

MINISTRY OF
MINES AND ENERGY



MONTHLY ENERGY BULLETIN BRAZIL

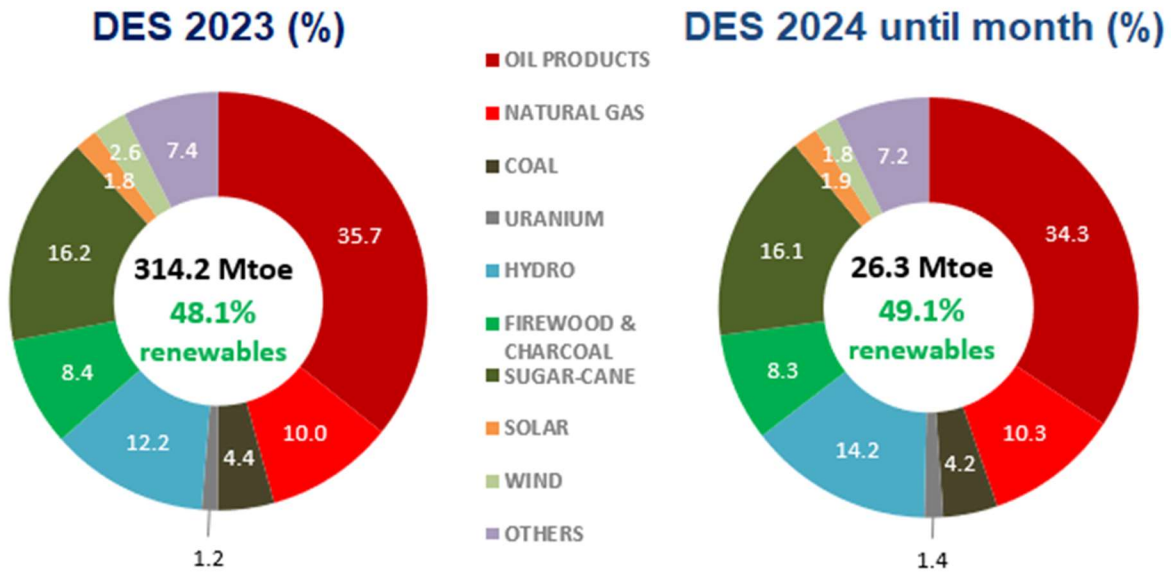
May2024 Edition
January 24

DOMESTIC ENERGY SUPPLY

Regarding the data up to January 2024, renewables share in the Domestic Energy Supply (DES)¹ is expected to increase to 49.1%, higher than expected for last year (48.1%), mainly due to increased hydroelectric power generation.

For sugarcane production, according to the most current survey by the Brazilian Supply Company (Conab), it is estimated that there will be an increase of 24.1% in relation to the 2022/2023 harvest. For ethanol produced from sugar cane and corn, is expected an increase of 15.0% in production.

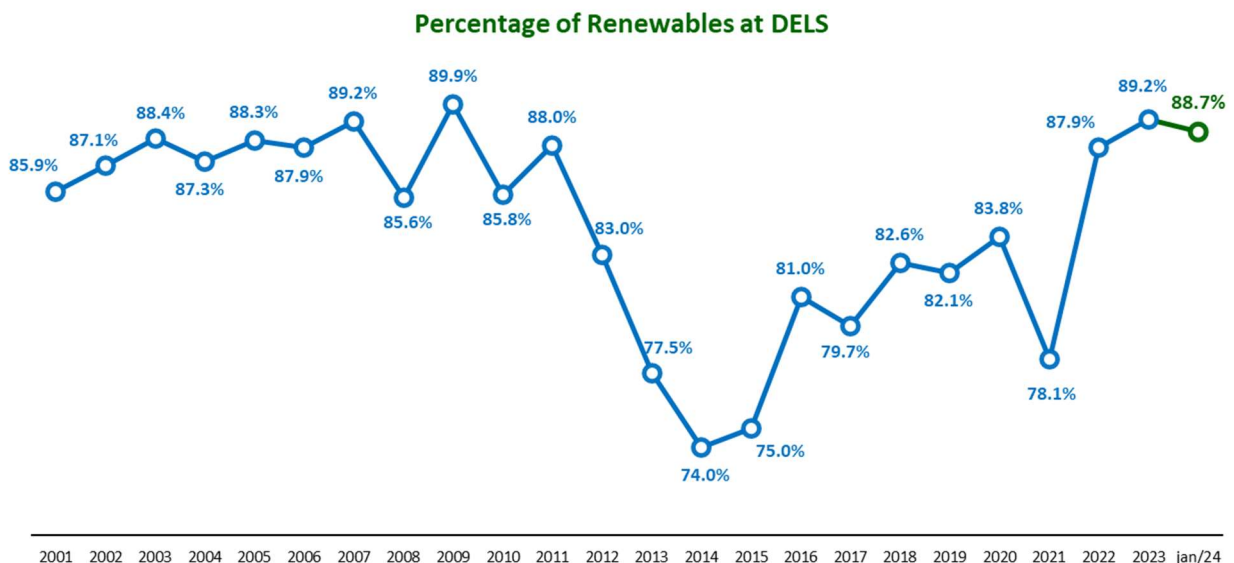
MORE RENEWABLE DOMESTIC ENERGY SUPPLY



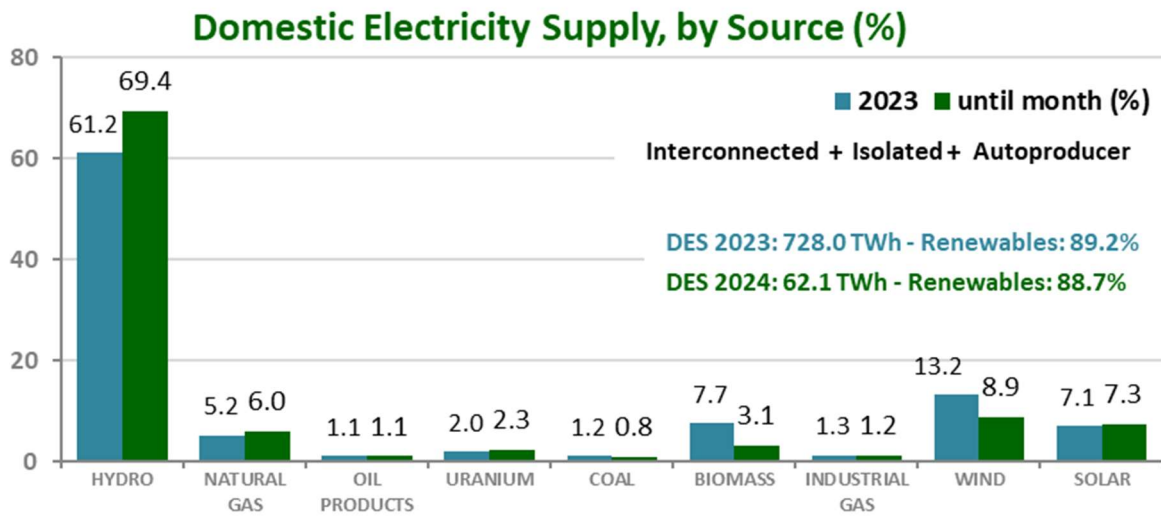
*OTHER: includes other renewable and non-renewable

Regarding the proportion of renewables in the Domestic Electricity Supply (DELS), it was found that 88.7% were obtained from renewable sources up to January, reaching a cumulative value of 62.1 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.

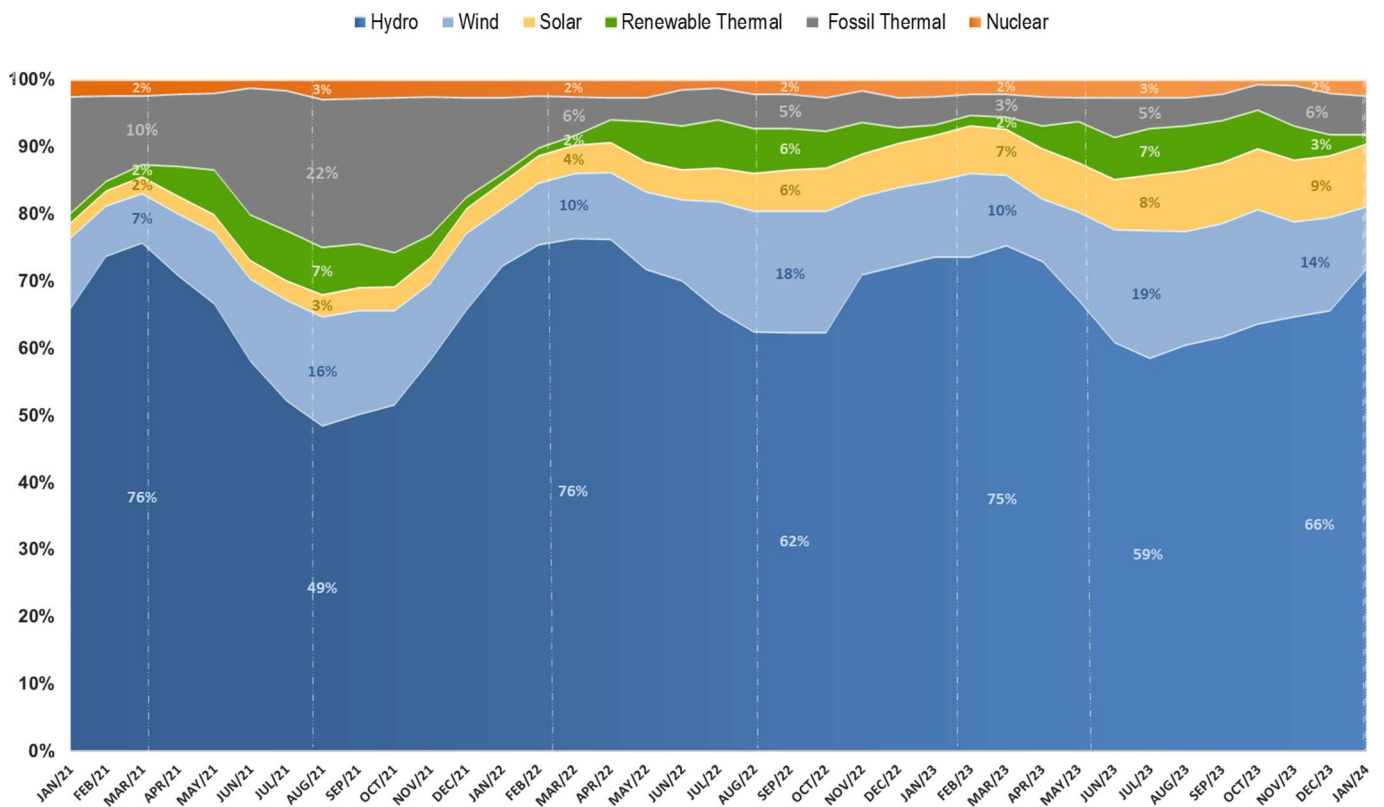


For the first month of the year, compared to the same period of the previous year (accumulated in the year) there was a 20% increase in generation for centralized solar and 14% decrease for wind. Brazilian hydro energy also grew, by around 2%.



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 in solar distributed generation.

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



HIGHLIGHTS IN JANUARY 2024

Oil and gas growing

Oil and gas production increased, rising 7.3% and 7.5% respectively, YTD.

Steel and Mining

Year-to-date, steel production had a small increase of 0.4%, and iron ore exports rose by 17.1%. Meanwhile, pellet exports increased by 38.4%.

Hydraulic supply growing

The supply of hydraulic energy increased by 2.1%, YTD. The monthly average was 56.450,0 MWavg. Itaipu's supply, for the same period, increased 25.6%.

Falling wind energy supply

Wind energy supply, up to January 2024, decreased by 14%, YTD. For the first month of this year 422 MW of wind power plants came into operation, a value 51% lower than the same period of the last year.

International power energy exchange

In January 2024, Brazil exported 444 MWavg to Argentina and 9 MWavg to Uruguay.

Natural gas availability falling

Gas consumption availability fell by 5.8%, YTD.

Coal for electricity power generation

There was an increase of 10.8% for coal public power generation, YTD.

Automotive Ethanol Consumption on the Rise

Following the trend observed in previous months, there was a 31.1% increase in automotive ethanol consumption compared to January of the previous year.

Despite the reduction in the regular gasoline use (-2.6%), the overall energy consumption in light vehicles using Otto cycle fuels (gasoline, ethanol, and natural gas) still showed an increase of 9.7% year-to-date. Diesel consumption also increased by 6.4%.

This demonstrates the enormous potential of Brazilian ethanol in the decarbonization process of the transportation sector, which has beneficial consequences for the environment.

Falling Hydrated Ethanol Prices

Hydrated ethanol price decreased by 11.9%, while regular gasoline price increased by about 10.3% , YTD.

Rising Biodiesel Production

Biodiesel production increased by 34.0% over the year.

Starting in April 2023, the mandatory biodiesel blend in diesel oil was increased to 12%, with a progressive increase planned to reach 15% by 2026. CNPE Resolution No. 3, dated March 20, 2023, established new guidelines for the evolution of the mandatory addition of biodiesel to diesel sold to the final consumer.

In December 2023, the CNPE approved the advancement of the 14% biodiesel blend mandate to March 2024 and the 15% blend mandate to March 2025. Biodiesel, as a replacement for fossil diesel, contributes to reducing greenhouse gas emissions and decreases the need for importing fossil fuel.

Electricity consumption in high

Electricity consumption in the residential sector grew 15.0% compared to January 2023. Industrial consumption increased 6.9% while commercial consumption grew 10.3%.

Electricity tariffs

The residential tariff increased by 10.9%, while for the commercial sector, there was an increase of 10.5%, and for the industrial sector, an increase of 13.9%.

Solar distributed generation installed capacity (DG) rising

The growing in solar DG installed capacity in Brazil is still a highlight and has increased 54.7% compared to January 2023. The centralized solar installed capacity (non-GD) also increases, with a 51.5% growth compared to the same month of the previous year.

For the first month of the year, 198.0 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.

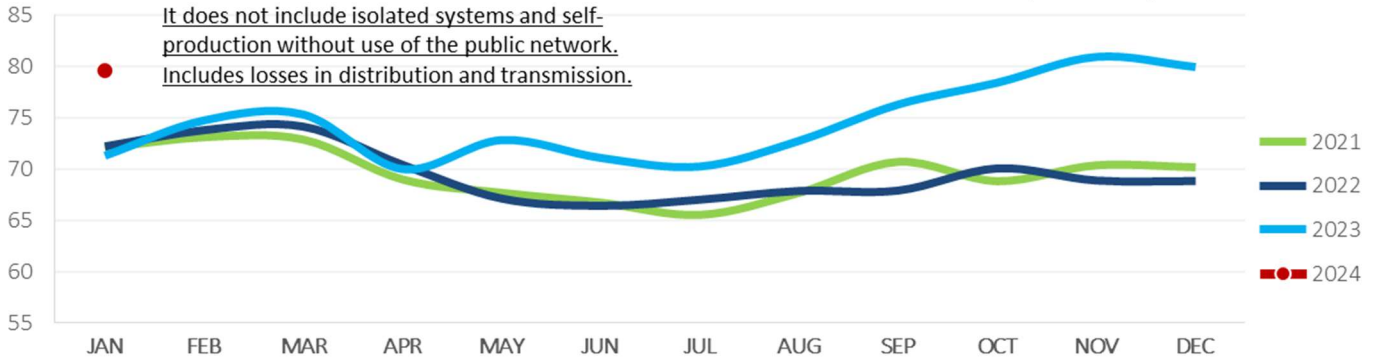
SPECIFICATION	JANUARY					
	IN THE MONTH			ACCUMULATED IN THE YEAR		
	2024	2023	Δ% 24/23	2024	2023	Δ% 24/23
OIL						
PRODUCTION - with Shale Oil and NGL(10 ³ b/d)	3,600	3,354	7.3	3,600	3,354	7.3
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	79.53	90.07	-11.7	79.53	90.07	-11.7
OIL PRODUCTS						
TOTAL CONSUMPTION (10 ³ b/day)	2,483	2,263	9.7	2,483	2,263	9.7
hereof: DIESEL with biodiesel - (10 ³ b/day)	940	883	6.4	940	883	6.4
hereof: GASOLINE C (10 ³ b/day)	742	761.9	-2.6	742	762	-2.6
CONSUMER PRICE - DIESEL (R\$/l)	5.86	6.33	-7.4	5.86	6.33	-7.4
CONSUMER PRICE - GASOLINE C (R\$/l)	5.57	5.05	10.3	5.57	5.05	10.3
CONSUMER PRICE - LPG (R\$/13 kg)	100.88	108.27	-6.8	100.88	108.27	-6.8
NATURAL GAS (d)						
PRODUCTION (10 ⁶ m ³ /day)	154	143	7.5	154	143	7.5
IMPORTS (10 ⁶ m ³ /day)	21.5	18.2	17.9	21.5	18.2	17.9
NON-UTILIZED AND REINJECTION (10 ⁶ m ³ /day)	85.9	76.8	11.7	85.9	76.8	11.7
AVAILABILITY FOR CONSUMPTION (10 ⁶ m ³ /dav)	89.5	84.6	5.8	89.5	84.6	5.8
INDUSTRIAL CONSUMPTION (10 ⁶ m ³ /day) (c)	36.8	39.4	-6.6	39.5	41.4	-4.7
POWER GENERATION CONS. (10 ⁶ m ³ /day) (d)	15.7	11.7	34.4	15.7	11.7	34.4
INDUSTRIAL PRICE SE (b) (US\$/MMBtu) - consumption range of 20,000 m ³ /day (c)	20.70	18.78	10.2	20.77	20.76	0.0
MOTOR PRICE SE (US\$/MMBtu) (c)	27.65	19.83	39.4	27.49	20.63	33.3
RESIDENTIAL PRICE SE (US\$/MMBtu) (c)	52.69	50.16	5.0	53.02	48.82	8.6
ELECTRICITY						
NATIONAL INTERCONNECTED SYSTEM	79,582	71,291	11.6	79,582	71,291	11.6
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	45,248	40,455	11.8	45,248	40,455	11.8
SOUTH POWER LOAD (MWavg)	13,831	12,996	6.4	13,831	12,996	6.4
NORTHEAST POWER LOAD (MWavg)	13,262	11,513	15.2	13,262	11,513	15.2
NORTH POWER LOAD (MWavg)	7,241	6,327	14.4	7,241	6,327	14.4
TOTAL CONSUMPTION (TWh) (a)	46.7	42.4	10.2	46.7	42.4	10.2
RESIDENTIAL	15.3	13.3	15.0	15.4	13.3	15.7
INDUSTRIAL	15.5	14.5	6.9	15.5	14.5	6.9
COMMERCIAL	8.9	8.1	10.3	8.9	8.1	10.3
OTHER SECTORS	6.9	6.5	6.3	6.9	6.5	6.3
PLANTS ENTRY INTO OPERATING (MW)	621	1274	-51.3	621	1,274	-51.3
RESIDENTIAL PRICE (R\$/MWh)	873	787	10.9	873	787	10.9
COMMERCIAL PRICE (R\$/MWh)	836	757	10.5	836	757	10.5
INDUSTRIAL PRICE (R\$/MWh)	837	735	13.9	837	735	13.9
ETHANOL AND BIODIESEL						
BIODIESEL PRODUCTION (10 ³ b/d)	122	91	34.0	122	91	34.0
MOTOR ETHANOL CONSUMPTION (10 ³ b/d)	552	421	31.1	552	421	31.1
ETHANOL EXPORTS (10 ³ b/d)	52	52	1.0	52	52	1.0
HYDRATED ETHANOL PRICE (R\$/l)	3.42	3.88	-11.9	3.42	3.88	-11.9
COAL						
ELECTRICITY GENERATION (MWavg)	595	537	10.8	595	537	10.8
IMPORT PRICE (US\$ FOB/t)	202.33	247.08	-18.1	202.33	247.08	-18.1
NUCLEAR ENERGY						
ELECTRICITY GENERATION - (GWh)	1948	2007	-2.9	1,948	2,007	-2.9
INDUSTRIAL SECTORS						
STEEL PRODUCTION (10 ³ t/day)	88	88	0.4	88	88	0.4
ALUMINIUM PRODUCTION (10 ³ t/day) (c)	2.9	2.6	9.4	2.8	2.2	25.0
IRON ORE EXPORTS (10 ³ t/day)	868	741	17.1	868	741	17.1
PELLETS EXPORTS (10 ³ t/day)	76	55	38.4	76	55	38.4
BIG IRON EXPORTS (10 ³ t/day)	13.8	7.6	80.5	13.8	7.6	80.5
PAPER PRODUCTION (10 ³ t/day)	30.1	29.5	2.3	30.1	29.5	2.3
PULP PRODUCTION (10 ³ t/day)	58.1	64.7	-10.2	65.3	68.1	-4.1
SUGAR PRODUCTION (10 ³ t/day)	20.1	16.3	23.5	20.1	16.3	23.5
SUGAR EXPORTS (10 ³ t/day)	107	66	62.8	107	66	62.8

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

(c) December Data

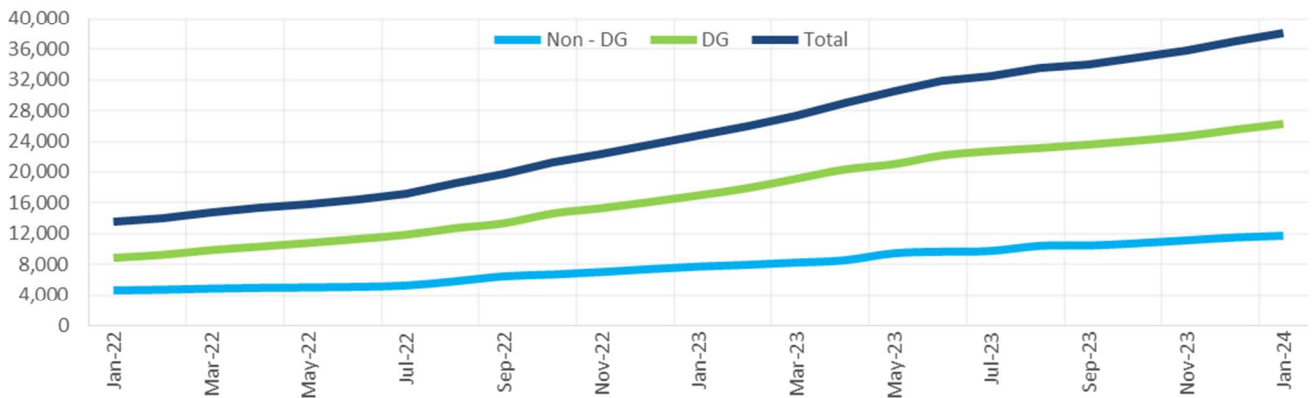
(d) Estimated Data

NATIONAL INTERCONNECTED SYSTEM POWER LOAD (GWAVG)



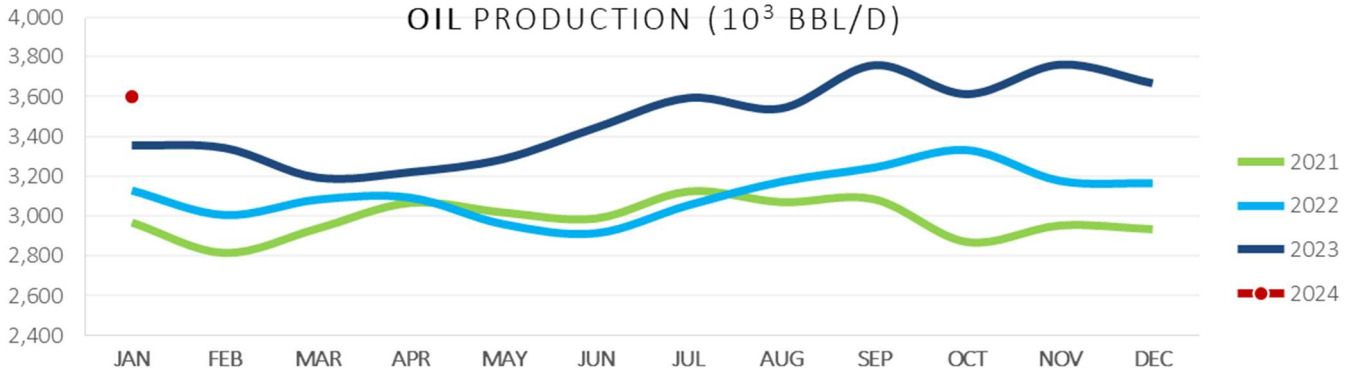
Source: National Electric System Operator (ONS)

PHOTOVOLTAIC SOLAR INSTALLED CAPACITY (MW)



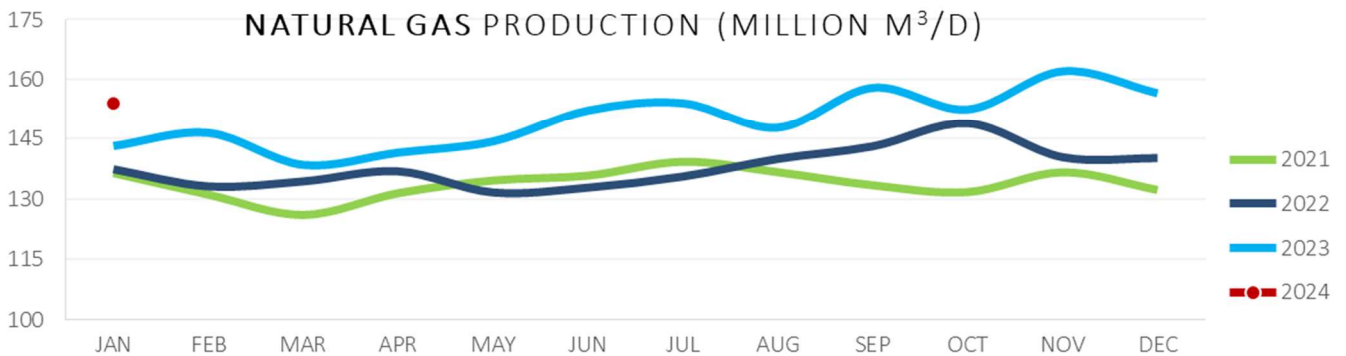
Source: Electric Energy Secretary of Ministry of Mines and Energy

OIL PRODUCTION (10³ BBL/D)



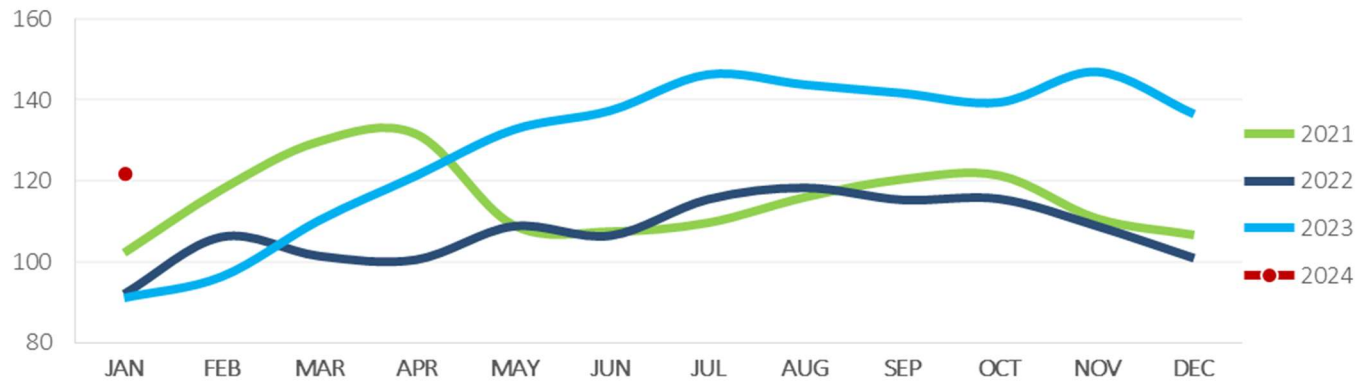
Source: National Petroleum Agency

NATURAL GAS PRODUCTION (MILLION M³/D)



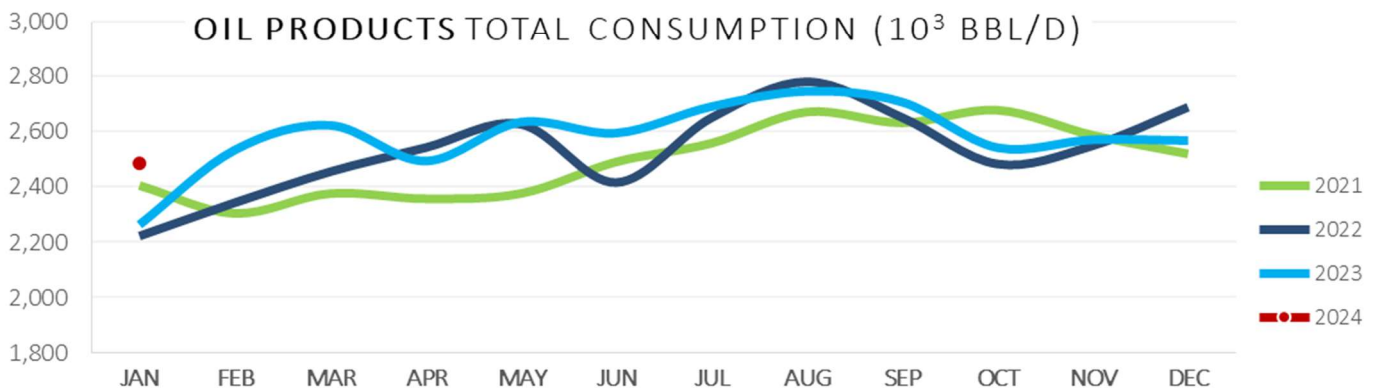
Source: National Petroleum Agency

BIODIESEL PRODUCTION (10³ BBL/D)



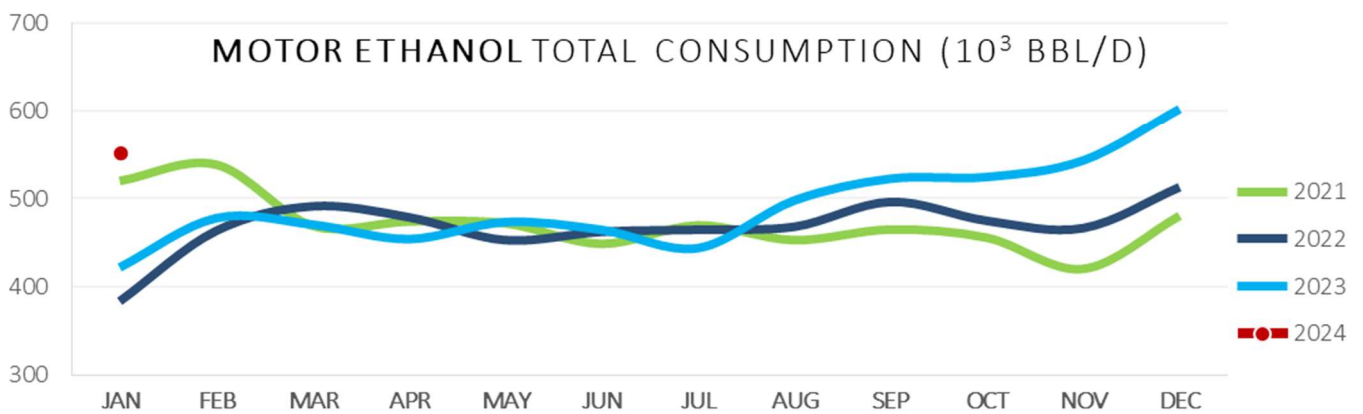
Fonte: National Petroleum agency

OIL PRODUCTS TOTAL CONSUMPTION (10³ BBL/D)



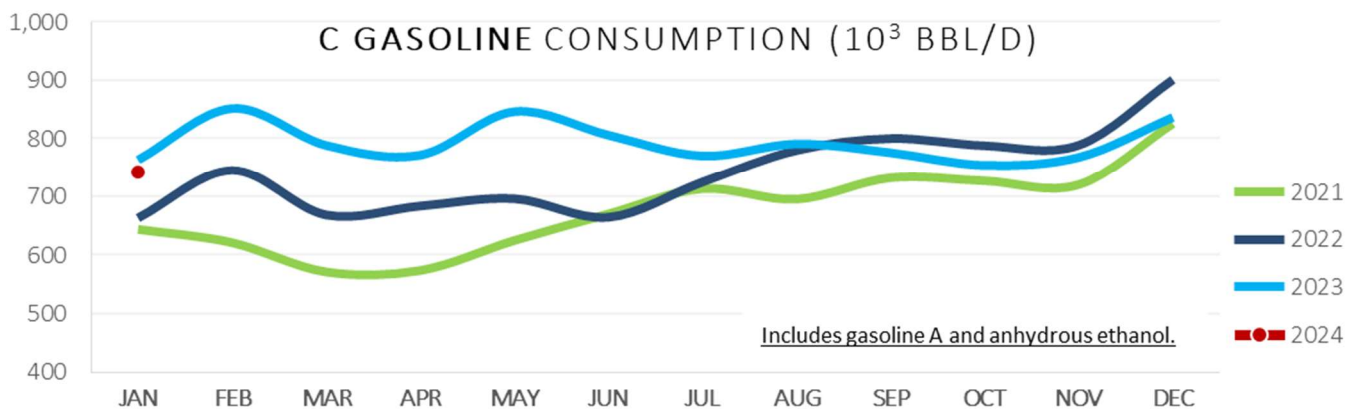
Source: National Petroleum Agency

MOTOR ETHANOL TOTAL CONSUMPTION (10³ BBL/D)

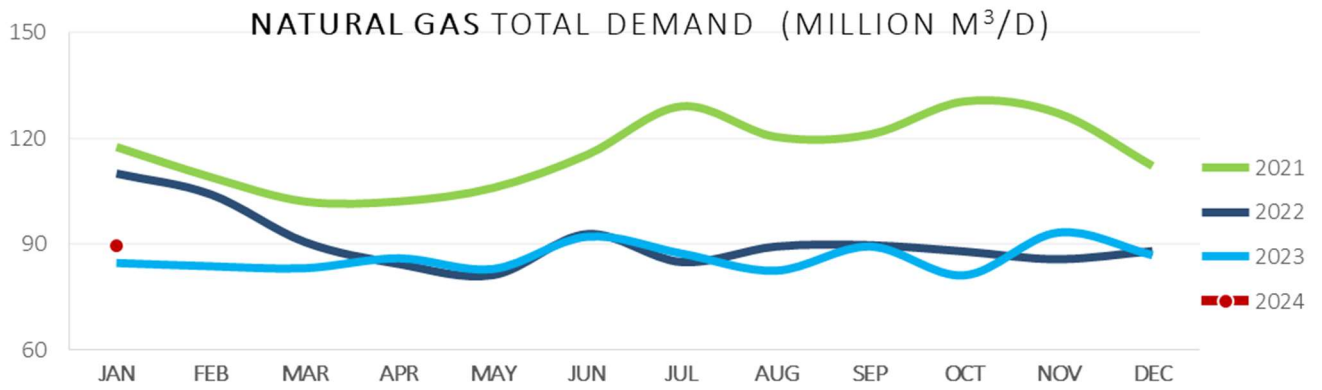


Source: National Petroleum Agency

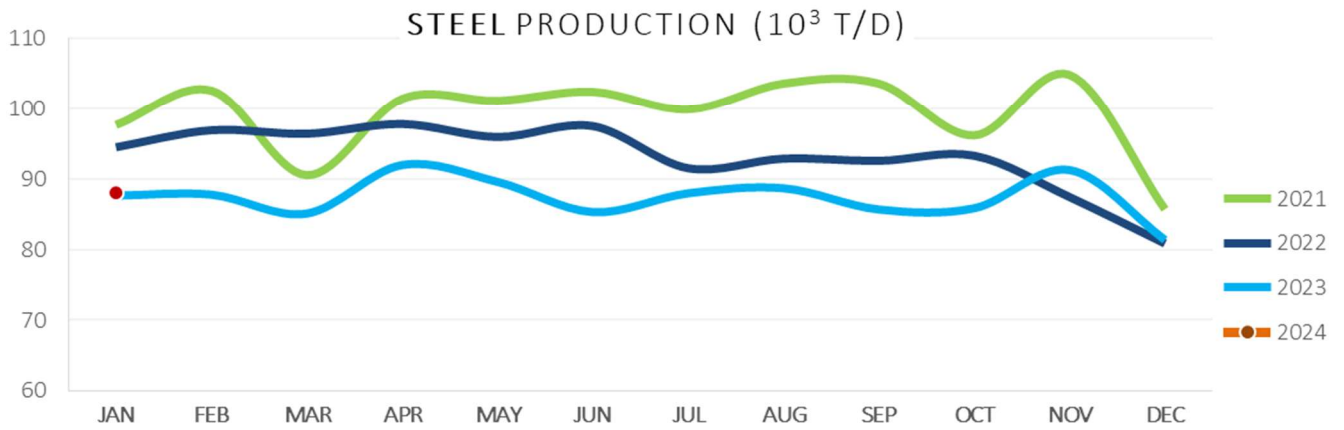
C GASOLINE CONSUMPTION (10³ BBL/D)



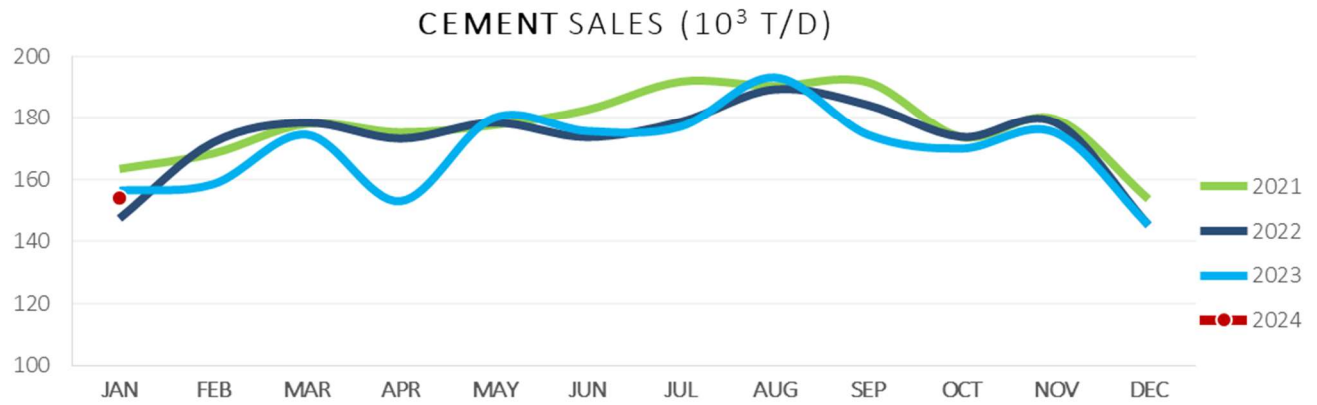
Source: National Petroleum Agency



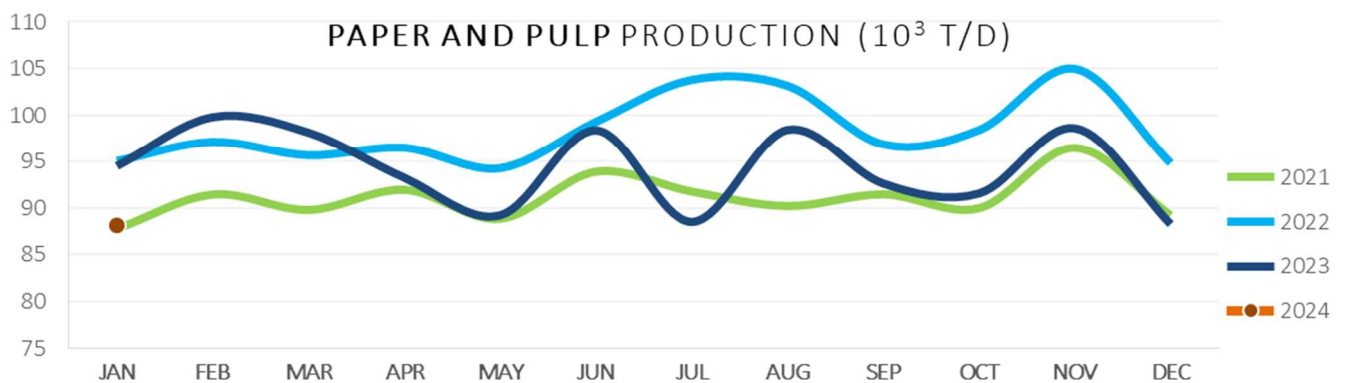
Sources: National Petroleum Agency (ANP) and National Electric System Operator (ONS)



Source: Brazil Steel Institute

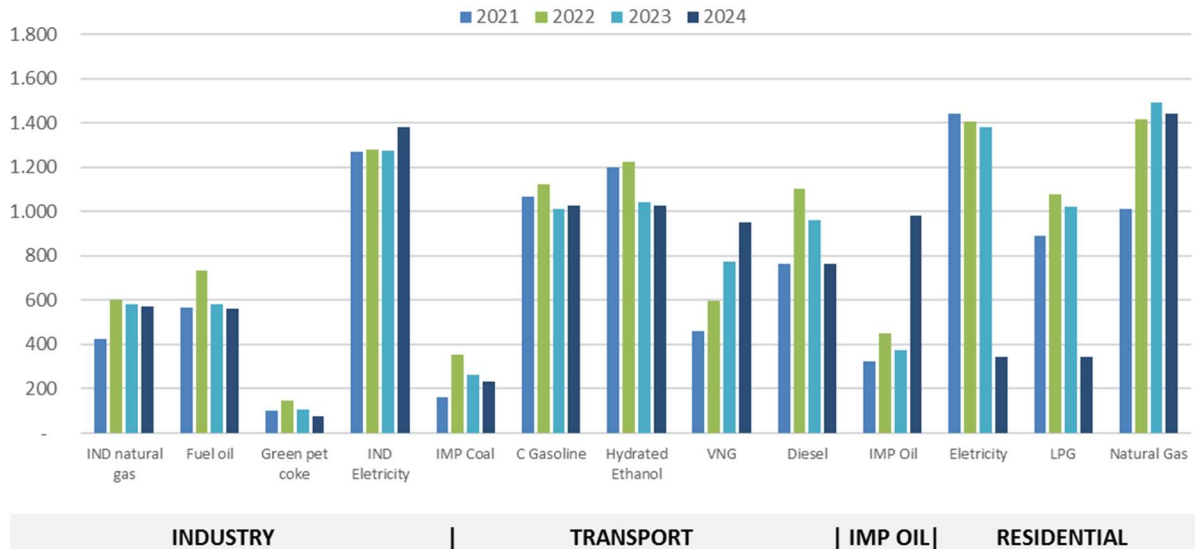


Source: National Cement Industry Union



Source: Brazilian Tree Industry (IBA)

Consumer Prices - Average from 2020 to January 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 an estimate. This value is consolidated with the publication of the National Energy Balance.

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 an estimate. This value is consolidated with the publication of the National Energy Balance.

The 2022 data from the DES and DELS were consolidated by the 2023 National Energy Balance.

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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