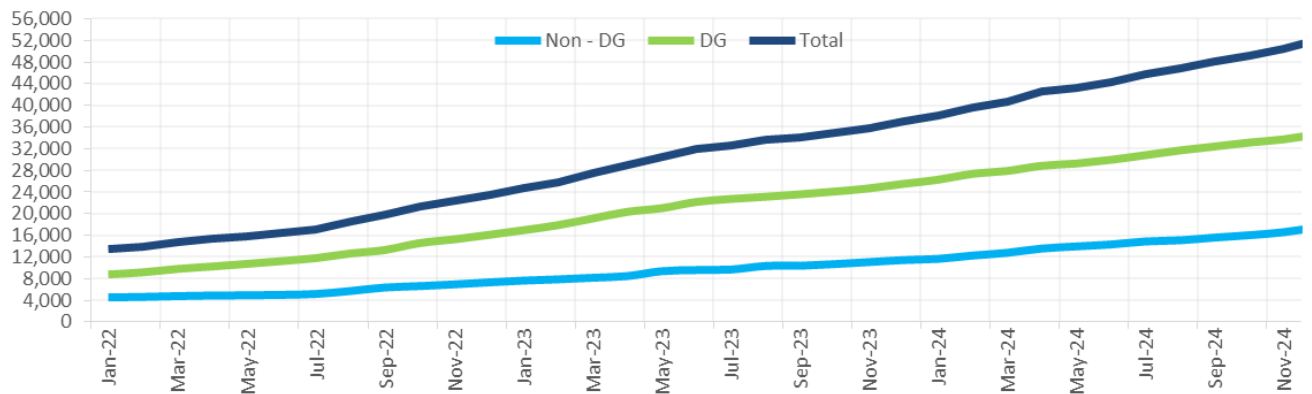
(a) The traditional autoproducers (consumers that do not use public grid) is not included. (b) SE is the acronym of Southeast
(c) October Data (d) Estimated

NATIONAL INTERCONNECTED SYSTEM POWER LOAD (GWAVG)



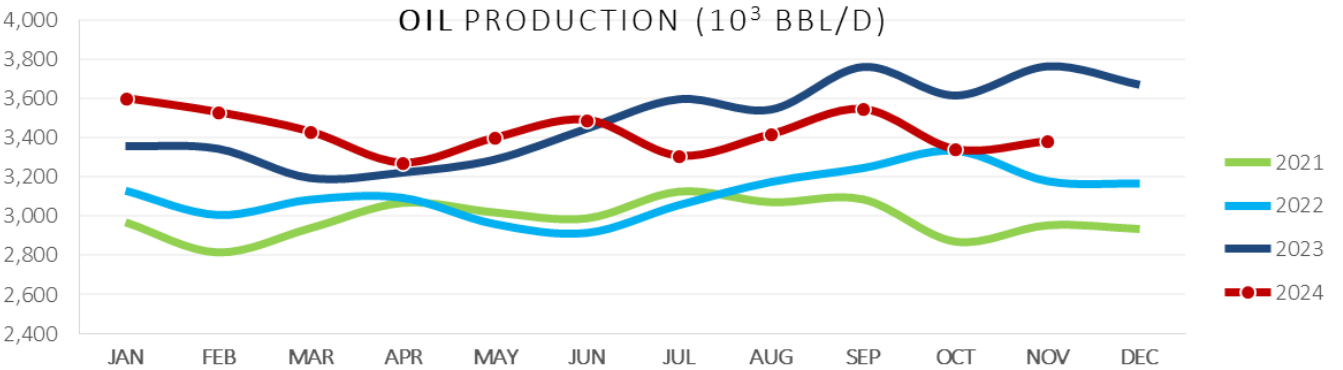
Source: National Electric System Operator (ONS)

PHOTOVOLTAIC SOLAR INSTALLED CAPACITY (MW)



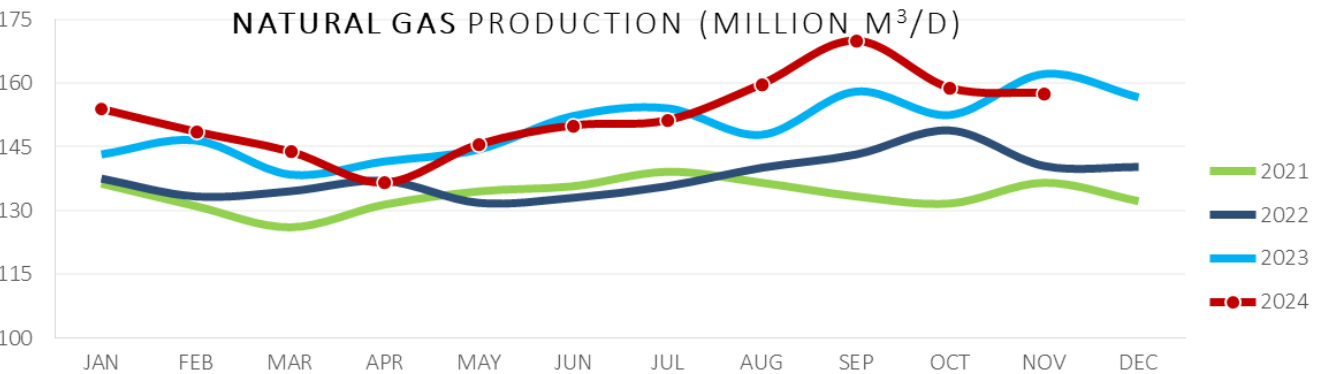
Source: Electric Energy Secretary of Ministry of Mines and Energy

OIL PRODUCTION (10³ BBL/D)



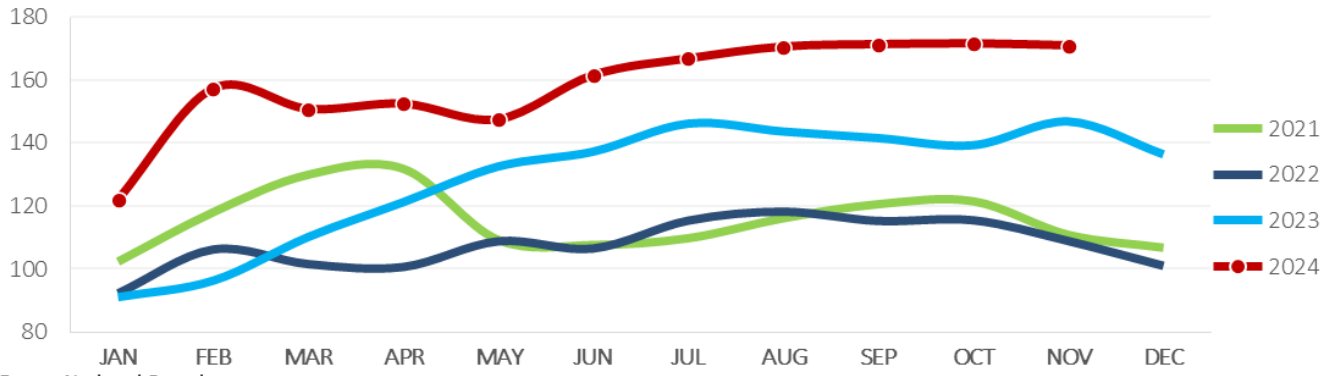
Source: National Petroleum Agency

NATURAL GAS PRODUCTION (MILLION M³/D)



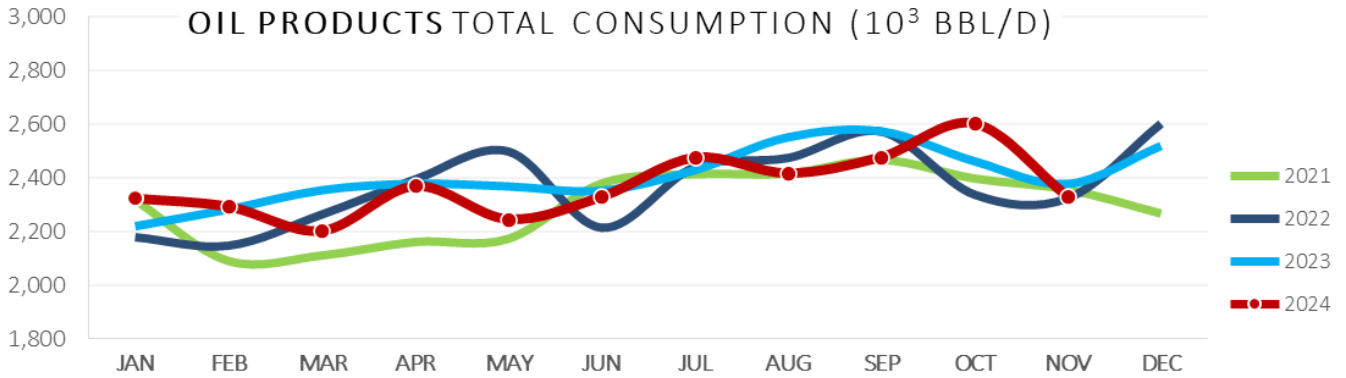
Source: National Petroleum Agency

BIODIESEL PRODUCTION(10³ BBL/D)



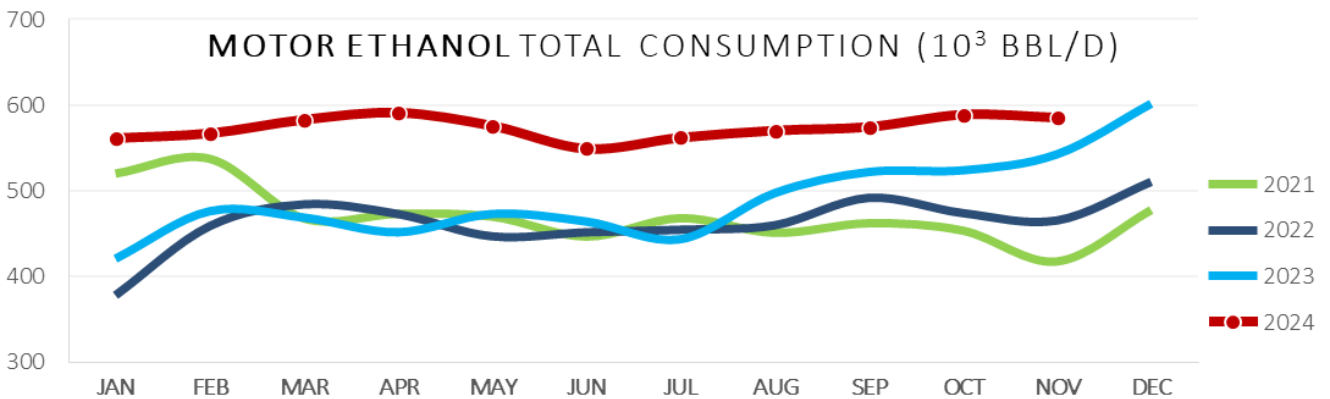
Fonte: National Petroleum agency

OIL PRODUCTS TOTAL CONSUMPTION (10³ BBL/D)



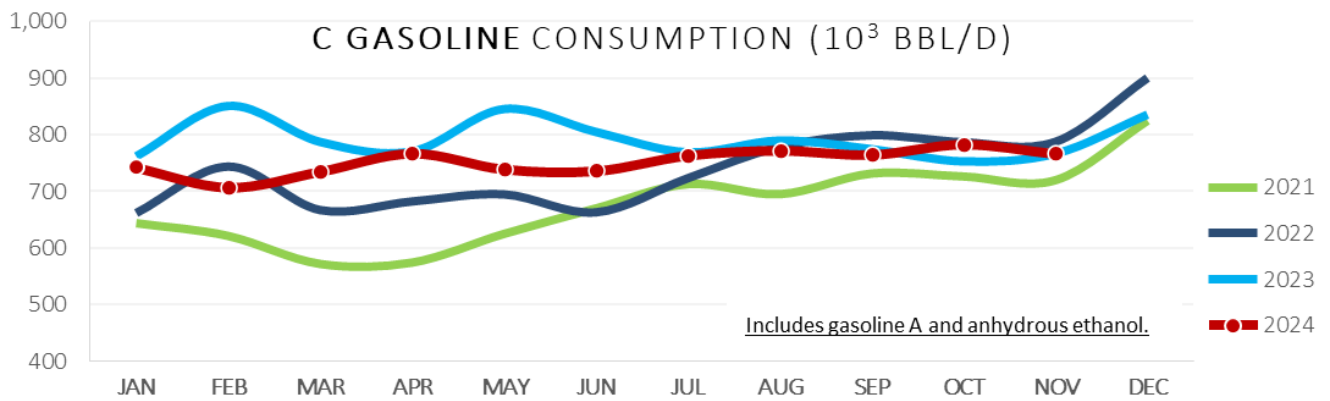
Source: National Petroleum Agency

MOTOR ETHANOL TOTAL CONSUMPTION (10³ BBL/D)



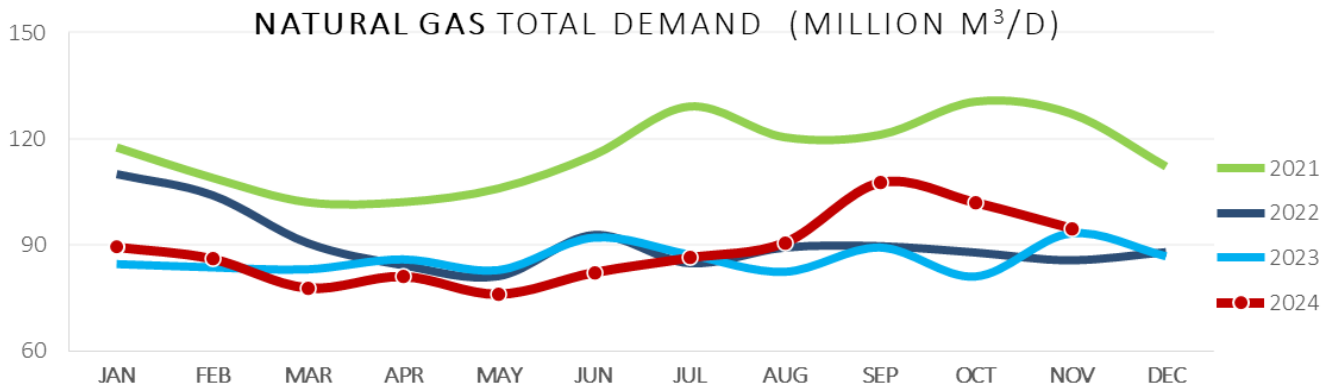
Source: National Petroleum Agency

C GASOLINE CONSUMPTION (10³ BBL/D)

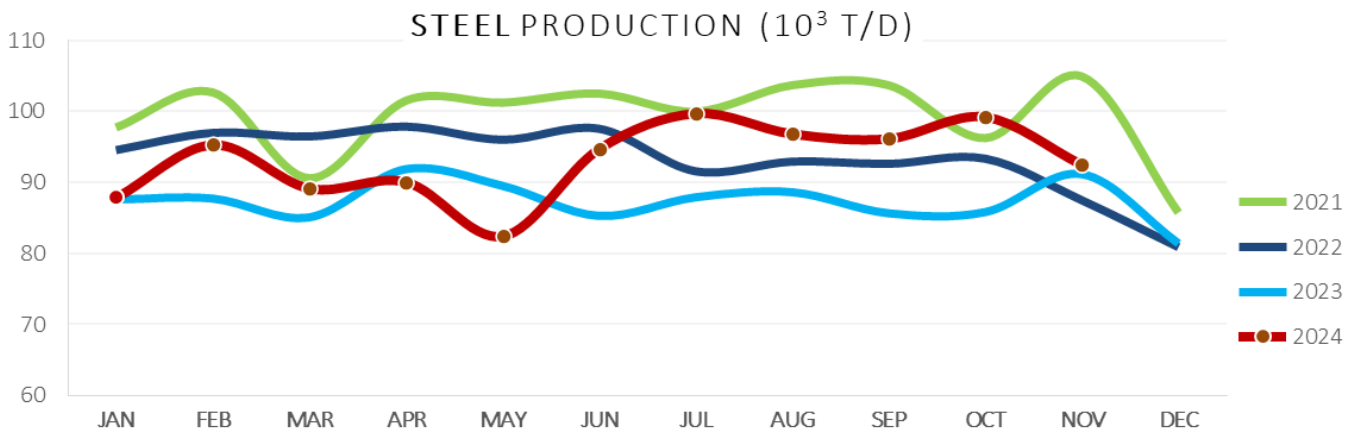


Includes gasoline A and anhydrous ethanol.

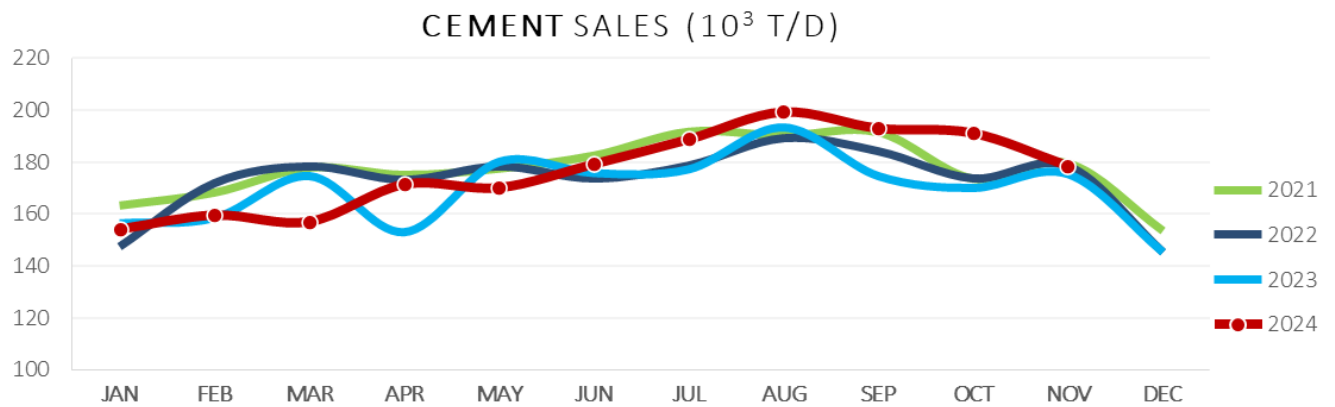
Source: National Petroleum Agency



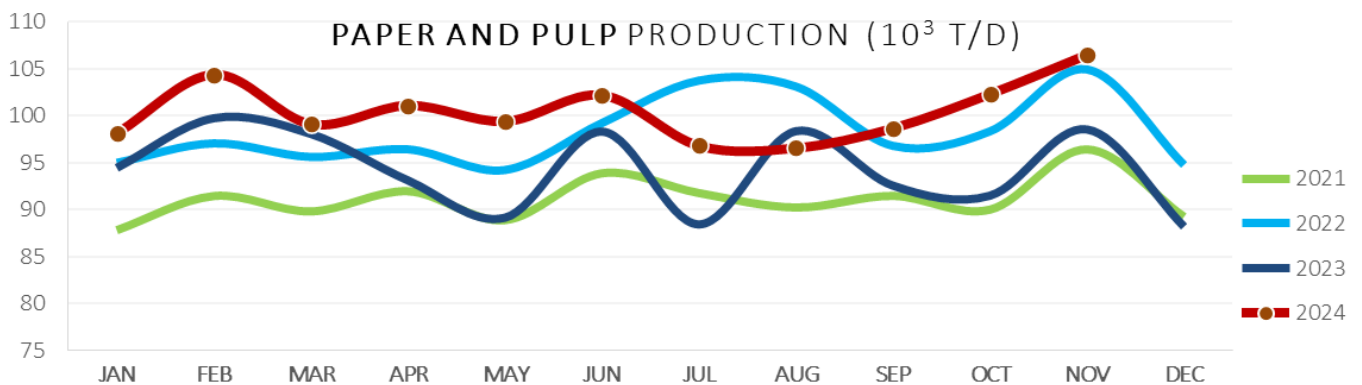
Sources: National Petroleum Agency (ANP) and National Electric System Operator (ONS)



Source: Brazil Steel Institute



Source: National Cement Industry Union



Source: Brazilian Tree Industry (IBA)

Consumer Prices - Average from 2020 to November 2024 (R\$/boe)



METHODOLOGICAL NOTES

The bulletin reports the monitoring of energy and non-energy variables that allow estimating the monthly and accumulated behavior of the total energy demand in Brazil.

Total gas demand = domestic production (+) import (-) unused (-) reinjection.

¹ Domestic Energy Supply (DES), represents all the energy made available to meet the national demand for energy. For the year 2023 the value is from the National Energy Balance - BEN.

² The Domestic Electricity Supply (DELS) accounts for the portions of generation from Centralized Generation, Distributed Generation (DG), Autoproduction of Energy (APE), Isolated Systems and Electric Energy Exchange. For the year 2023 the value is from BEN.

The Monthly Energy Bulletin uses information and data obtained in the Brazilian energy sector to calculate and estimate the behavior of relevant energy indicators.



[Access the interactive dashboard](#)

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