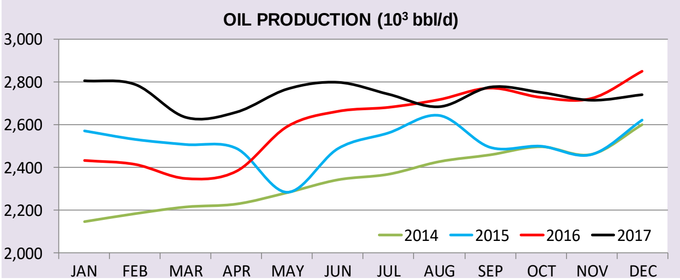

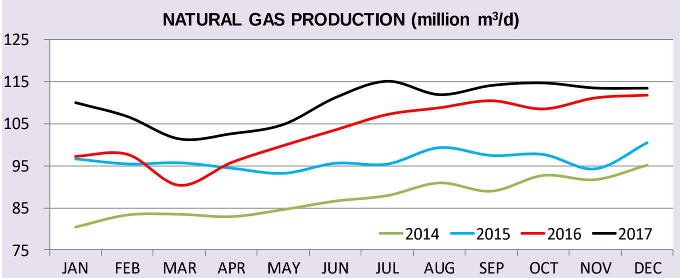

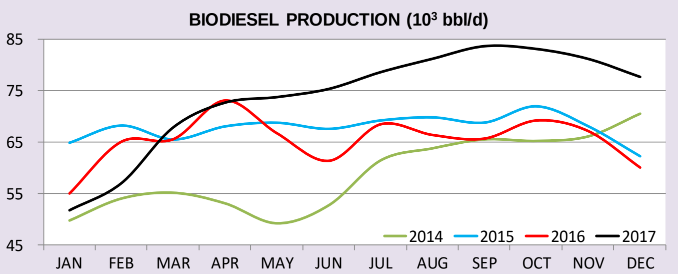

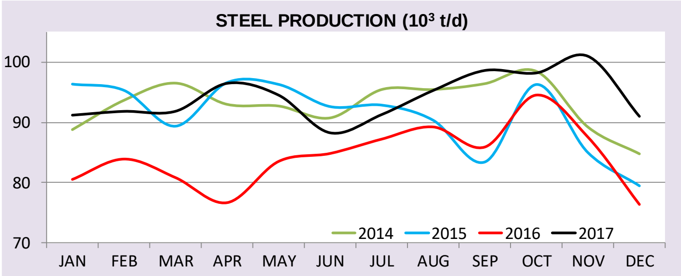

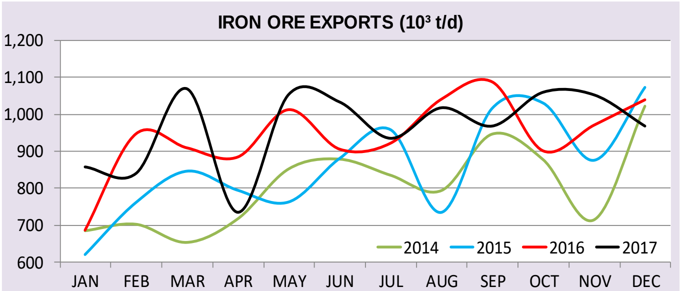

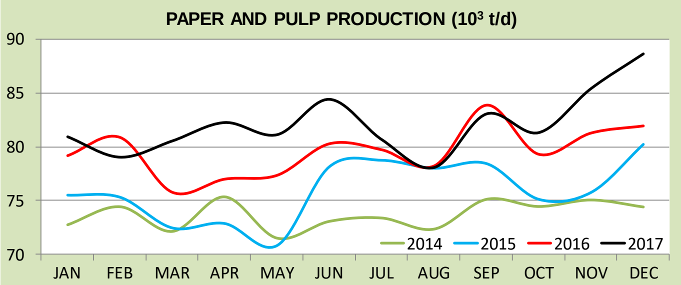

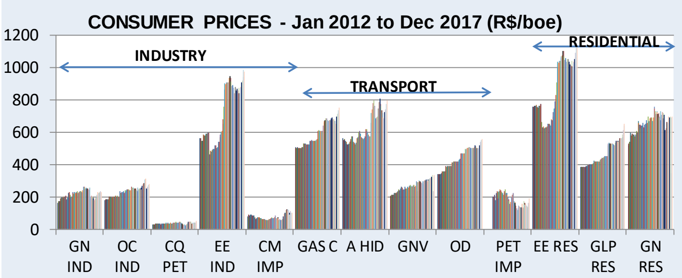

Note: For a better visualization, the minimum scale of the graphs was raised to the level close to the lowest value of the curves.

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 is equal to domestic production (+) import (-) unused (-) reinjection.

Apparent consumption of oil derivatives is equal distributors' sales (+) Petrobras' own consumption (including refinery gas) (+) Petrobras' direct sales. The monthly data published in the press and on the ANP website do not consider the own consumption and direct sales of Petrobras, whose volume is about 20% of the total oil products consumption.

(*) **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.

(**) The DES and DELS data for 2016 reflect the final results of the Cicle 2017 of Brazilian Energy Balance – BEB, that is elaborated by the Energy Research Company (EPE) in colaboration with MME and with the others sectorial players.

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Monthly Energy Bulletin - Brazil

Reference Month: December 2017

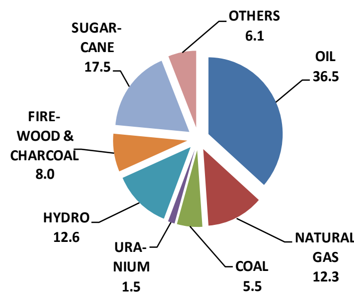
Domestic Energy Supply

Brazil had no energy deficit in 2017, a fact that will occur for the first time since 1940, the initial year of global energy statistics. Growth rates in oil and natural gas production, above 5% in the year, coupled with a low global energy demand, will provide a small surplus.

Economic and energy indicators, up to December, indicate that the Domestic Energy Supply - DES* increased by 1.7% over the same period of 2016. From this indicator, 0.5 percentage point is due to the increase of losses in the expansion of thermoelectric generation. Thus, the consumption sector is expected to grow 1.2%.

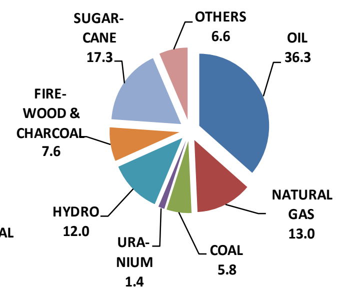
Total energy demand in 2017 grows about 1.7%

DES 2016 (%)



288.4million toe
43.5% renewables

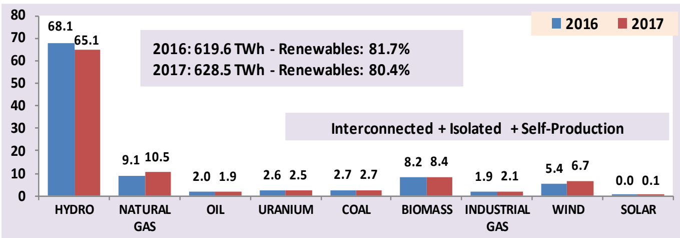
DES 2017 (%)



293.3 million toe
42.8% renewables

The Domestic Electricity Supply - DELS** of 2017 was estimated at 628.5 TWh, an increase of 1.4% over 2016. The proportion of renewable sources is expected to remain close to 80% in 2017. The wind power goes to 6.7% share, increasing by more than 1 percentage point in the DELS matrix. Solar energy is now shown in the matrix due to its strong expansion trend.

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 to December 2017

Oil production increased significantly

Oil production closed 2017 with an increase of 4.9% and natural gas production, with 6.2%.

Steel production in a strong high

Steel production ended 2017 with an expressive growth rate of 11.7%, with the highest in the state of Ceará. Exports of iron ore increased by 2.8% in the year and pellets, by 3.2%, this item showing a strong recovery throughout the year (-38% in January 2017).

Hydraulic supply in decline

Hydraulic generation started 2017 with an increase above 10%, but in the year the rate was negative at 3%. The import of Itaipu closed 2017 with a 14% decrease.

Oil derivatives with low growth

Apparent consumption of oil derivatives grew by 1.1% in 2017. Diesel consumption fell by 0.7% in the year and gasoline consumption increased by 3%, these sources accounting for 70% of the total oil products demand. Total natural gas demand grew by 6.8% in the year, with electric generation at the highest rate of 16.3%.

Energy consumption in light Otto cycle vehicles (gasoline, ethanol and natural gas) increased by 0.9% in the year. This indicator was -1.1% in 2016, +0.8% in 2015 and +6.2% in 2014. This is an important indicator that directly reflects the effects of the economy on the purchasing power of the population.

Electricity consumption with small high

Electricity consumption (excluding self-producers that do not use the public grid) ended 2017 with an increase of 0.9%, a rate lower than the OIE, which is uncommon. In 2016, the rate was negative by 1.6%. Residential consumption showed the highest rate (1.2%), followed by industry (0.8%). The sum of other sectors was practically stable.

Biodiesel production in strong high

The production of biodiesel had a strong increase in the second half of 2017, closing the year with growth of 12.9%. In 2016, the rate was -3.6%, and in 2015, + 15%.

Pulp production increased by 4.1% in 2017 (7.8% in 2016, 8.5% in 2015 and 9.2% in 2014). Paper production grew by 1.7%.

Electricity rates recoil

The national average residential electricity tariff was stable in 2017 (+5.8% in the whole 2016 and +42.5% in 2015). The commercial tariff increased 0.7% (+5.7% in 2016 and +43.8% in 2015) and the industrial rose 1.2% (+3.6% in 2016 and +51.7% in 2015).

Basic data

SPECIFICATION	DECEMBER						
	IN THE MONTH			ACCUMULATED IN THE YEAR			
	2017	2016	%17/16	2017	2016	%17/16	%2017
OIL							
PRODUCTION - with Shale Oil and NGL(10^3 b/d)	2.742	2.853	-3,9	2.739	2.611	4,9	-
IMPORTS AVERAGE PRICE (US$/bbl FOB)	66	56	18,2	56	46	21,9	-
OIL PRODUCTS							
TOTAL CONSUMPTION (10^3 b/day)	2.451	2.436	0,6	2.518	2.489	1,1	**100,0**
hereof: DIESEL with biodiesel - (10^3 b/day)	908	900	0,9	975	982	-0,7	36,8
hereof: GASOLINE C (10^3 b/day)	782	857	-8,7	761	739	3,0	24,2
CONSUMER PRICE - DIESEL (R$/l)	3,32	3,02	9,9	3,11	3,01	3,1	-
CONSUMER PRICE - GASOLINE C (R$/l)	4,09	3,73	9,4	3,76	3,69	2,1	-
CONSUMER PRICE - LPG (R$/13 kg)	66,5	55,6	19,7	58,9	54,1	9,0	-
NATURAL GAS							
PRODUCTION (10^6 m^3/day)	113,4	111,8	1,4	109,9	103,5	6,2	-
IMPORTS (10^6 m^3/day)	27,0	19,6	38,0	29,4	32,1	-8,5	-
NON-UTILIZED AND REINJECTION (10^6 m^3/day)	29,4	32,5	-9,6	30,5	33,8	-9,7	-
AVAILABILITY FOR CONSUMPTION (10^6 m^3/day)	111,0	98,9	12,3	108,8	101,9	6,8	**100,0**
INDUSTRIAL CONSUMPTION (10^6 m^3/day)	38,1	39,7	-4,0	40,8	40,8	-0,1	37,5
POWER GENERATION CONS. (10^6 m^3/day)	38,4	26,9	42,5	34,3	29,5	16,3	31,5
INDUSTRIAL PRICE SP(*) (US$/MMBtu) - consumption range of 20,000 m^3/day	12,2	9,8	23,8	12,0	11,2	7,3	-
MOTOR PRICE SP (US$/MMBtu)	18,0	16,2	11,1	17,9	15,3	17,0	-
RESIDENTIAL PRICE SP (US$/MMBtu)	37,3	33,1	12,8	37,6	36,1	4,1	-
ELECTRICITY							
NATIONAL INTERCONNECTED SYSTEM	63.711	62.976	1,2	64.823	63.978	1,3	**100,0**
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	37.697	36.117	4,4	37.606	37.078	1,4	58,0
SOUTH POWER LOAD (MWavg)	11.388	10.902	4,5	11.363	11.056	2,8	17,5
NORTHEAST POWER LOAD (MWavg)	9.418	10.650	-11,6	10.347	10.473	-1,2	16,0
NORTH POWER LOAD (MWavg)	5.208	5.308	-1,9	5.507	5.371	2,5	8,5
TOTAL CONSUMPTION (TWh) (**)	39,3	38,8	1,3	464,6	460,6	0,9	**100,0**
RESIDENTIAL	11,4	11,4	0,3	134,5	132,8	1,2	28,9
INDUSTRIAL	14,0	13,5	3,5	166,0	164,6	0,8	35,7
COMMERCIAL	7,6	7,6	0,8	88,2	88,2	-0,1	19,0
OTHER SECTORS	6,3	6,4	-1,1	76,0	75,0	1,3	16,4
PLANTS ENTRY INTO OPERATING (MW)	1.179	358	229,1	7.361	9.483	-22,4	-
RESIDENTIAL PRICE (R$/MWh)	685	623	10,0	641	640	0,0	-
COMMERCIAL PRICE (R$/MWh)	619	557	11,1	576	572	0,7	-
INDUSTRIAL PRICE (R$/MWh)	590	523	12,9	546	539	1,2	-
ETHANOL AND BIODIESEL							
BIODIESEL PRODUCTION (10^3 b/d)	78	60	29,2	74	65	12,9	-
MOTOR ETHANOL CONSUMPTION (10^3 b/d)	507	432	17,5	453	457	-0,9	-
ETHANOL EXPORTS (10^3 b/d)	38	14	168,8	27	31	-13,1	-
HYDRATED ETHANOL PRICE (R$/l)	2,87	2,83	1,4	2,68	2,65	1,0	-
COAL							
ELECTRICITY GENERATION (MWavg)	1.941	1.458	33,1	1.751	1.783	-1,8	-
IMPORT PRICE (US$ FOB/t)	131,4	124,1	5,9	144,6	79,5	82,0	-
NUCLEAR ENERGY							
ELECTRICITY GENERATION - (GWh)	1.346	882	52,6	15.737	15.856	-0,8	-
INDUSTRIAL SECTORS							
STEEL PRODUCTION (10^3 t/day)	91	76	19,2	94	84	11,7	-
ALUMINIUM PRODUCTION (10^3 t/day)	2,1	2,2	-1,8	2,2	2,2	1,3	-
IRON ORE EXPORTS (10^3 t/day)	969	1.038	-6,7	968	941	2,8	-
PELLETS EXPORTS (10^3 t/day)	88	94	-6,8	83	80	3,2	-
PAPER PRODUCTION (10^3 t/day)	29,3	27,8	5,3	28,7	28,2	1,7	-
PULP PRODUCTION (10^3 t/day)	59,3	54,1	9,7	53,4	51,3	4,1	-
SUGAR PRODUCTION (10^3 t/daY)	37	36	5,1	113	106	6,0	-
SUGAR EXPORTS (10^3 t/day)	61	84	-26,7	79	79	-0,5	-

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

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