

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

MAY
2020

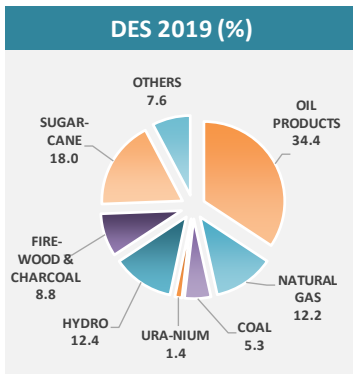
DOMESTIC ENERGY SUPPLY

The month of May 2020 recovers practically all energy indicators in relation to April, but still maintains values well below the same month of the previous year. Thus, as predicted, April was the peak month for the adverse effects of COVID-19. May's Total Energy Demand, or Domestic Energy Supply (DES)¹, is estimated to have decreased 8.0%, compared to 14.6% in April (over the

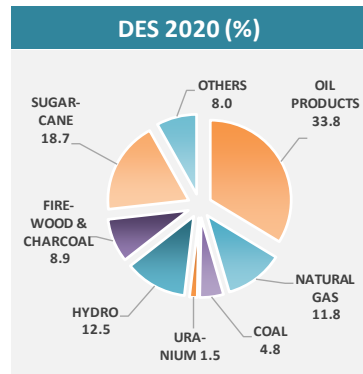
same months of 2019). Until May 2020, the estimated drop for the DES was 4.5%.

DES is expected to reach the cumulative drop of 4.9% at the end of June, when it is expected to undergo a slow recovery and end the year with a decrease of 3.4%. The energy volume will be close to that verified in 2012 and 7% lower than in 2014 (record).

2020 TOTAL ENERGY DEMAND MAY RECOIL 3.4%



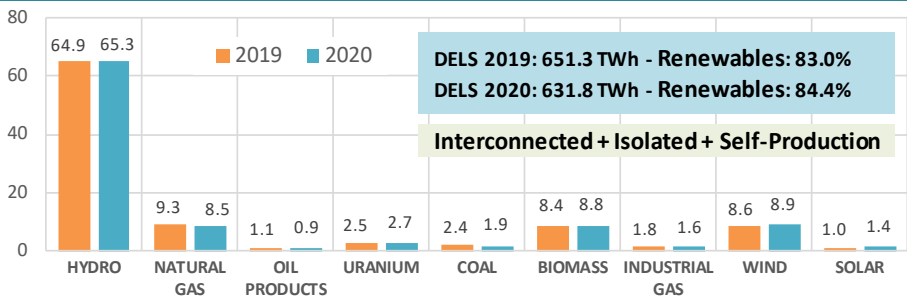
294.0 million toe - 46.1% renewables



284.0 million toe - 47.6% renewables

For the 2020 Domestic Electricity Supply (DELS)² is expected a decrease of 3.0%. The share of renewables rises and should stay between 84% and 85%, because intermittent sources are less affected by the pandemic.

DOMESTIC ELECTRICITY SUPPLY, BY SOURCE (%)



HIGHLIGHTS IN MAY 2020

■ Oil production still rising

Oil production grew by just 0.9% in May 2020, compared to May 2019, accumulating an increase of 13.6% in the year (17.1% until April). The production of natural gas accumulated an increase of 10.9% in the year (14.7% up to April). These indicators will provide Brazil's energy surplus close to 10% in 2020.

■ Mining and metallurgy is down

Steel production accumulates 16.7% down in the year. Iron ore exports accumulate 11.8% down and pellets, 40% down.

■ Hydraulic supply downwards

The supply of hydraulic energy accumulated a drop of 6.7% in the year (5.2% up to April), and that of Itaipu, down 7.5% (8.2% up to April).

■ Oil derivatives recoil

Apparent consumption of oil products fell 15.7% in May, compared to the same month of 2019, and accumulated a drop of 8.0% in the year (excluding ethanol and biodiesel). Diesel consumption (including biodiesel) fell by 4.7%, and gasoline by 12.3%. Automotive ethanol consumption dropped 15.0% in the year. The total demand for natural gas started to drop by 2.7% in the year, and it still maintains a positive rate of 11.7% in electricity generation, but in industry there is a decrease of 10.3%.

Energy consumption in light vehicles of the Otto cycle (gasoline, ethanol and natural gas) recoiled 13.3% in the year (+4.5% in 2019, -1.2% in 2018, + 1.7% in 2017, -1.1% in 2016 and + 6.2% in 2014).

■ Electricity consumption in down

Electricity consumption – without self-producers – accumulates a 3.8% drop in the year. Commercial consumption accumulated a decrease of 9.6% and residential consumption, 1.0% high. The industrial decreased 5.1% in the year.

■ Biodiesel production recoils

Biodiesel production increased by 6.9% in May, and accumulates an increase of 7.3% in the year. The rates for the previous three years were positive in double digits.

Pulp production accumulated an increase of 4.1% in the year (-6.0% in 2019, +7.1% in 2018, +3.8% in 2017, +7.8% in 2016, +8.5% in 2015 and +9.2% in 2014). Cement consumption grew 3.8% over May 2019, but accumulated a drop of 1.3% in the year.

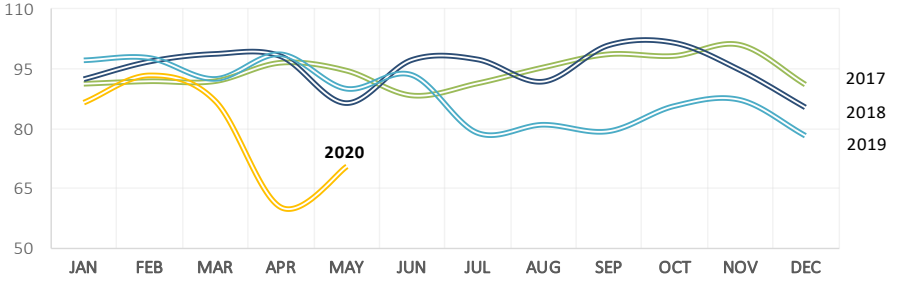
■ Electricity tariffs recoil

The national average tariff for residential electricity decreased 7.3% in May (8.0% in 2019, 12.6% in 2018, stable in 2017 and 5.8% in 2016). Commercial fell 3.3% (7.4% in 2019, 12.4% in 2018, 0.7% in 2017 and 5.7% in 2016), and industrial increased 1.4% (5.7% in 2019, 13.4% in 2018, 1.2% in 2017 and 3.6% in 2016).

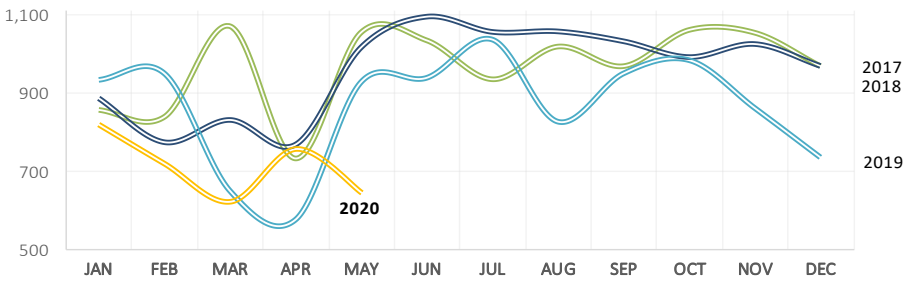
SPECIFICATION	MAY						
	IN THE MONTH			ACCUMULATED IN THE YEAR			
	2020	2019	%20/19	2020	2019	%20/19	%
OIL							
PRODUCTION - with Shale Oil and NGL(10 ³ b/d)	2,860	2,834	0.9	3,071	2,703	13.6	-
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	43	71	-39.9	60	68	-11.7	-
OIL PRODUCTS							
TOTAL CONSUMPTION (10 ³ b/day)	2,001	2,374	-15.7	2,233	2,428	-8.0	100.0
hereof: DIESEL with biodiesel - (10 ³ b/day)	936	1,026	-8.7	962	1,009	-4.7	40.9
hereof: GASOLINE C (10 ³ b/day)	507	637	-20.4	567	647	-12.3	20.3
CONSUMER PRICE - DIESEL (R\$/l)	3.04	3.65	-16.8	3.48	3.53	-1.4	-
CONSUMER PRICE - GASOLINE C (R\$/l)	3.82	4.55	-16.1	4.30	4.35	-1.3	-
CONSUMER PRICE - LPG (R\$/13 kg)	69.5	69.3	0.4	69.8	69.2	0.9	-
NATURAL GAS							
PRODUCTION (106 m ³ /day)	114.4	117.9	-3.0	125.5	113.2	10.9	-
IMPORTS (106 m ³ /day)	13.3	18.7	-29.0	22.0	23.4	-6.2	-
NON-UTILIZED AND REINJECTION (106 m ³ /day)	52.0	46.4	12.1	56.0	42.7	31.3	-
AVAILABILITY FOR CONSUMPTION (106 m ³ /day)	75.7	90.3	-16.2	91.4	94.0	-2.7	100.0
INDUSTRIAL CONSUMPTION (106 m ³ /day)	31.2	38.7	-19.3	33.7	37.5	-10.3	36.8
POWER GENERATION CONS. (106 m ³ /day)	15.7	17.1	-8.1	23.7	21.2	11.7	25.9
INDUSTRIAL PRICE SP(*) (US\$/MMBtu) - consumption range of 20,000 m ³ /day	11.3	14.8	-23.6	13.3	15.0	-11.6	-
MOTOR PRICE SP (US\$/MMBtu)	14.1	19.1	-26.0	16.8	19.3	-12.6	-
RESIDENTIAL PRICE SP (US\$/MMBtu)	31.2	35.4	-11.8	36.9	35.7	3.1	-
ELECTRICITY							
NATIONAL INTERCONNECTED SYSTEM	59,164	66,064	-10.4	65,591	69,040	-5.0	100.0
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	33,971	38,386	-11.5	37,842	40,338	-6.2	57.7
SOUTH POWER LOAD (MWavg)	10,186	11,078	-8.1	11,735	12,023	-2.4	17.9
NORTHEAST POWER LOAD (MWavg)	9,731	10,992	-11.5	10,630	11,173	-4.9	16.2
NORTH POWER LOAD (MWavg)	5,276	5,608	-5.9	5,385	5,506	-2.2	8.2
TOTAL CONSUMPTION (TWh) (**)	36.1	40.5	-11.1	196.0	203.7	-3.8	100.0
RESIDENTIAL	11.8	11.9	-0.9	61.8	61.2	1.0	31.6
INDUSTRIAL	12.2	14.2	-13.9	65.7	69.3	-5.1	33.5
COMMERCIAL	5.8	7.8	-25.2	36.1	39.9	-9.6	18.4
OTHER SECTORS	6.2	6.6	-6.8	32.3	33.3	-2.8	16.5
PLANTS ENTRY INTO OPERATING (MW)	494	825	-40.1	2,921	2,314	26.2	-
RESIDENTIAL PRICE (R\$/MWh)	711	767	-7.3	745	756	-1.4	-
COMMERCIAL PRICE (R\$/MWh)	661	684	-3.3	672	671	0.2	-
INDUSTRIAL PRICE (R\$/MWh)	653	644	1.4	647	637	1.5	-
ETHANOL AND BIODIESEL							
BIODIESEL PRODUCTION (10 ³ b/d)	97	91	6.9	100	93	7.3	-
MOTOR ETHANOL CONSUMPTION (10 ³ b/d)	394	551	-28.5	468	551	-15.0	-
ETHANOL EXPORTS (10 ³ b/d)	30	27	9.8	22	20	8.1	-
HYDRATED ETHANOL PRICE (R\$/l)	2.55	2.99	-14.7	3.00	2.91	3.1	-
COAL							
ELECTRICITY GENERATION (MWavg)	644	1,115	-42.3	1,121	1,128	-0.7	-
IMPORT PRICE (US\$ FOB/t)	99.3	148.4	-33.1	97.2	153.6	-36.7	-
NUCLEAR ENERGY							
ELECTRICITY GENERATION - (GWh)	1,482	772	92.0	6,229	5,882	5.9	-
INDUSTRIAL SECTORS							
STEEL PRODUCTION (10 ³ t/day)	71	90	-21.7	79	95	-16.7	-
ALUMINIUM PRODUCTION (10 ³ t/day)	1.5	1.6	-6.2	1.7	1.6	7.4	-
IRON ORE EXPORTS (10 ³ t/day)	646	930	-30.5	713	808	-11.8	-
PELLETS EXPORTS (10 ³ t/day)	46	34	36.5	43	73	-40.1	-
PAPER PRODUCTION (10 ³ t/day)	25.7	27.6	-6.7	28.1	28.5	-1.4	-
PULP PRODUCTION (10 ³ t/day)	60.2	57.3	5.0	57.9	55.6	4.1	-
SUGAR PRODUCTION (10 ³ t/day)	205	121	69.7	60	39	52.8	-
SUGAR EXPORTS (10 ³ t/day)	97	52	87.1	58	41	42.0	-

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

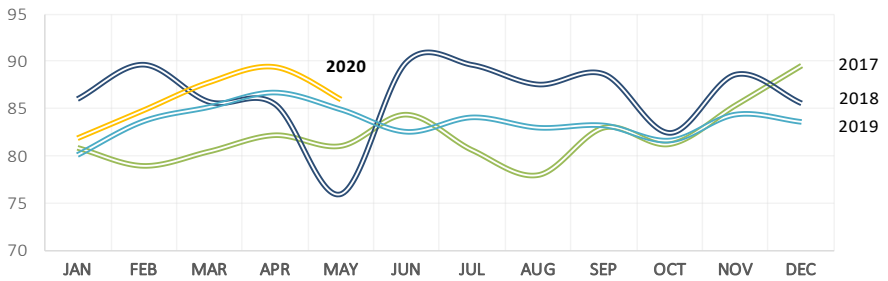
STEEL PRODUCTION (10³ t/d)



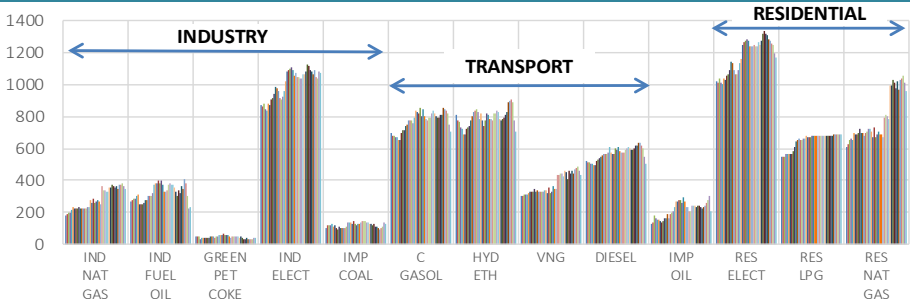
IRON ORE EXPORTS (10³ t/d)



PAPER AND PULP PRODUCTION (10³ t/d)



CONSUMER PRICES - Jan 2017 to May 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.

¹Domestic 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.

²2019 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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