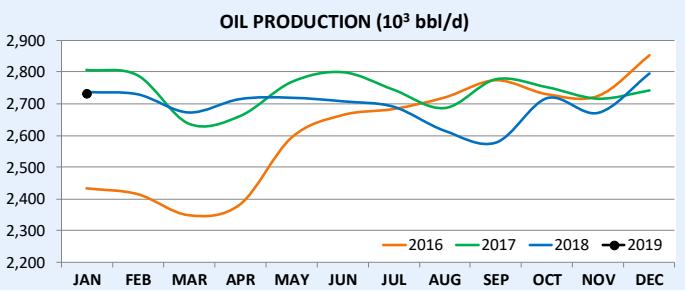

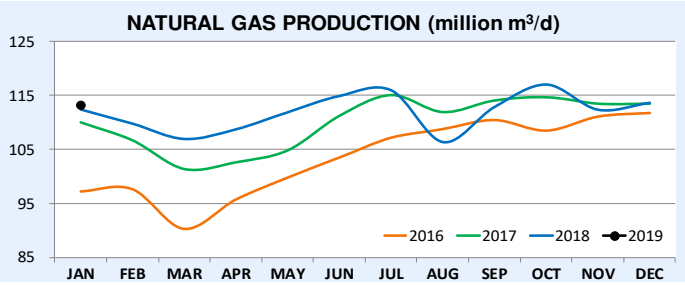

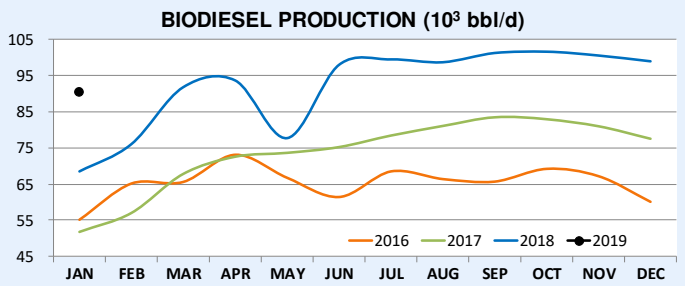

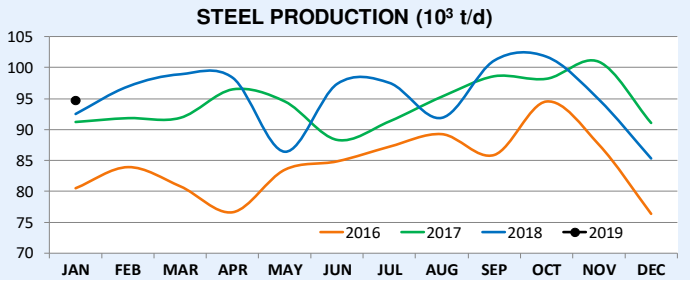

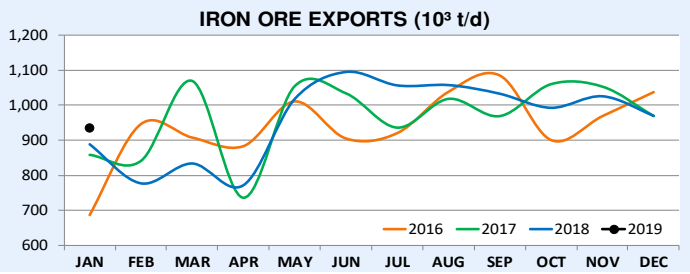

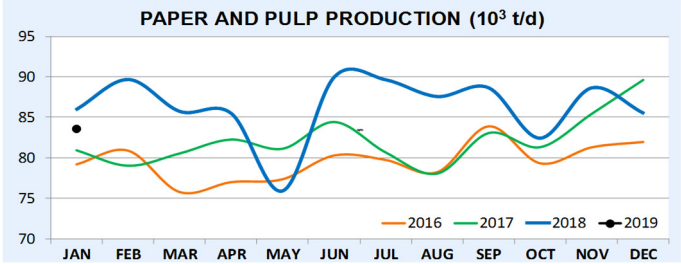

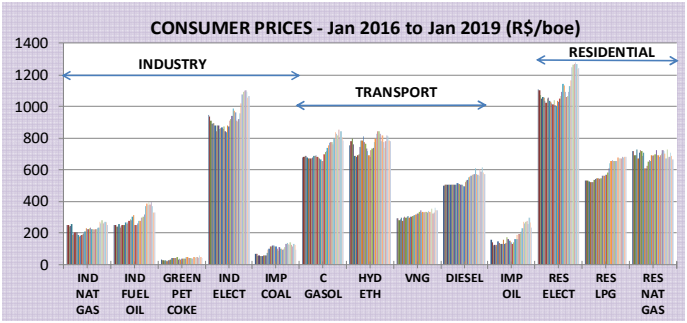

Note: For a better visualization, the minimum scale of the graphs was raised to the level close to the lowest value of the curves.

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.

Apparent consumption of oil derivatives = distributors' sales (+) Petrobras' own consumption (including refinery gas) (+) Petrobras' direct sales (+) consumer imports. The monthly data published in the press and on the ANP[3] website considers only the sales of distributors (+ or – 80% of total).

[1]**Domestic Energy Supply (DES), or Total 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 2017 reflect the final position of the 2018 cycle of the Brazilian Energy Balance (BEN), prepared by Energy Research Office (EPE) in cooperation with MME and entities of the energy sector.

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Monthly Energy Bulletin - Brazil

Reference Month: January 2019

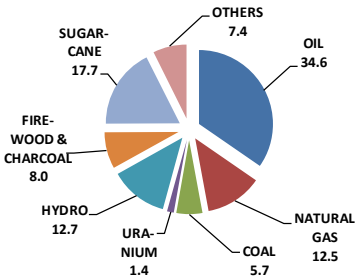
Domestic Energy Supply

In Januar 2019, the energy sources associated with families consumption had highs. Energy consumption in light vehicles grew by 3.5%, residential electricity consumption grew by 8% and consumption increased by 5.9%. The strong heat and absence of rainfall favored tourism and refrigeration use.

For the year 2019, the economic and energy indicators pointed to an slight increase above 2% on Domestic Energy Supply (DES)[1]. Even so, the DES will be about 4% below the figure of 2014. By January 2019, the DES rate was 0.8%.

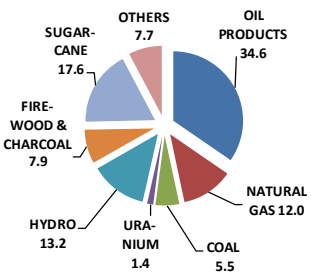
Total energy demand for 2019 is expected to increase over 2%

DES 2018 (%)



287.8 million toe
45.0% renewables

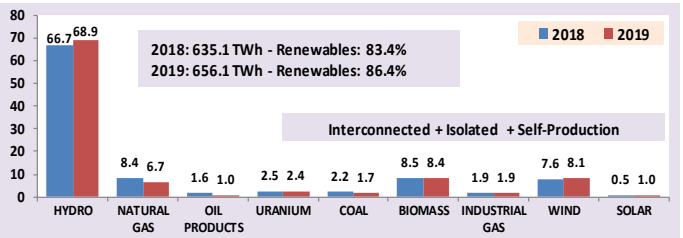
DES 2019 (%)



293.6 million toe
45.7% renewables

The Domestic Electricity Supply (DELS)[2] of 2019 was estimated at 656.1 TWh, showing an increase of 3.1% over 2018. The share of renewables should go beyond 84%. Wind and solar PV energies keep increasing their share in DELS matrix.

Domestic Electricity Supply, by Source (%)



MINISTRY OF MINES AND ENERGY - MME
SECRETARIAT OF ENERGY PLANNING AND DEVELOPMENT
Department of Information and Studies on Energy

Highlights in January 2019

Oil production stable

Oil production fell by 0.2% in January 2019 over the same month of 2018, while natural gas production rose slightly by 0.7%.

Steel production in a rise

Steel production grew 2.3% in January, after a decline of 6.3% in December 2018. In 2018, production increased by 1.1%. Exports of iron ore started the year with an increase of 5.4% and those of pellets with an increase of almost 42%.

Hydraulic grows up in this year

Hydraulic generation grew almost 11% in January (+ 50% from June 2018 to January 2019). Itaipu's generation declined 22% in January.

Oil derivatives stable

Apparent consumption of petroleum products fell by 0.2% in January (excluding ethanol and biodiesel). Diesel consumption, including biodiesel, was up 11.3%, and that of gasoline C, down 7.7%. The gasoline recoil was offset by the 35% increase in hydrated ethanol. Total demand for natural gas fell 8.5% and electricity generation demand decreased by 31.2%.

Energy consumption in light vehicles of the Otto cycle (gasoline, ethanol and natural gas) increased 3.5% in January (-1.2% in 2018, + 1.7% in 2017, -1.1 % in 2016, + 0.8% in 2015 and + 6.2% in 2014). It is an indicator that directly reflects the economy effects on the population purchasing power.

Electricity consumption with a strong rise

Electricity consumption, excluding autoproducers that do not use the public grid, grew by 3.8% in January. The strong heat raised the use of air conditioning. Residential consumption increased by 8.0% and commercial consumption by 5.9%. On the other hand, industrial consumption showed a negative rate of 0.4%, influenced by the 23% drop in aluminum production.

Biodiesel production keeps growing

Biodiesel production continued to rise in January, with a significant 32.2% (25% in 2018, 12.9% in 2017, -3.6% in 2016 and 15% in 2015).

Pulp production declined 4.4% in January (+ 7.1% in all 2018, 3.8% in 2017, 7.8% in 2016, 8.5% in 2015 and 9.2% in 2014).

Paper production grew by 0.4% in January (0.8% in all 2018, + 1.7% in 2017).

Electricity tariffs in high

The average domestic tariff for residential electricity grew by 13.7% in January (12.6% in 2018, stable in 2017, 5.8% in 2016 and 42.5% in 2015). The commercial tariff increased 12% (12.4% in 2018, 0.7% in 2017, 5.7% in 2016 and 43.8% in 2015) and the industrial increased 10.9% (13.4% in 2018, 1.2% in 2017, 3.6% % in 2016 and 51.7% in 2015).

Basic Data

SPECIFICATION	JANUARY						
	IN THE MONTH			ACCUMULATED IN THE YEAR			
	2019	2018	%19/18	2019	2018	%19/18	98
OIL							
PRODUCTION - with Shale Oil and NGL(10^3 b/d)	2,730	2,736	-0.2	2,730	2,736	-0.2	-
IMPORTS AVERAGE PRICE (US$/bbl FOB)	74	59	25.5	74	59	25.5	-
OIL PRODUCTS							
TOTAL CONSUMPTION (10^3 b/day)	2,366	2,369	-0.2	2,366	2,369	-0.2	**100.0**
hereof: DIESEL with biodiesel - (10^3 b/day)	985	885	11.3	985	885	11.3	39.6
hereof: GASOLINE C (10^3 b/day)	634	687	-7.7	634	687	-7.7	21.4
CONSUMER PRICE - DIESEL (R$/l)	3.44	3.38	1.8	3.44	3.38	1.8	-
CONSUMER PRICE - GASOLINE C (R$/l)	4.27	4.19	1.9	4.27	4.19	1.9	-
CONSUMER PRICE - LPG (R$/13 kg)	69.3	67.3	2.9	69.3	67.3	2.9	-
NATURAL GAS							
PRODUCTION (10^6 m^3/day)	113.2	112.4	0.7	113.2	112.4	0.7	-
IMPORTS (10^6 m^3/day)	17.6	21.7	-18.8	17.6	21.7	-18.8	-
NON-UTILIZED AND REINJECTION (10^6 m^3/day)	39.3	34.1	15.2	39.3	34.1	15.2	-
AVAILABILITY FOR CONSUMPTION (10^6 m^3/day)	91.6	100.1	-8.5	91.6	100.1	-8.5	**100.0**
INDUSTRIAL CONSUMPTION (10^6 m^3/day)	38.1	39.1	-2.5	38.1	39.1	-2.5	41.6
POWER GENERATION CONS. (10^6 m^3/day)	19.0	27.6	-31.2	19.0	27.6	-31.2	20.7
INDUSTRIAL PRICE SP(*) (US$/MMBtu) - consumption range of 20,000 m^3/day	12.4	12.5	-1.1	12.4	12.5	-1.1	-
MOTOR PRICE SP (US$/MMBtu)	16.7	18.4	-9.1	16.7	18.4	-9.1	-
RESIDENTIAL PRICE SP (US$/MMBtu)	32.5	38.3	-15.2	32.5	38.3	-15.2	-
ELECTRICITY							
NATIONAL INTERCONNECTED SYSTEM	72,165	67,740	6.5	72,165	67,740	6.5	**100.0**
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	42,472	39,416	7.8	42,472	39,416	7.8	58.9
SOUTH POWER LOAD (MWavg)	11,983	12,079	-0.8	11,983	12,079	-0.8	16.6
NORTHEAST POWER LOAD (MWavg)	11,274	10,930	3.1	11,274	10,930	3.1	15.6
NORTH POWER LOAD (MWavg)	5,371	5,411	-0.7	5,371	5,411	-0.7	7.4
TOTAL CONSUMPTION (TWh) (**)	41.1	39.6	3.8	41.1	39.6	3.8	**100.0**
RESIDENTIAL	12.8	11.8	8.0	12.8	11.8	8.0	31.1
INDUSTRIAL	13.6	13.6	-0.4	13.6	13.6	-0.4	33.0
COMMERCIAL	8.1	7.6	5.9	8.1	7.6	5.9	19.7
OTHER SECTORS	6.7	6.5	2.3	6.7	6.5	2.3	16.2
PLANTS ENTRY INTO OPERATING (MW)	322	252	27.8	322	252	27.8	-
RESIDENTIAL PRICE (R$/MWh)	754	663	13.7	754	663	13.7	-
COMMERCIAL PRICE (R$/MWh)	662	591	12.0	662	591	12.0	-
INDUSTRIAL PRICE (R$/MWh)	646	583	10.9	646	583	10.9	-
ETHANOL AND BIODIESEL							
BIODIESEL PRODUCTION (10^3 b/d)	91	69	32.2	91	69	32.2	-
MOTOR ETHANOL CONSUMPTION (10^3 b/d)	548	465	18.0	548	465	18.0	-
ETHANOL EXPORTS (10^3 b/d)	17	25	-31.1	17	25	-31.1	-
HYDRATED ETHANOL PRICE (R$/l)	2.81	2.98	-5.8	2.81	2.98	-5.8	-
COAL							
ELECTRICITY GENERATION (MWavg)	602	1,396	-56.9	602	1,396	-56.9	-
IMPORT PRICE (US$ FOB/t)	108.8	130.7	-16.7	108.8	130.7	-16.7	-
NUCLEAR ENERGY							
ELECTRICITY GENERATION - (GWh)	1,418	1,400	1.3	1,418	1,400	1.3	-
INDUSTRIAL SECTORS							
STEEL PRODUCTION (10^3 t/day)	95	92	2.3	95	92	2.3	-
ALUMINIUM PRODUCTION (10^3 t/day)	1.7	2.2	-23.1	1.7	2.2	-23.1	-
IRON ORE EXPORTS (10^3 t/day)	936	888	5.4	936	888	5.4	-
PELLETS EXPORTS (10^3 t/day)	133	94	41.6	133	94	41.6	-
PAPER PRODUCTION (10^3 t/day)	27.7	27.6	0.4	27.7	27.6	0.4	-
PULP PRODUCTION (10^3 t/day)	55.8	58.4	-4.4	55.8	58.4	-4.4	-
SUGAR PRODUCTION (10^3 t/dAY)	12	13	-4.3	12	13	-4.3	-
SUGAR EXPORTS (10^3 t/day)	33	51	-34.2	33	51	-34.2	-

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

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