

# MONTHLY ENERGY BULLETIN

## BRAZIL



MINISTRY OF MINES AND ENERGY - MME  
SECRETARIAT OF ENERGY PLANNING AND DEVELOPMENT - SPE  
DEPARTMENT OF INFORMATION AND STUDIES ON ENERGY - DIE

REFERENCE MONTH

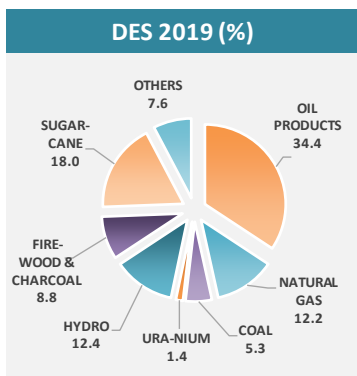
**DECEMBER**  
**2020**

# DOMESTIC ENERGY SUPPLY

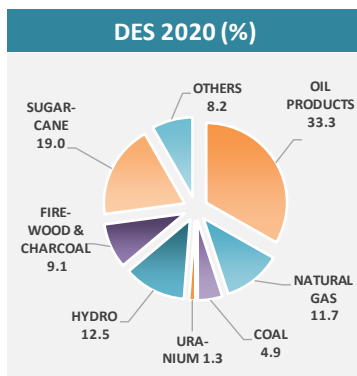
The completion of data on sugar and alcohol sector for the 2020 calendar year increased sugar production and mitigated the drop in ethanol production, which improved the indicator of the 2020 domestic supply (DES<sup>1</sup>), now with a 2.1% retreat projection, compared to the previous estimate of -3.5%. Even so, the DES will remain more than 5% below the amount of 2014 (historical record).

In 2020, the social isolation resulting from COVID 19 resulted in an increase of 4.4% in residential consumption of electricity and 3.5% in cooking gas consumption, and strong decreases in commercial consumption of electricity (-10, 6%), light vehicle energy (-9.4%), and aviation kerosene consumption (-50.3%). It is worth mentioning the 10% increase in cement consumption, where one of the reasons was the governmental emergency aid.

## TOTAL ENERGY DEMAND SHRINKS 2.1% IN 2020



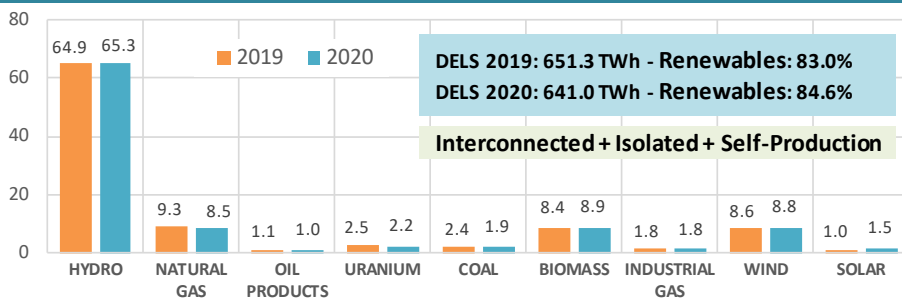
**294.0 million toe - 46.1% renewables**



**287.8 million toe - 48.2% renewables**

For the 2020's Domestic Electricity Supply (DELS)<sup>2</sup> is expected a decrease of 1.6%. As well as in DES, renewables share slightly rises and should stay near 85% (seasonal sources little affected by the pandemic).

## DOMESTIC ELECTRICITY SUPPLY, BY SOURCE (%)



# HIGHLIGHTS IN DECEMBER 2020

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## ■ *Rise in oil production in 2020*

Oil production fell 12.3% in December 2020 compared to December 2019, but ended the year with a 5.1% increase. The production of natural gas ended with an increase of 4.0%. In 2020, Brazil should have an energy surplus above 10%.

## ■ *Metallurgy recoil in 2020*

Steel production closed 2020 with a 5.7% fall (-12% up to August). Ore exports closed up with a 2.9% rise (-7.3% up to July), and pellets with 38.9% down.

## ■ *Hydraulic supply reduces in 2020*

The hydraulic energy supply was down 1% in the year (-6.5% up to June) and Itaipu's stayed at -5.9% (-8.2% up to April).

## ■ *Oil derivatives shrinks in 2020*

Apparent consumption of oil products ended the year with a decrease of 5.2%, excluding bioenergy (-8.6% up to August). Diesel consumption (including biodiesel) dropped 0.7% and gasoline consumption dropped 6.4%. Automotive ethanol consumption ended the year down 12.2%. Total natural gas demand declined by 6.1% in the year, mainly due to a 9.7% decline in power generation and a 2.6% reduction in industry.

The Otto's cycle (gasoline, ethanol and natural gas) light vehicles energy consumption accumulate a decrease of 9.4% in the year (record of -13.3 until June). In previous years the rates were: 4.5% in 2019, -1.2% in 2018, 1.7% in 2017, -1.1% in 2016 and 6.2% in 2014.

## ■ *Electricity consumption falls in 2020*

Electricity consumption without self-producers dropped 1.7% in the year (-4% up to July). Commercial consumption ended the year with -10.6% and the industrial consumption with -1.1%. The residential consumption was 4.4% high.

## ■ *Increasing in Biodiesel production in 2020*

Biodiesel production fell by 1.3% in December but closed the year with a 8.4% increase (12.8% up to August). The rates of the previous three years were positive in double digits.

Cement consumption grew 16% over December 2019, ending the year with a 10% increase. Pulp production rose 5.0% in the year (-6.0% in 2019, and positive of 7.1% in 2018, 3.8% in 2017, 7.8% in 2016, 8.5 % in 2015 and 9.2% in 2014).

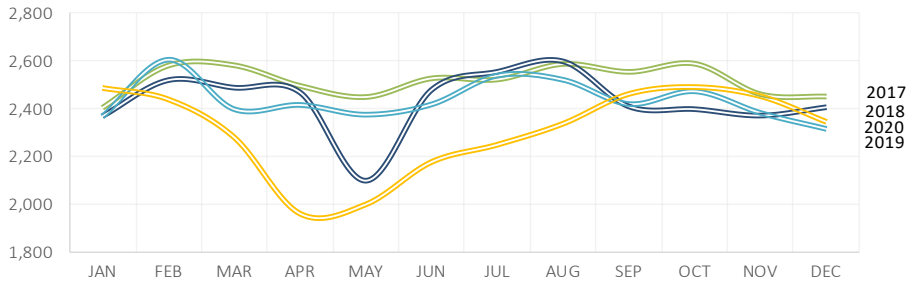
## ■ *Electricity tariffs recoil*

The national average tariff for residential electricity ended 2020 with a reduction of 2.6% (8.0% in 2019, 12.6% in 2018, stable in 2017 and 5.8% in 2016). Commercial tariff fell 2.1% (7.4% in 2019, 12.4% in 2018, 0.7% in 2017 and 5.7% in 2016) and industrial rose 0.1% (5.7% in 2019, 13.4% in 2018, 1.2% in 2017 and 3.6% in 2016).

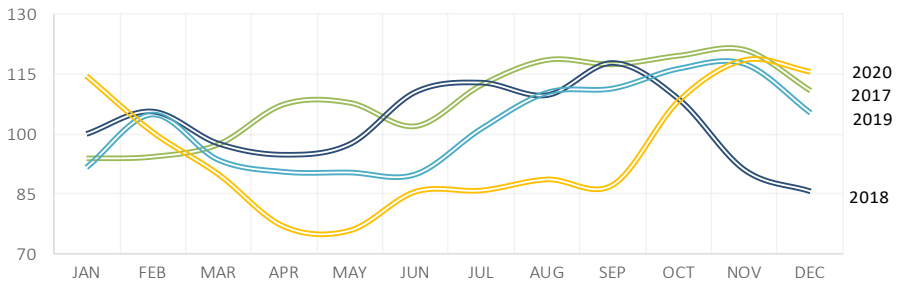
SPECIFICATION	DECEMBER						
	IN THE MONTH			ACCUMULATED IN THE YEAR			
	2020	2019	%20/19	2020	2019	%20/19	%
<b>OIL</b>							
PRODUCTION - with Shale Oil and NGL(10 <sup>3</sup> b/d)	2,822	3,216	-12.3	3,040	2,891	5.1	-
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	43	66	-34.5	52	67	-22.3	-
<b>OIL PRODUCTS</b>							
TOTAL CONSUMPTION (10 <sup>3</sup> b/day)	2,347	2,314	1.4	2,308	2,434	-5.2	100.0
hereof: DIESEL with biodiesel - (10 <sup>3</sup> b/day)	997	920	8.4	1,035	1,042	-0.7	42.6
hereof: GASOLINE C (10 <sup>3</sup> b/day)	754	723	4.3	615	658	-6.4	21.3
CONSUMER PRICE - DIESEL (R\$/l)	3.68	3.81	-3.3	3.43	3.59	-4.5	-
CONSUMER PRICE - GASOLINE C (R\$/l)	4.48	4.62	-3.0	4.29	4.39	-2.3	-
CONSUMER PRICE - LPG (R\$/13 kg)	74.8	69.9	7.0	70.8	69.1	2.4	-
<b>NATURAL GAS</b>							
PRODUCTION (106 m3/day)	126.4	136.6	-7.5	127.5	122.5	4.0	-
IMPORTS (106 m <sup>3</sup> /day)	50.5	36.7	37.5	26.3	26.9	-2.3	-
NON-UTILIZED AND REINJECTION (106 m <sup>3</sup> /day)	58.2	55.8	4.3	58.1	47.6	22.2	-
AVAILABILITY FOR CONSUMPTION (106 m <sup>3</sup> /day)	118.6	117.5	1.0	95.6	101.9	-6.1	100.0
INDUSTRIAL CONSUMPTION (106 m <sup>3</sup> /day)	39.6	36.8	7.8	36.0	37.0	-2.6	37.6
POWER GENERATION CONS. (106 m <sup>3</sup> /day)	45.1	43.2	4.4	26.2	29.0	-9.7	27.4
INDUSTRIAL PRICE SP(*) (US\$/MMBtu) - consumption range of 20,000 m <sup>3</sup> /day	9.6	15.3	-37.1	11.1	15.5	-28.3	-
MOTOR PRICE SP (US\$/MMBtu)	14.2	19.3	-26.4	15.3	19.5	-21.5	-
RESIDENTIAL PRICE SP (US\$/MMBtu)	32.5	42.8	-24.1	34.2	40.7	-15.9	-
<b>ELECTRICITY</b>							
NATIONAL INTERCONNECTED SYSTEM	69,364	66,861	3.7	65,874	66,866	-1.5	100.0
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	39,655	37,693	5.2	37,998	38,769	-2.0	57.7
SOUTH POWER LOAD (MWavg)	12,279	11,880	3.4	11,543	11,561	-0.2	17.5
NORTHEAST POWER LOAD (MWavg)	11,585	11,668	-0.7	10,717	10,964	-2.3	16.3
NORTH POWER LOAD (MWavg)	5,845	5,620	4.0	5,616	5,572	0.8	8.5
TOTAL CONSUMPTION (TWh) (**)	41.9	40.6	3.1	473.9	482.1	-1.7	100.0
RESIDENTIAL	13.3	12.2	9.2	148.2	141.9	4.4	31.3
INDUSTRIAL	14.6	13.4	8.5	165.6	167.4	-1.1	34.9
COMMERCIAL	7.5	8.1	-7.5	82.4	92.2	-10.6	17.4
OTHER SECTORS	6.5	7.0	-6.0	77.7	80.6	-3.5	16.4
PLANTS ENTRY INTO OPERATING (MW)	791	416	90.2	4,896	6,560	-25.4	-
RESIDENTIAL PRICE (R\$/MWh)	795	779	2.1	754	774	-2.6	-
COMMERCIAL PRICE (R\$/MWh)	686	694	-1.2	675	690	-2.1	-
INDUSTRIAL PRICE (R\$/MWh)	674	646	4.3	652	651	0.1	-
<b>ETHANOL AND BIODIESEL</b>							
BIODIESEL PRODUCTION (10 <sup>3</sup> b/d)	105	106	-1.3	110	102	8.4	-
MOTOR ETHANOL CONSUMPTION (10 <sup>3</sup> b/d)	596	629	-5.2	497	566	-12.2	-
ETHANOL EXPORTS (10 <sup>3</sup> b/d)	49	41	17.4	45	34	31.1	-
HYDRATED ETHANOL PRICE (R\$/l)	3.18	3.21	-0.9	2.96	2.91	1.7	-
<b>COAL</b>							
ELECTRICITY GENERATION (MWavg)	2,391	1,772	34.9	1,237	1,544	-19.9	-
IMPORT PRICE (US\$ FOB/t)	79.1	107.9	-26.6	89.8	136.1	-34.0	-
<b>NUCLEAR ENERGY</b>							
ELECTRICITY GENERATION - (GWh)	1,379	1,479	-6.8	14,053	16,128	-12.9	-
<b>INDUSTRIAL SECTORS</b>							
STEEL PRODUCTION (10 <sup>3</sup> t/day)	79	78	1.5	83	88	-5.7	-
ALUMINIUM PRODUCTION (10 <sup>3</sup> t/day)	1.9	1.9	0.0	1.9	1.8	4.4	-
IRON ORE EXPORTS (10 <sup>3</sup> t/day)	1,027	738	39.3	891	866	2.9	-
PELLETS EXPORTS (10 <sup>3</sup> t/day)	41	68	-40.0	41	68	-38.9	-
PAPER PRODUCTION (10 <sup>3</sup> t/day)	27.0	29.7	-9.1	27.8	28.9	-3.6	-
PULP PRODUCTION (10 <sup>3</sup> t/day)	55.4	53.9	2.7	57.4	54.7	5.0	-
SUGAR PRODUCTION (10 <sup>3</sup> t/day)	38	18	107.8	113	80	41.3	-
SUGAR EXPORTS (10 <sup>3</sup> t/day)	96	46	107.3	87	49	76.4	-

(\*) SP is the acronym of the state of São Paulo.      (\*\*) The traditional self-producers (consumers that do not use public grid) is not included.

## OIL PRODUCTS TOTAL CONSUMPTION (10<sup>3</sup> bbl/d)

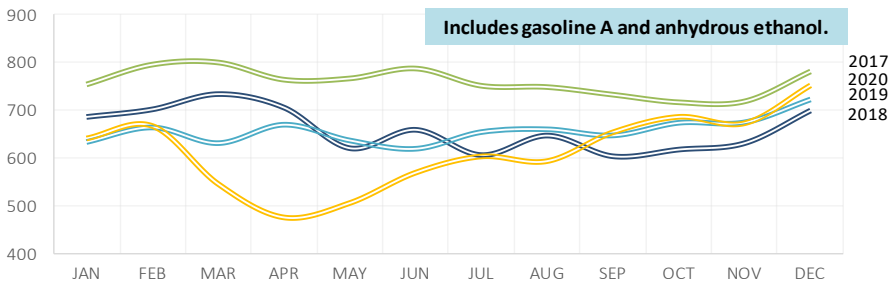


## NATURAL GAS TOTAL DEMAND (million m<sup>3</sup>/d)

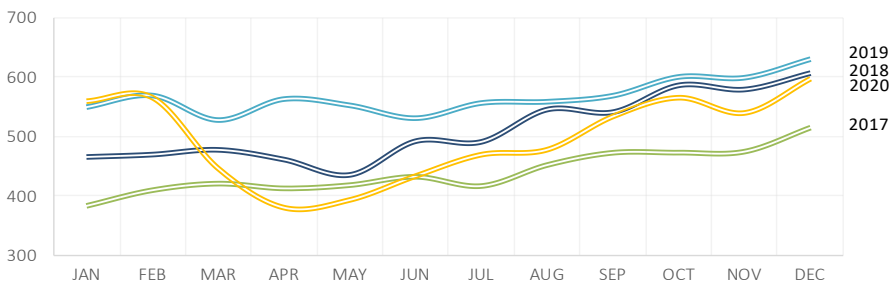


## C GASOLINE CONSUMPTION (10<sup>3</sup> bbl/d)

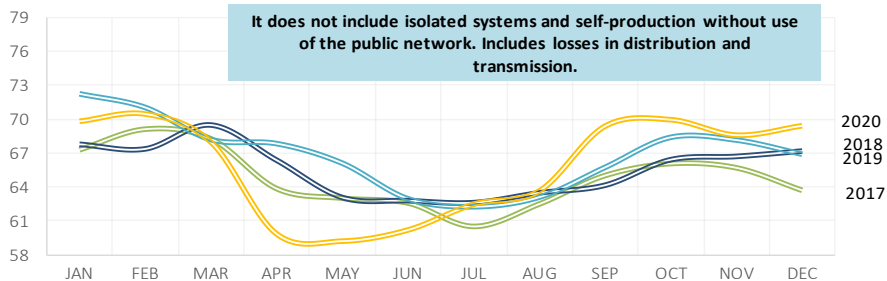
Includes gasoline A and anhydrous ethanol.



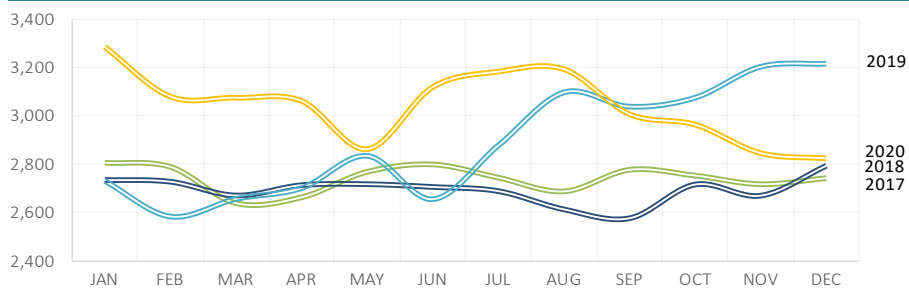
## MOTOR ETHANOL TOTAL CONSUMPTION (10<sup>3</sup> bbl/d)



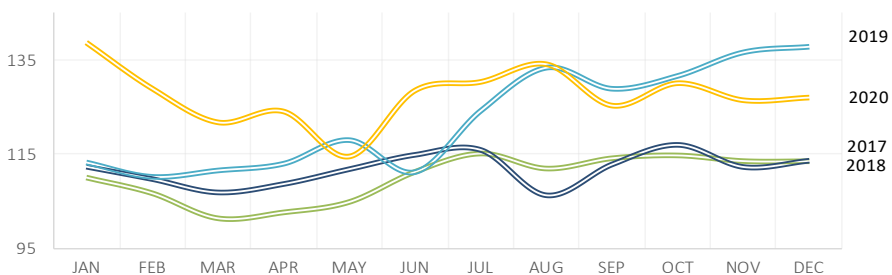
## NATIONAL INTERCONNECTED SYSTEM POWER LOAD (GWavg)



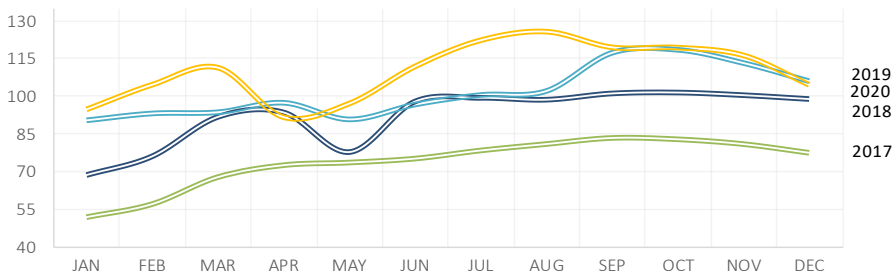
## OIL PRODUCTION (10<sup>3</sup> bbl/d)



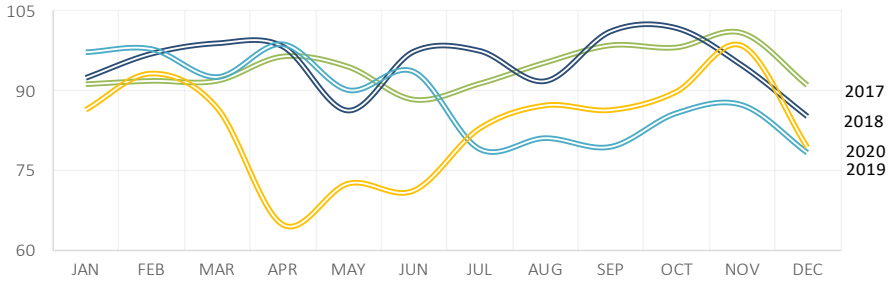
## NATURAL GAS PRODUCTION (million m<sup>3</sup>/d)



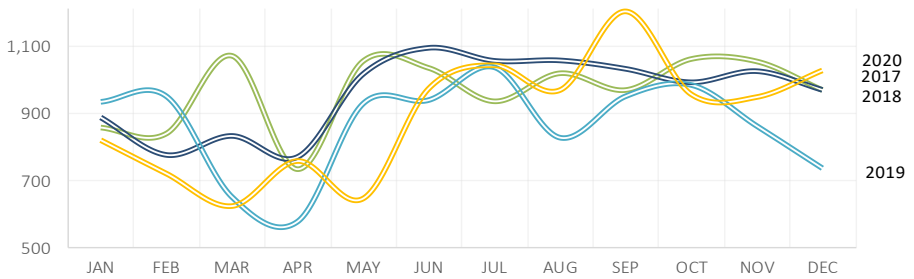
## BIODIESEL PRODUCTION (10<sup>3</sup> bbl/d)



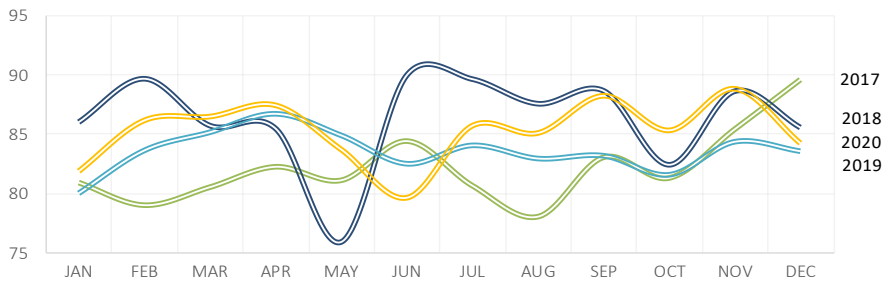
## STEEL PRODUCTION (10<sup>3</sup> t/d)



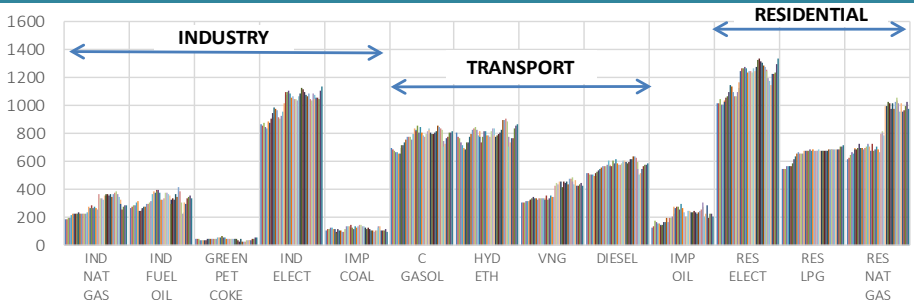
## IRON ORE EXPORTS (10<sup>3</sup> t/d)



## PAPER AND PULP PRODUCTION (10<sup>3</sup> t/d)



## CONSUMER PRICES - Jan 2017 to Dec 2020 (R\$/boe)



**Note:** For a better visualization, the minimum scale of the graphs was raised to the level close to the lowest value of the curves.

## METHODOLOGICAL NOTES

The purpose of this bulletin is to follow up a set of energy and non-energy variables that provide a reasonable estimate of the behavior both monthly as cumulative of the total energy demand in Brazil.

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

<sup>1</sup> Domestic Energy Supply (DES), or Brazilian Energy Demand, represents the energy necessary to move the economy of a country or region over a period of time. Includes final energy consumption in the residential sector and in the other economic sectors, includes losses in transmission and distribution, losses on power transformation and the own consumption of the energy sector.

<sup>2</sup> 2019 data from DEL and DELS reflect the final results of the National Energy Balance (BEB), cycle 2020, concluded in May by the Energy Research Company (EPE), in partnership with MME and its companies and agencies.

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