

MINISTRY OF  
MINES AND ENERGY



# MONTHLY ENERGY BULLETIN BRAZIL

July 2024 Edition

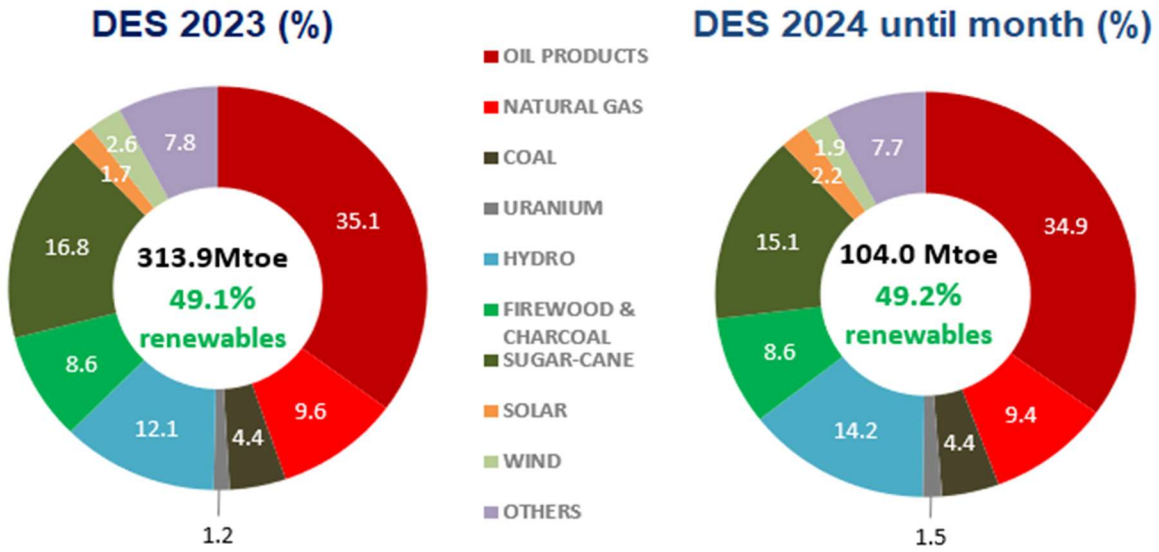
April 24

# DOMESTIC ENERGY SUPPLY

Regarding the data up to April 2024, renewables share in the Domestic Energy Supply (DES)<sup>1</sup> is expected to increase to 49.2%, slightly above the previous year (49.1%), mainly due to the greater generation of hydraulic energy, despite the smaller share of wind energy and sugarcane products, a fact that is common at the beginning of the year, due to the sugar cane harvest.

For the sugarcane production, according to the most current survey by the Brazilian Supply Company (Conab), it is estimated that there will be an increase of 1.3% compared to the 2023/2024 harvest. For ethanol produced from sugar cane and corn, it is expected an increase by 15.0%.

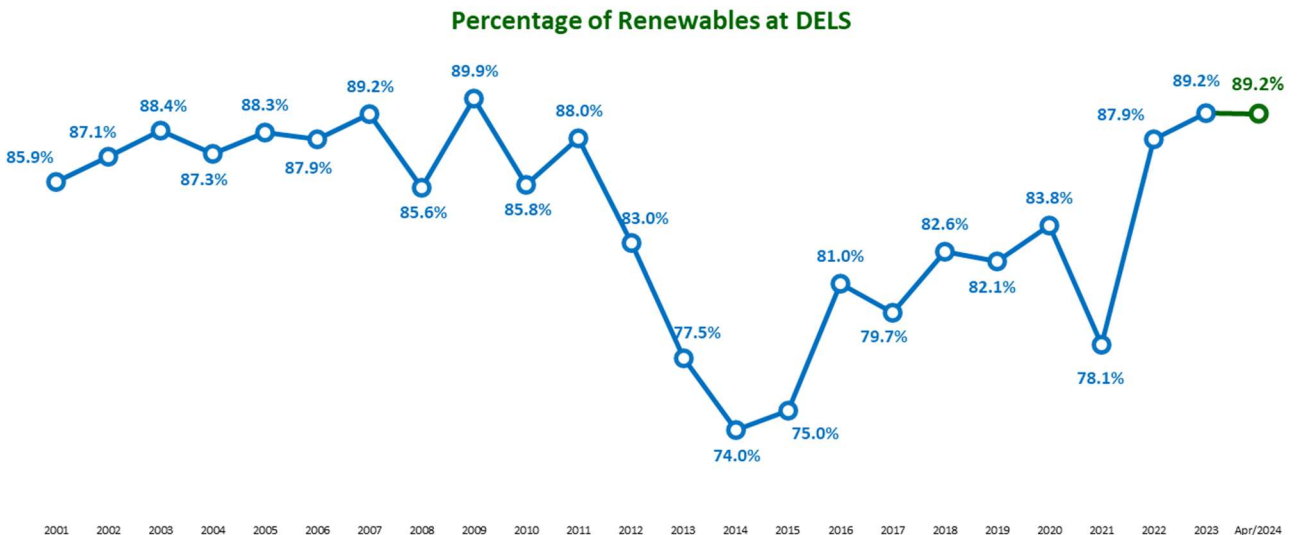
## MORE RENEWABLE DOMESTIC ENERGY SUPPLY IN 2024



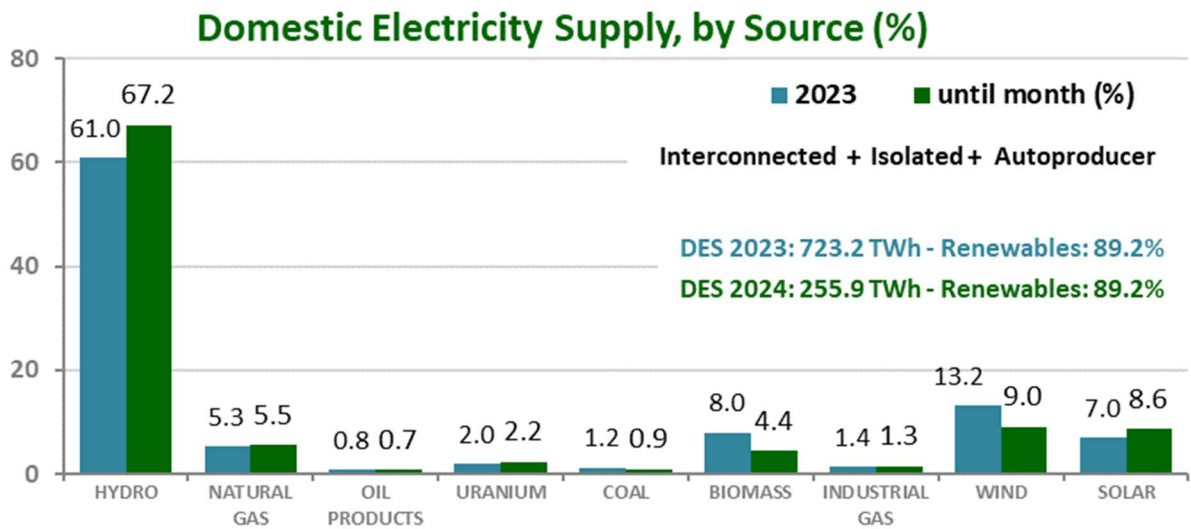
\*OTHER: includes other renewable and non-renewable

In 2024, regarding the proportion of renewables in the Domestic Electricity Supply (DELS)<sup>2</sup>, it was found that 89.2% were obtained from renewable sources up to April, reaching a cumulative value of 255.9 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.

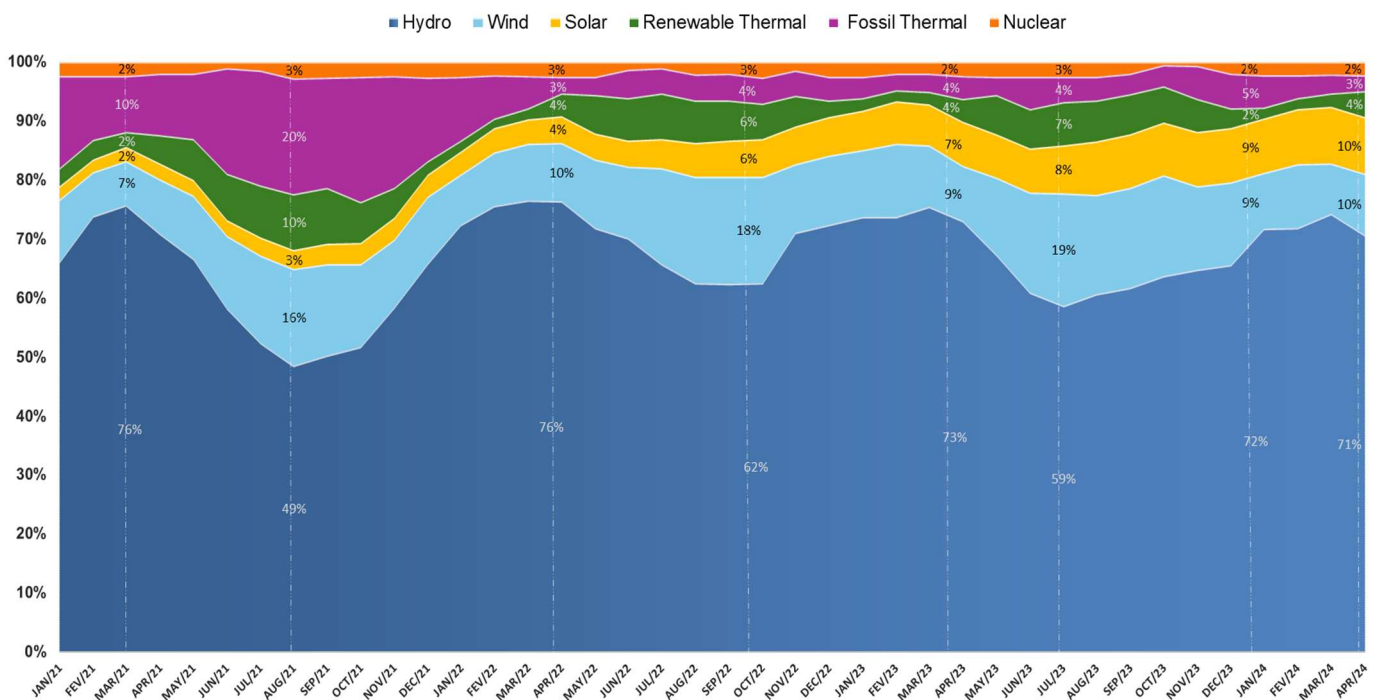


For the first four months of the year, compared to the same period of the previous year (year-to-date, or YTD), there were a 55.1% increase in generation for centralized solar and 2.6% for national hydroelectric power. There was too a 6.1% reduction in wind power. For hydroelectric power, compared to the average for the whole of last year, generation is around 16.9% higher.



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.

**Participation of Sources in Electric Power Generation in Brazil - 2021 to 2024**



# HIGHLIGHTS IN APRIL 2024

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## Oil and gas growing

Oil and gas production increased, rising 5.5% and 2.4% respectively, YTD.

## Steel and Mining growing

YTD, steel production had a small increase of 3.0% while aluminum production grew 7.7% and iron ore exports rose by 13.3%. Meanwhile, pellets exports increased by 20.3%.

## Hydraulic supply growing

The hydraulic energy supply increased by 2.6%, YTD. The monthly average was 57.951 MWavg. Itaipu's supply, for the same period, decreased by 25.1%.

## Wind energy supply falling

Wind energy supply up to April 2024 decreased by 6.0%, YTD.

For the four first months of 2024, 1,774 MW of wind power plants came into operation, 9.0% higher than the same period of the last year.

## International power energy exchange

In April 2024, Brazil exported 100 MWavg to Argentina.

## Natural gas availability falling

Gas consumption availability fell by 0.7%, YTD.

## Coal for electricity power generation stable

There was a stability in coal public power generation, YTD.

## Oil Derivatives Apparent Consumption

Apparent consumption of petroleum derivatives increased by 2.9% in the YTD, diesel consumption decreased by 7.2% and regular gasoline consumption reduced by 6.7%.

Energy consumption in light vehicles using Otto cycle fuels (gasoline, ethanol, and natural gas) had an increase of 5.4% year-to-date.

## Prices of Gasoline and Hydrated Ethanol

Gasoline C price increased by 8.0%, while hydrated ethanol price decreased by 8.0% year-to-date. Probably, as a result of these movements, hydrated ethanol sales by distributors increased by 53.8% year-to-date.

## Biodiesel production Growing

Biodiesel production and automotive ethanol consumption increased by 38.8% and 24.6%, respectively, YTD. Automotive ethanol includes anhydrous ethanol mixed with gasoline and hydrated ethanol.

From April 2023 on 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 April 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 April 2024 and the 15% blend mandate to April 2025. Biodiesel, as a replacement for fossil diesel, contributes to reducing greenhouse gas emissions and decreases the need for importing fossil fuel.

## Electricity consumption growing

Electricity consumption in the residential sector grew 8.8% compared to April 2023. Industrial consumption increased 3.8% while commercial consumption grew 6.5%.

### **Electricity tariffs growing**

The three electricity tariffs (residential, commercial and industrial) had increased compared to the previous year. Residential tariffs grew by 8.2%, while for the commercial sector there was an increase of 8.9%, and 11.4% for the industrial sector.

### **Solar distributed generation installed capacity (DG) rising**

Brazilian solar DG installed capacity is still a highlight and has increased 41.7% compared to April 2023. The centralized solar installed capacity (non-GD) also increases, with a 59.1% growth compared to the same month of the previous year.

For the first four months of the year, 2,070 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	APRIL					
	IN THE MONTH			ACCUMULATED IN THE YEAR		
	2024	2023	Δ% 24/23	2024	2023	Δ% 24/23
<b>OIL</b>						
PRODUCTION - with Shale Oil and NGL(10 <sup>3</sup> b/d)	3.271	3.220	1,6	3.458	3.276	5,5
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	91,62	82,97	10,4	85,20	84,63	0,7
<b>OIL PRODUCTS</b>						
TOTAL CONSUMPTION (10 <sup>3</sup> b/day)	2.662	2.493	6,8	2.549	2.476	2,9
hereof: DIESEL with biodiesel - (10 <sup>3</sup> b/day)	1.064	1.061	0,3	990	1.066	-7,2
hereof: GASOLINE C (10 <sup>3</sup> b/day)	768	770,6	-0,4	739	791	-6,7
CONSUMER PRICE - DIESEL (R\$/l)	5,88	5,76	2,1	5,89	6,01	-1,9
CONSUMER PRICE - GASOLINE C (R\$/l)	5,80	5,51	5,3	5,72	5,29	8,0
CONSUMER PRICE - LPG (R\$/13 kg)	101,86	107,58	-5,3	101,75	107,83	-5,6
<b>NATURAL GAS (d)</b>						
PRODUCTION (10 <sup>6</sup> m <sup>3</sup> /day)	137	142	-3,5	146	142	2,4
IMPORTS (10 <sup>6</sup> m <sup>3</sup> /day)	21,8	19,7	10,3	21,4	18,9	13,1
NON-UTILIZED AND REINJECTION (10 <sup>6</sup> m <sup>3</sup> /day)	77,2	75,4	2,4	83,5	76,9	8,5
AVAILABILITY FOR CONSUMPTION (10 <sup>6</sup> m <sup>3</sup> /day)	81,2	85,9	-5,5	83,7	84,3	-0,7
INDUSTRIAL CONSUMPTION (10 <sup>6</sup> m <sup>3</sup> /day) (f)	38,7	39,1	-1,1	38,6	40,6	-4,9
POWER GENERATION CONS. (10 <sup>6</sup> m <sup>3</sup> /day) (e)	10,8	12,4	-12,6	12,9	10,8	19,1
INDUSTRIAL PRICE SE (b) (US\$/MMBtu) - consumption range of 20,000 m <sup>3</sup> /day (a)	20,36	21,13	-3,7	20,21	21,17	-4,5
MOTOR PRICE SE (US\$/MMBtu) (a)	28,27	26,66	6,0	23,17	27,54	-15,9
RESIDENTIAL PRICE SE (US\$/MMBtu) (a)	52,03	50,74	2,6	51,48	50,81	1,3
<b>ELECTRICITY</b>						
NATIONAL INTERCONNECTED SYSTEM	81.658	69.997	16,7	81.976	72.799	12,6
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	46.905	40.054	17,1	46.722	41.698	12,0
SOUTH POWER LOAD (MWavg)	13.946	11.588	20,3	14.509	12.857	12,9
NORTHEAST POWER LOAD (MWavg)	13.252	11.543	14,8	13.344	11.670	14,3
NORTH POWER LOAD (MWavg)	7.555	6.812	10,9	7.400	6.574	12,6
TOTAL CONSUMPTION (TWh) (d)	47,3	44,7	5,9	47,0	43,9	7,1
RESIDENTIAL	14,9	13,7	8,8	15,3	13,7	11,3
INDUSTRIAL	16,4	15,8	3,8	15,9	15,2	4,6
COMMERCIAL	9,0	8,5	6,5	9,0	8,3	7,9
OTHER SECTORS	7,0	6,8	2,9	6,9	6,6	3,2
PLANTS ENTRY INTO OPERATING (MW)	1505	596	152,5	4.133	3.331	24,1
RESIDENTIAL PRICE (R\$/MWh)	872	824	5,8	874	807	8,2
COMMERCIAL PRICE (R\$/MWh)	840	784	7,1	841	772	8,9
INDUSTRIAL PRICE (R\$/MWh)	824	750	9,8	829	744	11,4
<b>ETHANOL AND BIODIESEL</b>						
BIODIESEL PRODUCTION (10 <sup>3</sup> b/d)	152	121	25,8	145	105	38,8
MOTOR ETHANOL CONSUMPTION (10 <sup>3</sup> b/d)	578	451	28,2	565	453	24,6
ETHANOL EXPORTS (10 <sup>3</sup> b/d)	33	42	-20,9	40	41	-2,6
HYDRATED ETHANOL PRICE (R\$/l)	3,78	3,97	-4,8	3,59	3,90	-8,0
<b>COAL</b>						
ELECTRICITY GENERATION (MWavg)	297	808	-63,2	699	700	-0,1
IMPORT PRICE (US\$ FOB/t)	173,00	264,52	-34,6	195,91	255,96	-23,5
<b>NUCLEAR ENERGY</b>						
ELECTRICITY GENERATION - (GWh)	1996	1929	3,5	1.954	1.849	5,7
<b>INDUSTRIAL SECTORS</b>						
STEEL PRODUCTION (10 <sup>3</sup> t/day)	91	92	-1,1	91	88	3,0
ALUMINIUM PRODUCTION (10 <sup>3</sup> t/day) (c)	3,0	2,8	6,5	2,9	2,7	7,7
IRON ORE EXPORTS (10 <sup>3</sup> t/day)	904	774	16,9	874	771	13,3
PELLETS EXPORTS (10 <sup>3</sup> t/day)	84	59	41,8	76	64	20,3
BIG IRON EXPORTS (10 <sup>3</sup> t/day)	7,1	7,1	0,0	10,4	9,1	14,7
PAPER PRODUCTION (10 <sup>3</sup> t/day)	30,7	28,8	6,5	30,9	29,3	5,2
PULP PRODUCTION (10 <sup>3</sup> t/day) (a)	68,0	69,4	-1,9	69,5	67,9	2,4
SUGAR PRODUCTION (10 <sup>3</sup> t/day)	88,0	57,2	53,8	35,3	25,5	38,4
SUGAR EXPORTS (10 <sup>3</sup> t/day)	63	33	91,5	91	50	81,3

(a) March data.

(c) December data.

(e) Estimated data.

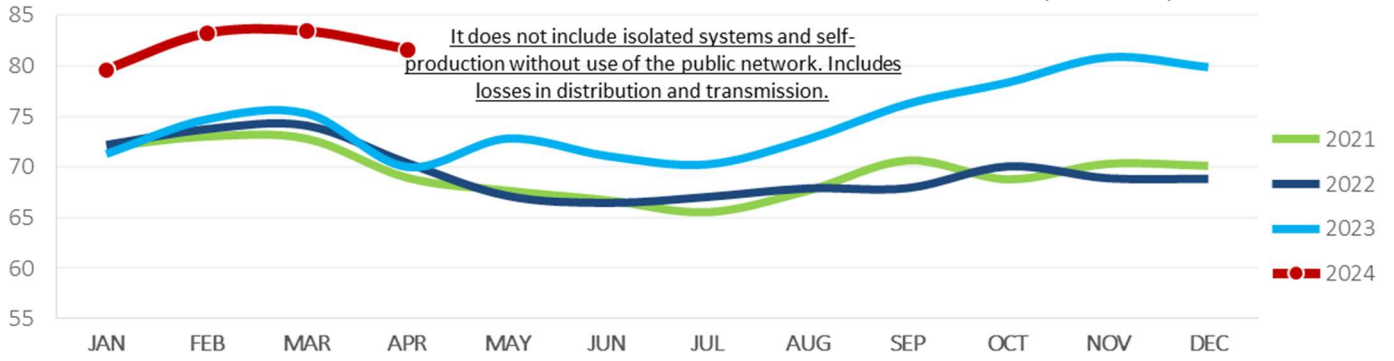
(b) SE is the acronym of Southeast

(d) The traditional autoproducers (consumers that do not use public grid) is not included.

(f) February data.

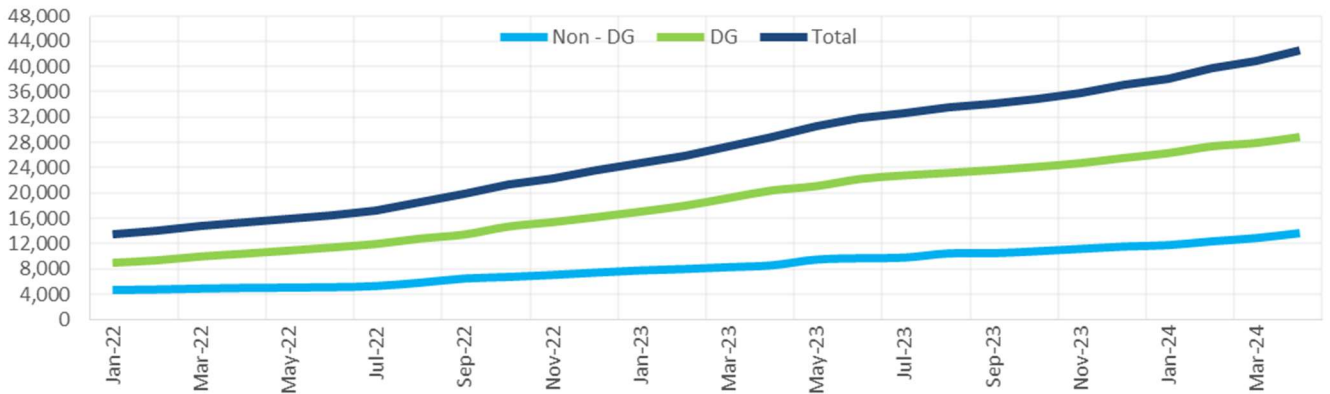


### NATIONAL INTERCONNECTED SYSTEM POWER LOAD (GWAVG)



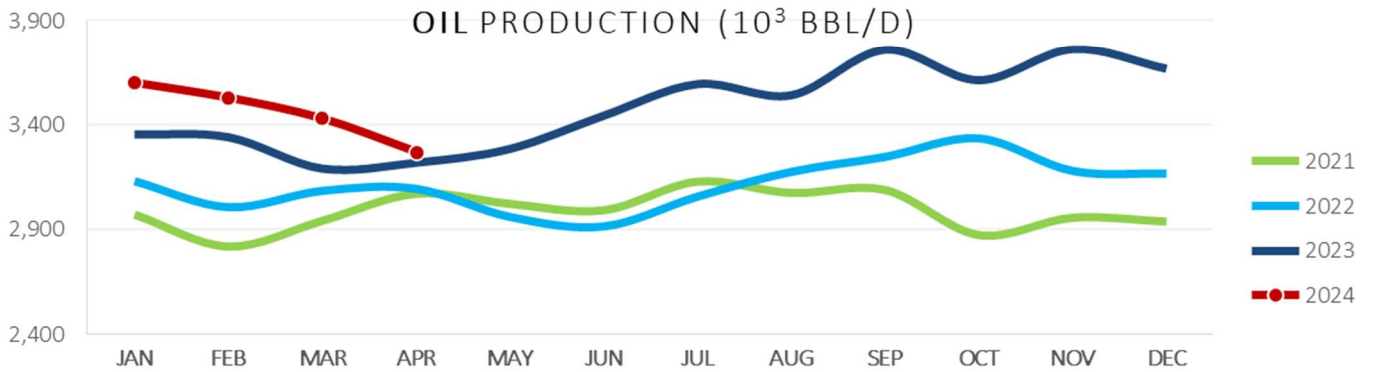
Source: National Electric System Operator (ONS)

### PHOTOVOLTAIC SOLAR INSTALLED CAPACITY (MW)



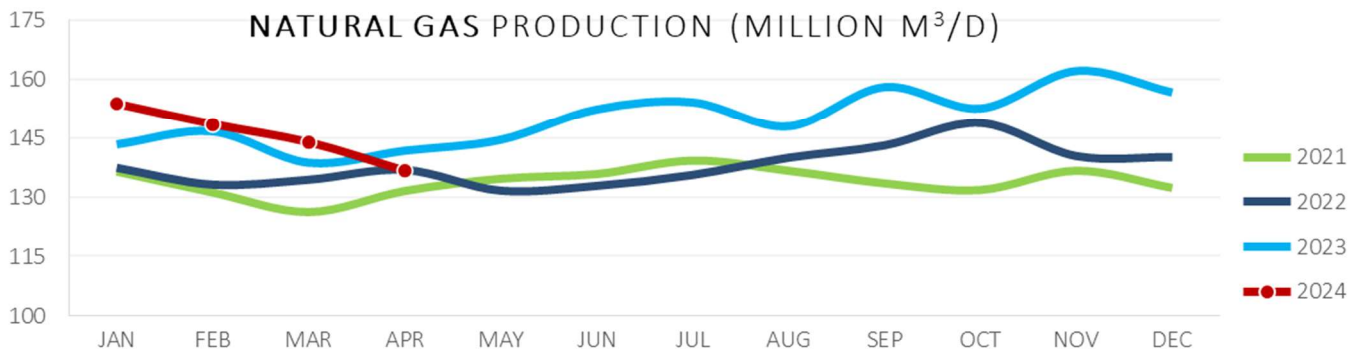
Source: Electric Energy Secretary of Ministry of Mines and Energy

### OIL PRODUCTION (10<sup>3</sup> BBL/D)



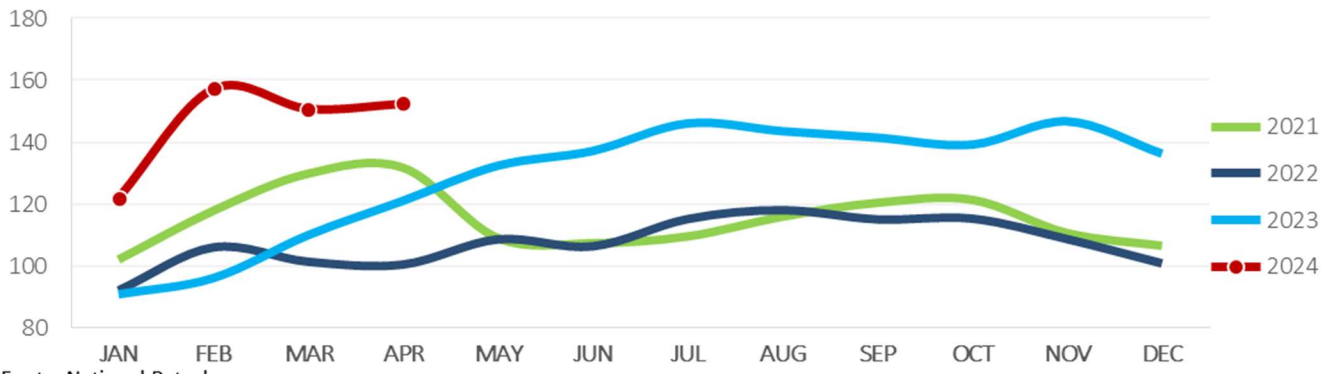
Source: National Petroleum Agency

### NATURAL GAS PRODUCTION (MILLION M<sup>3</sup>/D)



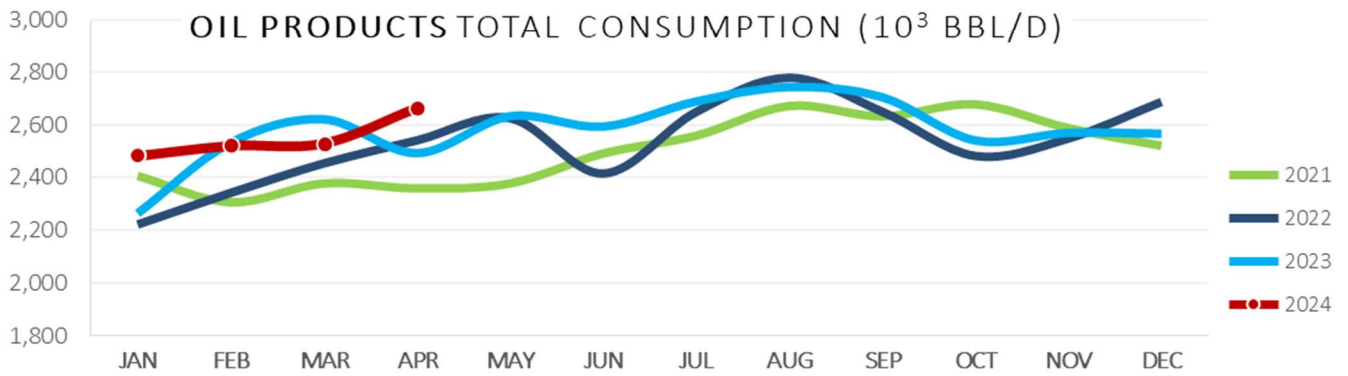
Source: National Petroleum Agency

### BIODIESEL PRODUCTION(10<sup>3</sup> BBL/D)



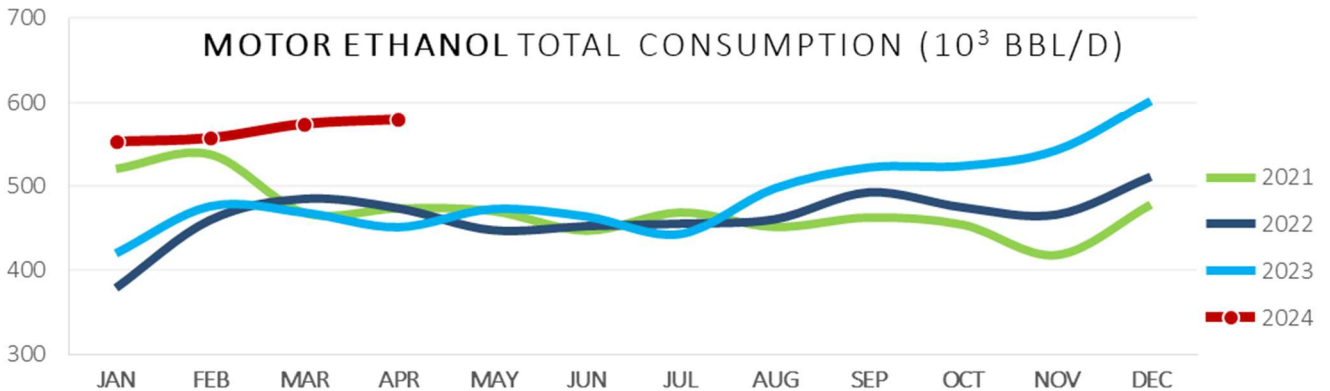
Fonte: National Petroleum agency

### OIL PRODUCTS TOTAL CONSUMPTION (10<sup>3</sup> BBL/D)



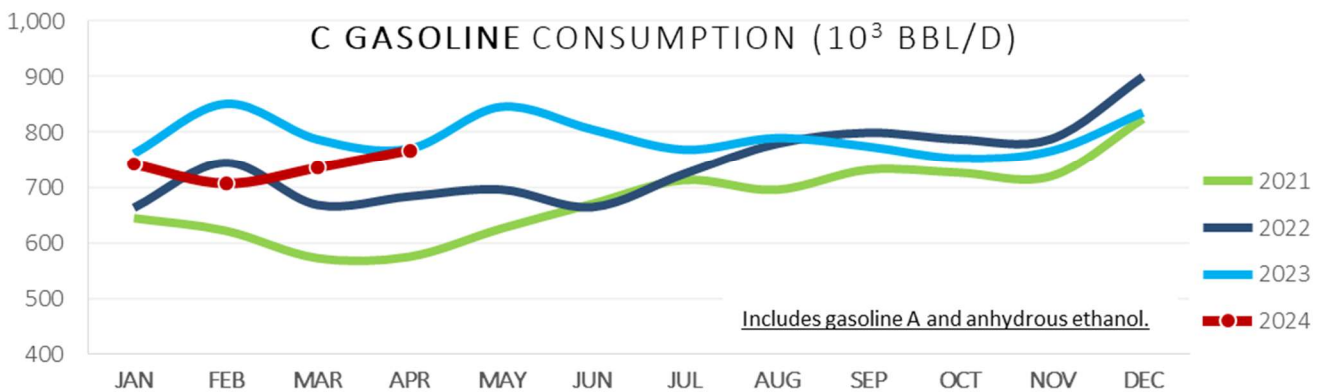
Source: National Petroleum Agency

### MOTOR ETHANOL TOTAL CONSUMPTION (10<sup>3</sup> BBL/D)



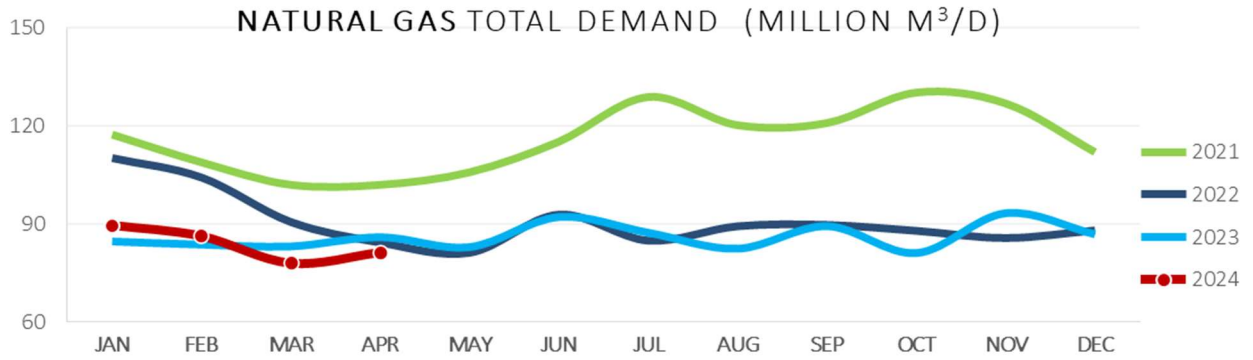
Source: National Petroleum Agency

### C GASOLINE CONSUMPTION (10<sup>3</sup> BBL/D)

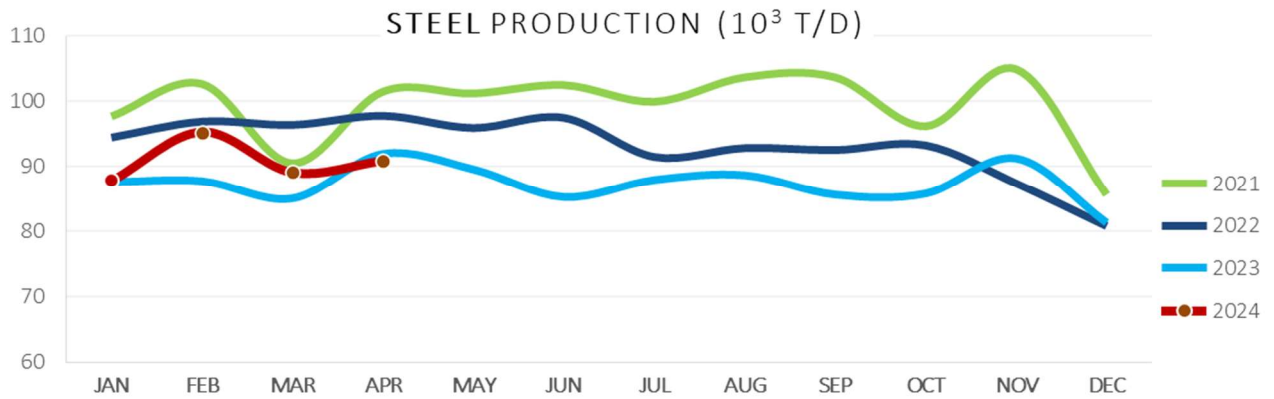


Source: National Petroleum Agency

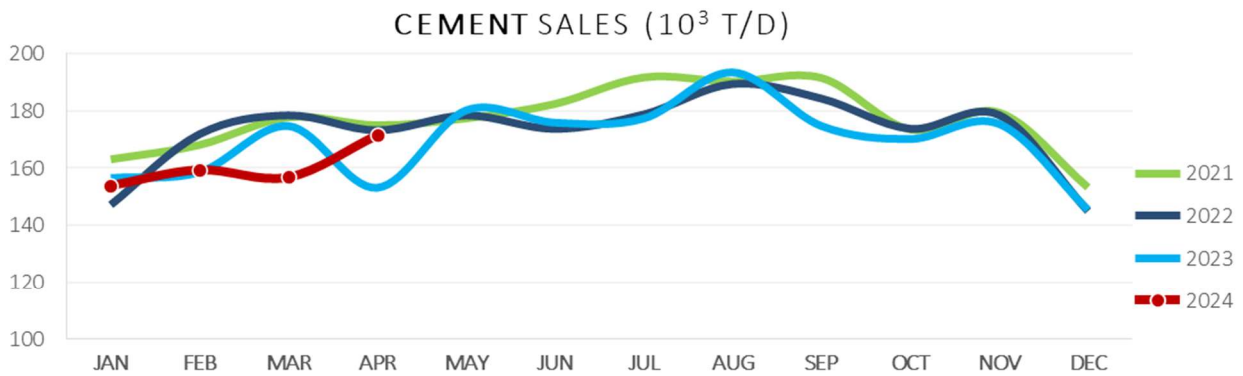




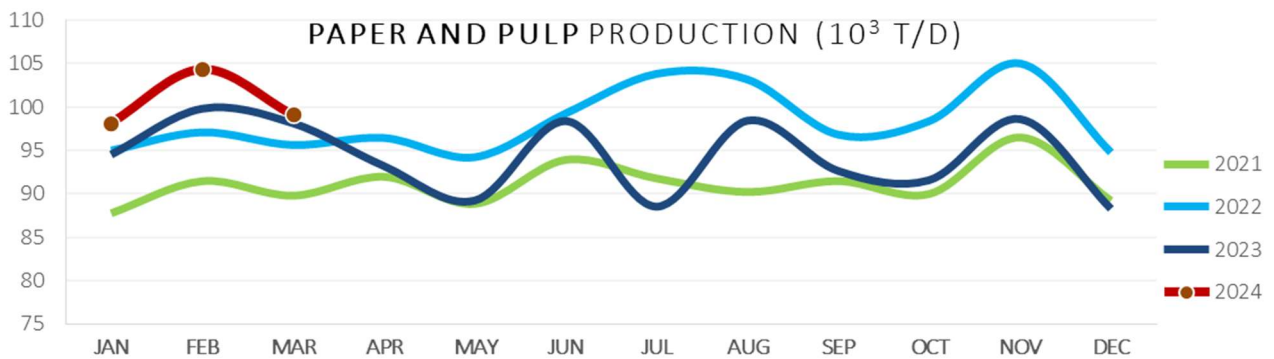
Sources: National Petroleum Agency (ANP) and National Electric System Operator (ONS)



Source: Brazil Steel Institute

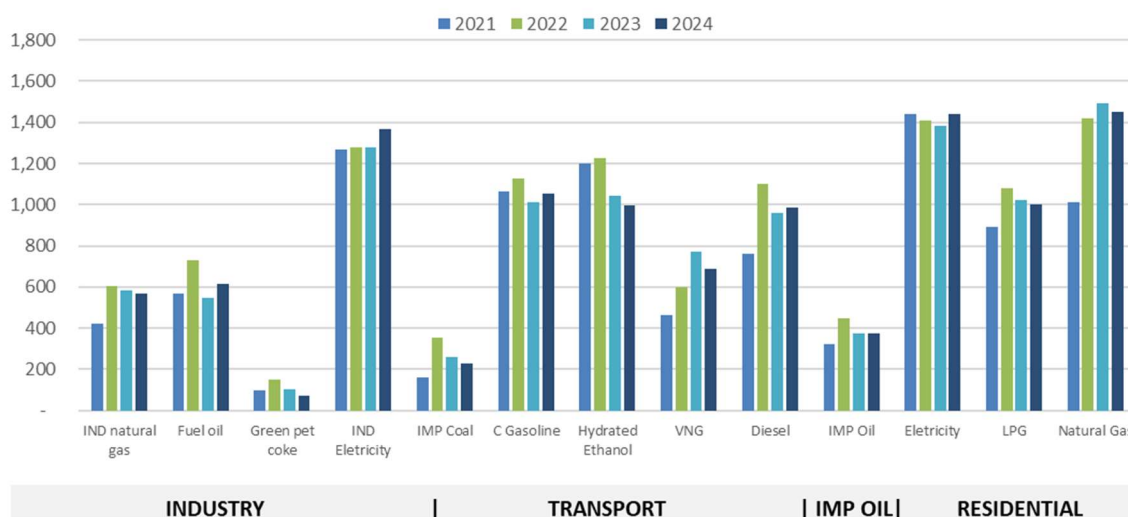


Source: National Cement Industry Union



Source: Brazilian Tree Industry (IBA)

## Consumer Prices - Average from 2020 to April 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.

<sup>1</sup> 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.

<sup>2</sup> 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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