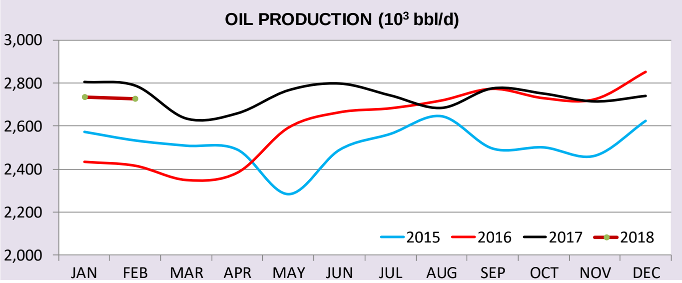

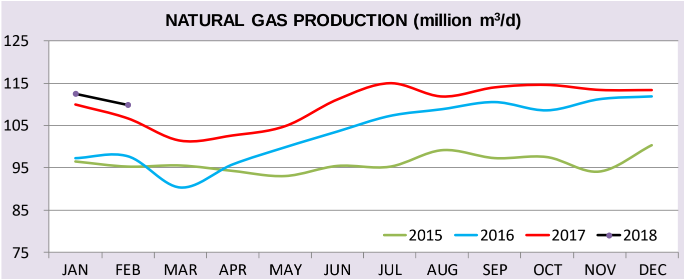

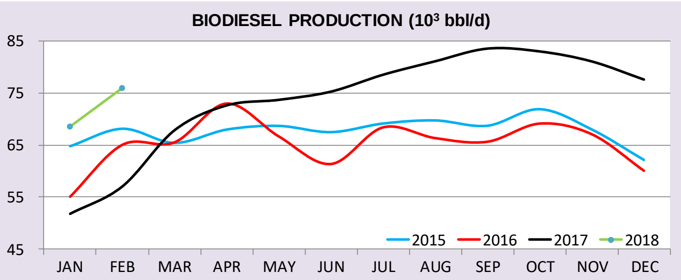

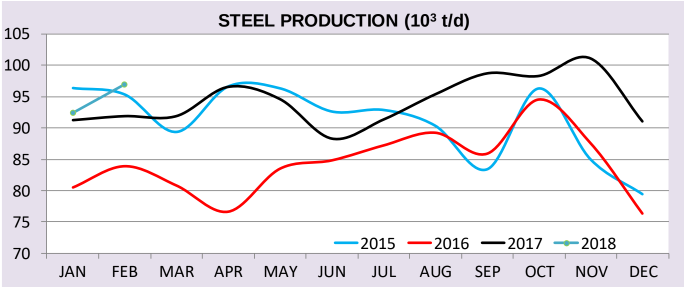

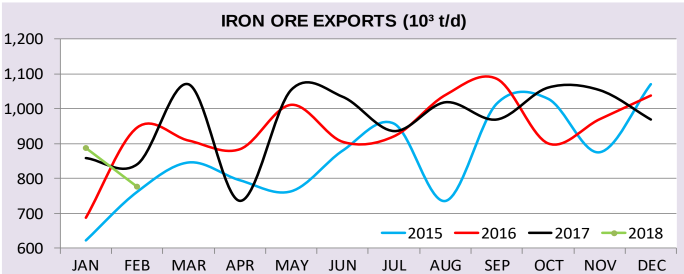

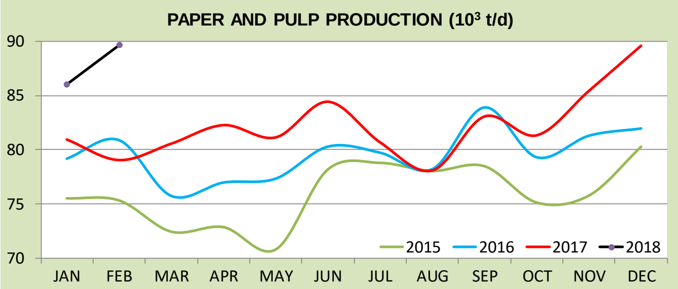

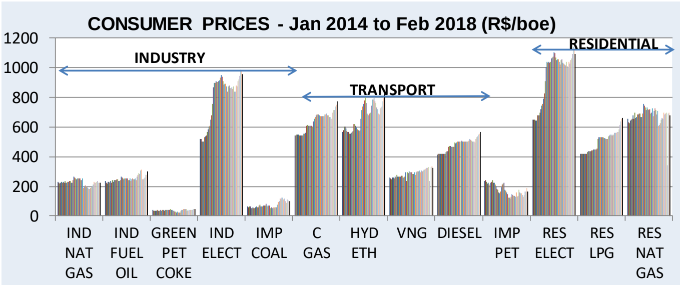

Note: For a better visualization, the minimum scale of the graphs was raised to the level close to the lowest value of the curves.

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. The monthly data published in the press and on the ANP[3] website do not consider the own consumption and direct sales of Petrobras, whose volume is about 20% of the total oil products consumption.

[1] **Domestic Energy Supply (DES), or Total Energy Demand**, includes final energy consumption in the residential sector and in the other economic sectors, includes losses in transmission and distribution, and losses on power transformation.

[2] The DES 2017 data still reflect the positions of the bulletin of December / 2017. On the other hand, the DELS data for 2017 account for results of the National Energy Balance - BEN, cycle 2018, although not yet definitive.

[3] **ANP**: Petroleum, Natural Gas, and Biofuels National Agency.

[4] **SECEX**: Secretariat of Foreign Trade.

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Monthly Energy Bulletin - Brazil

Reference Month: February 2018

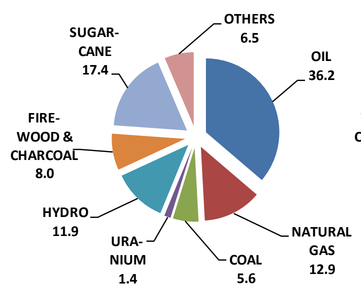
Domestic Energy Supply

The Domestic Energy Supply (DES)[1] of 2017 was 293.5 million toe, according to the 2018 cycle of the Brazilian Energy Balance - BEB, concluded by the Energy Research Office, with a cooperation of the MME and Energy Sector agents. According to the Monthly Energy Bulletin of December 2017, the DES in 2017 was estimated at **293.3 million toe** (almost no deviation from BEN), which shows the quality and timeliness of the information in the bulletin.

Economic and energy indicators up to February 2018 indicate that the DES[2] increased by 0.3% over the same period in 2017. For the full year of 2018, estimates indicate that the DES may grow slightly above 2%.

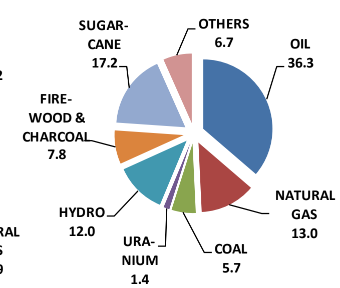
Total energy demand in 2018 may grow slightly above 2.0%.

DES 2017 (%)



293.5 million toe
43.2% renewables

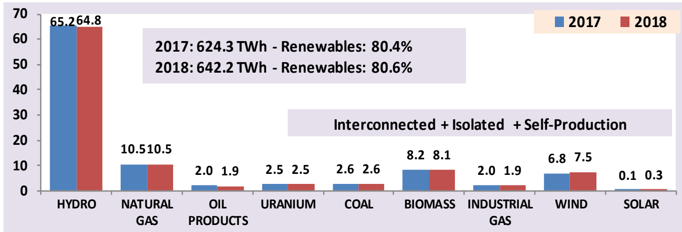
DES 2018 (%)



299.4 million toe
43.1% renewables

The Domestic Electricity Supply – DELS[2] of 2018 was estimated at 642.9 TWh, an increase of 2.8% over 2017. The proportion of renewable sources is expected to remain close to 80%. The wind power continues to increase its participation and the PV energy starts a process of strong increase in the 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 until February 2018

Oil production with a slight decrease

Oil production up to February was down 2.4%. Natural gas production grew by 2.6% over the same period of 2017.

Steel production in a high

Steel production grew 5.5% in February 2018 and 3.3% in the year. Iron ore exports recoiled 1.7% in the year and pellet exports grew by 10%.

Hydraulic supply in decline

Hydraulic generation accumulates a drop of 3.2% in the year. Itaipu generation accumulates a 5.5% increase.

Oil derivatives declining

Apparent consumption of petroleum products fell by 1.9% to February 2018, according to ANP³ records and adjustments in imports of "other petroleum products" from SECEX⁴. Diesel consumption fell by 0.3% in the year and gasoline consumption decreased 10.3%. The decline in gasoline was offset by a sharp increase in ethanol demand, of 9.5%. Total demand for natural gas grew 10.6%, and sales for electricity generation, 16.0%.

Energy consumption in light vehicles of the Otto cycle (gasoline, ethanol and natural gas) remained stable until February (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's purchasing power.

Electricity consumption with small high

Electricity consumption (excluding self-production that do not use the public grid) accumulates an increase of 1.1% in the year (0.9% in 2017 and -0.9% in 2016). Industrial consumption is the only one with a positive rate of 4.3%. Residential consumption is stable in the year, and the commercial, retreated by 1.3%. A less severe summer up until February contributed to a lower consumption.

Biodiesel production in a strong high

Biodiesel production had a strong increase of 32.3% in February, accumulating a rate of 32.7% in the year (12.9% in 2017, -3.6% in 2016 and 15% in 2015).

Pulp production accumulate a of 13.1% in the year, but having a low comparison base in 2017 (3.8% in 2017, 7.8% in 2016, 8.5% in 2015 and 9% in , 2% in 2014). Paper production accumulates growth of 3.2% (1.7% throughout 2017).

Electricity rates increases

The average domestic tariff for residential electricity grew 6.1% in the year, over the period of 2017 (stable in 2017, 5.8% in 2016 and 42.5% in 2015). The commercial rate increased by 6.7% (0.7% in 2017, 5.7% in 2016 and 43.8% in 2015), and industrial tariffs increased 8.2% (1.2% in 2017, 3.6% % in 2016 and 51.7% in 2015).

Basic data

SPECIFICATION	FEBRUARY – IN THE MONTH			ACCUMULATED IN THE YEAR			
	2018	2017	%18/17	2018	2017	%18/17	%2018
OIL							
PRODUCTION - with Shale Oil and NGL(10^3 b/d)	2,736	2,806	-2.5	2,732	2,798	-2.4	-
IMPORTS AVERAGE PRICE (US$/bbl FOB)	59	47	24.4	63	49	29.9	-
OIL PRODUCTS							
TOTAL CONSUMPTION (10^3 b/day)	2,369	2,403	-1.4	2,441	2,489	-1.9	**100.0**
hereof: DIESEL with biodiesel - (10^3 b/day)	885	839	5.5	894	896	-0.3	34.8
hereof: GASOLINE C (10^3 b/day)	687	755	-9.0	695	775	-10.3	22.8
CONSUMER PRICE - DIESEL (R$/l)	3.38	3.09	9.2	3.38	3.08	9.9	-
CONSUMER PRICE - GASOLINE C (R$/l)	4.19	3.77	11.2	4.20	3.73	12.4	-
CONSUMER PRICE - LPG (R$/13 kg)	67.3	55.6	21.0	67.1	55.5	20.9	-
NATURAL GAS							
PRODUCTION (10^6 m^3/day)	112.4	109.9	2.3	111.2	108.4	2.6	-
IMPORTS (10^6 m^3/day)	21.7	16.4	32.5	26.8	17.7	51.3	-
NON-UTILIZED AND REINJECTION (10^6 m^3/day)	34.1	32.3	5.5	33.5	31.8	5.3	-
AVAILABILITY FOR CONSUMPTION (10^6 m^3/day)	100.1	94.1	6.4	104.4	94.3	10.8	**100.0**
INDUSTRIAL CONSUMPTION (10^6 m^3/day)	36.5	38.3	-4.8	37.1	38.8	-4.4	35.5
POWER GENERATION CONS. (10^6 m^3/day)	27.6	23.7	16.3	26.7	23.0	16.0	25.5
INDUSTRIAL PRICE SP(*) (US$/MMBtu) - consumption range of 20,000 m^3/day	12.5	10.3	21.0	12.4	10.6	17.0	-
MOTOR PRICE SP (US$/MMBtu)	18.2	17.4	5.0	18.3	17.4	5.5	-
RESIDENTIAL PRICE SP (US$/MMBtu)	37.9	35.7	6.1	38.1	35.2	8.1	-
ELECTRICITY							
NATIONAL INTERCONNECTED SYSTEM	68,301	69,397	-1.6	68,467	68,490	0.0	**100.0**
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	39,783	40,524	-1.8	39,950	40,010	-0.2	58.3
SOUTH POWER LOAD (MWavg)	12,309	12,837	-4.1	12,202	12,458	-2.1	17.8
NORTHEAST POWER LOAD (MWavg)	10,648	11,007	-3.3	10,829	10,845	-0.1	15.8
NORTH POWER LOAD (MWavg)	5,561	5,029	10.6	5,486	5,176	6.0	8.0
TOTAL CONSUMPTION (TWh) (**)	39.2	38.6	1.6	78.7	77.9	1.1	**100.0**
RESIDENTIAL	11.5	11.4	1.1	23.4	23.4	0.0	29.7
INDUSTRIAL	13.9	13.3	4.6	27.5	26.3	4.3	34.9
COMMERCIAL	7.6	7.7	-0.6	15.3	15.5	-1.3	19.4
OTHER SECTORS	6.2	6.2	-0.9	12.6	12.7	-0.9	16.0
PLANTS ENTRY INTO OPERATING (MW)	745	174	327.1	997	1,354	-26.4	-
RESIDENTIAL PRICE (R$/MWh)	645	616	4.8	655	617	6.1	-
COMMERCIAL PRICE (R$/MWh)	641	548	16.9	650	549	18.4	-
INDUSTRIAL PRICE (R$/MWh)	552	520	6.0	567	524	8.3	-
ETHANOL AND BIODIESEL							
BIODIESEL PRODUCTION (10^3 b/d)	76	57	33.2	72	54	32.7	-
MOTOR ETHANOL CONSUMPTION (10^3 b/d)	411	409	0.5	441	402	9.5	-
ETHANOL EXPORTS (10^3 b/d)	14	14	1.6	20	18	10.9	-
HYDRATED ETHANOL PRICE (R$/l)	3.02	2.78	8.7	3.00	2.85	5.4	-
COAL							
ELECTRICITY GENERATION (MWavg)	1,508	1,346	12.0	1,452	1,268	14.5	-
IMPORT PRICE (US$ FOB/t)	128.4	159.4	-19.5	129.5	148.0	-12.5	-
NUCLEAR ENERGY							
ELECTRICITY GENERATION - (GWh)	826	1,199	-31.1	2,226	2,640	-15.7	-
INDUSTRIAL SECTORS							
STEEL PRODUCTION (10^3 t/day)	97	92	5.5	95	92	3.3	-
ALUMINIUM PRODUCTION (10^3 t/day)	2.2	2.2	-1.6	2.2	2.2	-1.5	-
IRON ORE EXPORTS (10^3 t/day)	776	840	-7.6	835	850	-1.7	-
PELLETS EXPORTS (10^3 t/day)	73	79	-6.8	84	77	10.0	-
PAPER PRODUCTION (10^3 t/day)	30.0	28.6	4.9	28.8	27.9	3.2	-
PULP PRODUCTION (10^3 t/day)	59.6	50.4	18.4	58.9	52.1	13.1	-
SUGAR PRODUCTION (10^3 t/daY)	5	8	-40.9	9	12	-27.8	-
SUGAR EXPORTS (10^3 t/day)	50	65	-22.6	50	68	-26.3	-

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

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