Monthly Energy Bulletin – Brazil

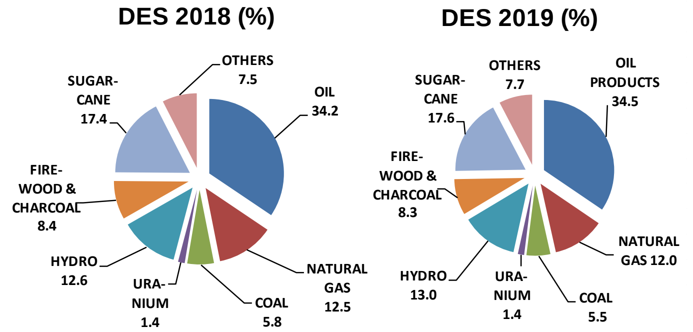
Reference Month: **July 2019**

Domestic Energy Supply

Until July 2019, the sum of commercial and residential electricity grew by 3.8%, petroleum products consumption rose by 0.8%, and light vehicle consumption by 4.7%. In the same period of 2018, these indicators were 0.9%, -3.4% and -2.7%, respectively. This year there is an excellent recovery in the indicators.

Concerning Domestic Energy Supply (DES)[1] of 2019, the current constraints lead to an estimated growth of 1.45% (-1.7% in 2018). With the high of 2019, the DES per capita will still be 8% lower than 2014, and equal to 2011.

Total energy demand for 2019 is expected to increase about 1.5%

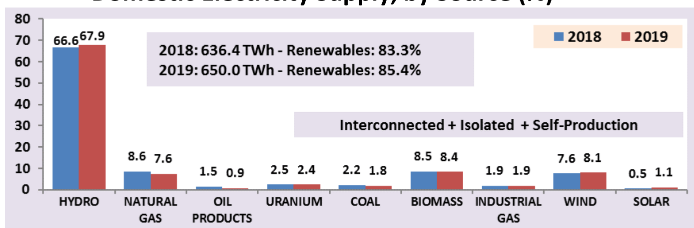


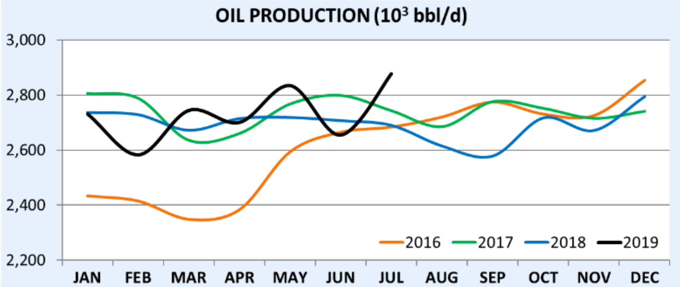
288.4 million toe
45.3% renewables

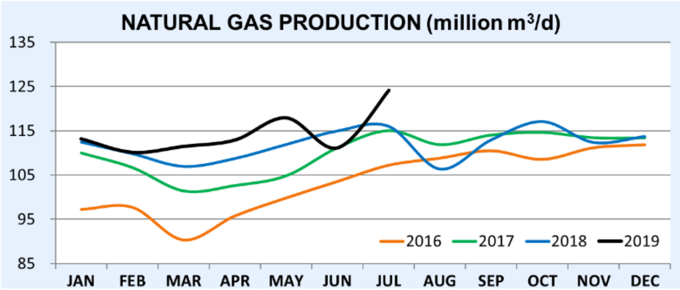
292.6 million toe
45.9% renewables

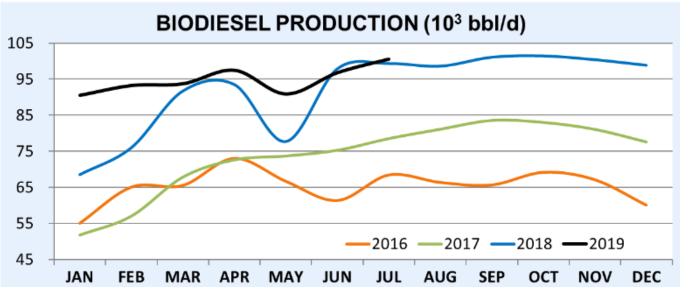
The Domestic Electricity Supply (DELS)[2] of 2019 was estimated at 650.5 TWh, showing an increase of 2.2% over 2018. The share of renewables should exceed 85%, with wind and solar energy continuing to increase their participations.

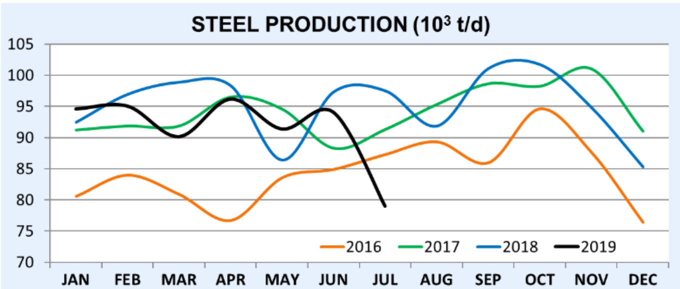
Domestic Electricity Supply, by Source (%)

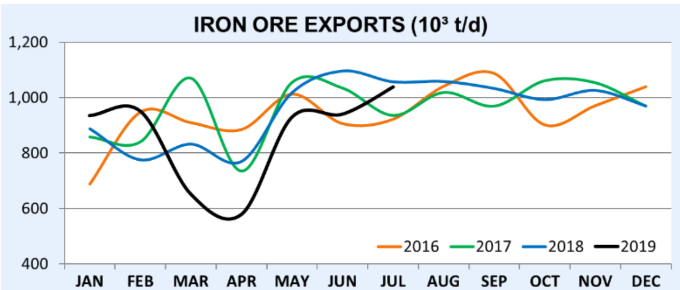


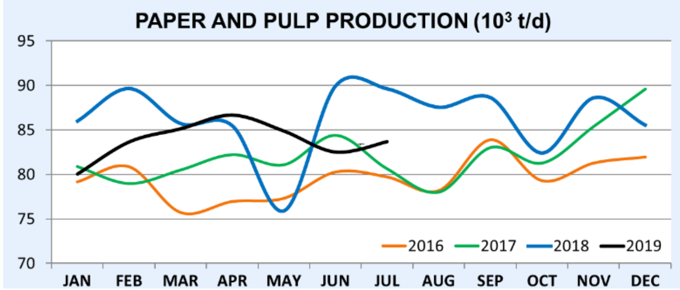


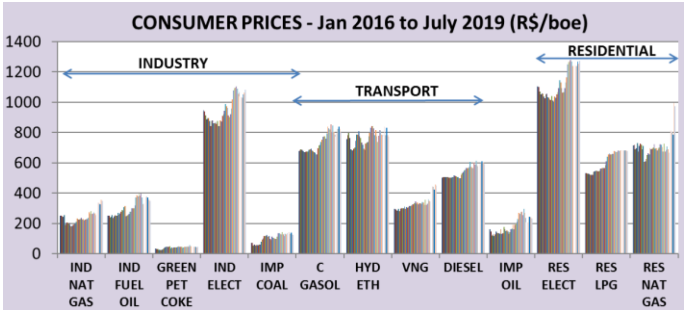












Note: For a better visualization, the minimum scale of the graphs was raised to the level close to the lowest value of the curves.

Methodological Remarks

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.

[1]**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.

[2] The DES and DELS data from 2018 reflect the final results of the Brazilian Energy Balance (BEN), concluded in July by the Energy Research Office (EPE) in cooperation with the MME and its entities and agencies.

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Highlights in July 2019

Oil production turns to rise

Oil production grew 7% in July 2019, over the same month of 2018, accumulating high of 0.9% in the year. Natural gas production was up 7.1% in the month, and accumulated high of 2.7% in the year.

Steel production in fall

Steel production fell 19% in July, accumulating a fall of 4.1% in the year. Iron ore exports reduced 6.6% in the year, and pellet exports fell 28.4% (-6.3% until April).

Hydraulic continues rising

Hydraulic generation accumulated a high of 4.6% in the year. Itaipu's generation accumulates a 21.1% drop (-23.3% to June).

Oil derivatives on the up

Apparent consumption of petroleum products grew by 4.9% in July, and accumulated high of 0.8% in the year (excluding ethanol and biodiesel). Diesel consumption (included biodiesel) increased 9.2%, accumulating high of 9.9% in the year. Consumption of C gasoline also rose, (7.7%), but accumulates low of 4.5% in the year. Hydrous ethanol, with an accumulated increase of 30.2%, has kept the total consumption in light vehicles up. Total demand for natural gas accumulated a decrease of 8.1% in the year (-4.7% until April), with electricity generation having an accumulated decrease of 20.8% (-8.1% until April).

Energy consumption in light vehicles of the Otto cycle (gasoline, ethanol and natural gas) accumulates a high of 4.7% (2.7% up to April, -1.2% in 2018, + 1.7% in 2017, -1.1 % in 2016, + 0.8% in 2015 and + 6.2% in 2014). This indicator directly reflects the purchasing power of the population, as well as an economic improvement expectation.

Electricity consumption slowing down

Electricity consumption, without self-producers, rose 0.9% in July (3.1% in May) and accumulates a high of 1.8% in the year. Residential consumption is up 4.1% and commercial consumption 3.4%. Industrial consumption, on the other hand, is down 1.3%.

Biodiesel production decelerates

Biodiesel production accumulates high of 9.6% in the year (14.3% until May). In the 12 months of previous years, the rates were: 25% in 2018, 12.9% in 2017, -3.6% in 2016 and 15% in 2015).

Pulp production retreated 4.1% in the year (positive 7.1% in 2018, 3.8% in 2017, 7.8% in 2016, 8.5% in 2015 and 9.2% in 2014). Cement consumption shows recovery, with a positive rate of 1.5% in the year (-1.4% until July 2018).

Electricity tariffs in high

The average domestic tariff for residential electricity accumulates 11.6% in the year (12.6% in 2018, stable in 2017, 5.8% in 2016 and 42.5% in 2015). The commercial tariff increased 11.3% (12.4% in 2018, 0.7% in 2017, 5.7% in 2016 and 43.8% in 2015) and the industrial increased 9% (13.4% in 2018, 1.2% in 2017, 3.6% % in 2016 and 51.7% in 2015).

Basic Data

SPECIFICATION	JULY – IN THE MONTH 2019	2018	% 19/18	ACCUMULATED IN THE YEAR 2019	2018	% 19/18	98
OIL							
PRODUCTION - with Shale Oil and NGL(10^3 b/d)	2,877	2,689	7.0	2,734	2,709	0.9	-
IMPORTS AVERAGE PRICE (US$/bbl FOB)	70	80	-12.5	69	71	-2.6	-
OIL PRODUCTS							
TOTAL CONSUMPTION (10^3 b/day)	2,681	2,556	4.9	2,443	2,424	0.8	**100.0**
hereof: DIESEL with biodiesel - (10^3 b/day)	1,104	1,011	9.2	1,026	934	9.9	39.9
hereof: GASOLINE C (10^3 b/day)	655	608	7.7	644	675	-4.5	21.1
CONSUMER PRICE - DIESEL (R$/l)	3.54	3.38	4.8	3.55	3.43	3.4	-
CONSUMER PRICE - GASOLINE C (R$/l)	4.35	4.49	-3.1	4.37	4.30	1.8	-
CONSUMER PRICE - LPG (R$/13 kg)	69.1	68.6	0.7	69.2	67.5	2.6	-
NATURAL GAS							
PRODUCTION (10^6 m^3/day)	124.2	116.0	7.1	114.5	111.6	2.7	-
IMPORTS (10^6 m^3/day)	21.3	37.0	-42.5	22.9	28.7	-20.2	-
NON-UTILIZED AND REINJECTION (10^6 m^3/day)	44.0	40.0	9.9	43.0	37.5	14.6	-
AVAILABILITY FOR CONSUMPTION (10^6 m^3/day)	101.4	113.0	-10.2	94.4	102.8	-8.1	**100.0**
INDUSTRIAL CONSUMPTION (10^6 m^3/day)	37.8	41.4	-8.6	37.6	39.9	-5.8	39.8
POWER GENERATION CONS. (10^6 m^3/day)	29.6	36.7	-19.4	22.0	27.8	-20.8	23.3
INDUSTRIAL PRICE SP(*) (US$/MMBtu) -	16.4	12.4	32.6	15.4	12.1	27.1	-
MOTOR PRICE SP (US$/MMBtu)	21.2	15.3	39.0	19.8	16.9	17.4	-
RESIDENTIAL PRICE SP (US$/MMBtu)	45.9	31.9	43.8	38.7	35.6	8.7	-
ELECTRICITY							
NATIONAL INTERCONNECTED SYSTEM	62,208	62,649	-0.7	67,189	65,633	2.4	**100.0**
SOUTHEAST/MIDWEST POWER LOAD (MWavg	35,786	36,439	-1.8	39,147	38,253	2.3	58.3
SOUTH POWER LOAD (MWavg)	10,933	10,696	2.2	11,460	11,448	0.1	17.1
NORTHEAST POWER LOAD (MWavg)	10,088	10,151	-0.6	10,877	10,533	3.3	16.2
NORTH POWER LOAD (MWavg)	5,437	5,126	6.1	5,498	5,387	2.1	8.2
TOTAL CONSUMPTION (TWh) (**)	38.3	37.9	0.9	279.7	274.7	1.8	**100.0**
RESIDENTIAL	10.9	10.6	2.6	83.0	79.8	4.1	29.7
INDUSTRIAL	14.0	14.2	-1.2	96.6	97.8	-1.3	34.5
COMMERCIAL	6.9	6.7	2.7	54.0	52.2	3.4	19.3
OTHER SECTORS	6.4	6.4	1.1	46.2	44.9	2.7	16.5
PLANTS ENTRY INTO OPERATING (MW)	25	65	-61.0	3,346	3,014	11.0	-
RESIDENTIAL PRICE (R$/MWh)	771	757	1.8	759	681	11.6	-
COMMERCIAL PRICE (R$/MWh)	690	685	0.7	679	610	11.3	-
INDUSTRIAL PRICE (R$/MWh)	656	654	0.2	638	585	9.0	-
ETHANOL AND BIODIESEL							
BIODIESEL PRODUCTION (10^3 b/d)	100	99	1.1	95	86	9.6	-
MOTOR ETHANOL CONSUMPTION (10^3 b/d)	555	491	13.1	549	470	16.7	-
ETHANOL EXPORTS (10^3 b/d)	34	36	-7.3	28	22	29.1	-
HYDRATED ETHANOL PRICE (R$/l)	2.78	2.79	-0.3	2.86	2.93	-2.5	-
COAL							
ELECTRICITY GENERATION (MWavg)	2,072	1,533	35.2	1,208	1,455	-17.0	-
IMPORT PRICE (US$ FOB/t)	139.6	142.7	-2.1	149.6	143.7	4.1	-
NUCLEAR ENERGY							
ELECTRICITY GENERATION - (GWh)	1,490	1,493	-0.2	8,799	8,938	-1.6	-
INDUSTRIAL SECTORS							
STEEL PRODUCTION (10^3 t/day)	79	97	-19.0	91	95	-4.1	-
ALUMINIUM PRODUCTION (10^3 t/day)	1.8	1.7	6.4	1.6	1.9	-14.4	-
IRON ORE EXPORTS (10^3 t/day)	1,039	1,056	-1.7	861	921	-6.6	-
PELLETS EXPORTS (10^3 t/day)	57	104	-45.1	65	91	-28.4	-
PAPER PRODUCTION (10^3 t/day)	28.7	29.5	-2.8	28.6	28.4	0.7	-
PULP PRODUCTION (10^3 t/day)	55.0	60.1	-8.4	55.2	57.6	-4.1	-
SUGAR PRODUCTION (10^3 t/daY)	150	158	-5.1	70	72	-2.8	-
SUGAR EXPORTS (10^3 t/day)	56	61	-8.0	44	58	-24.2	-

(*) SP is the acronym of the state of São Paulo.

(**) The traditional self-producers (consumers that do not use public grid) is not included.