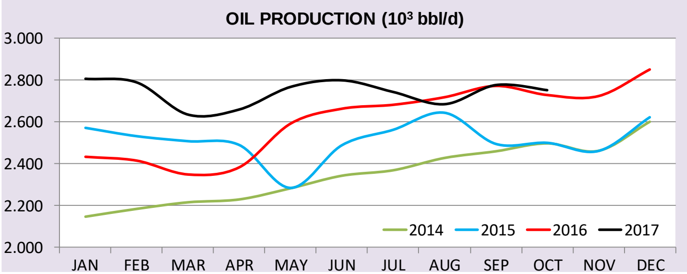

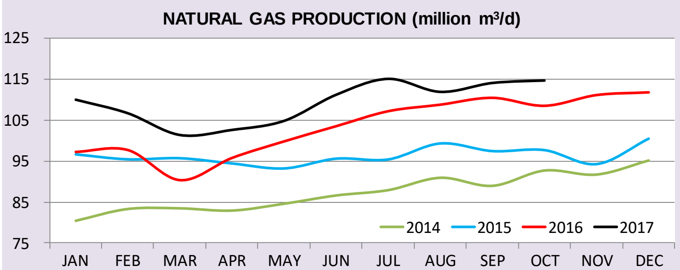

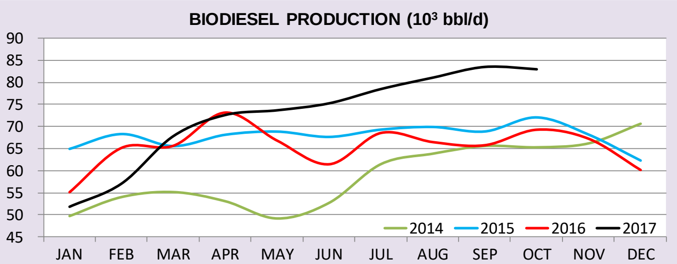

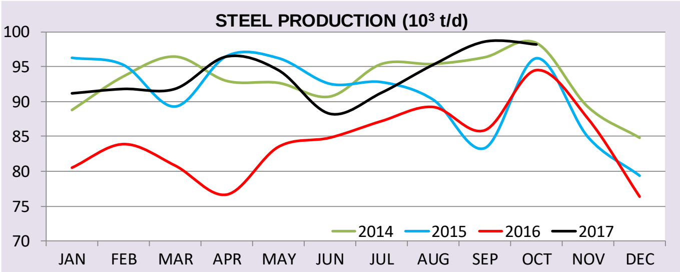

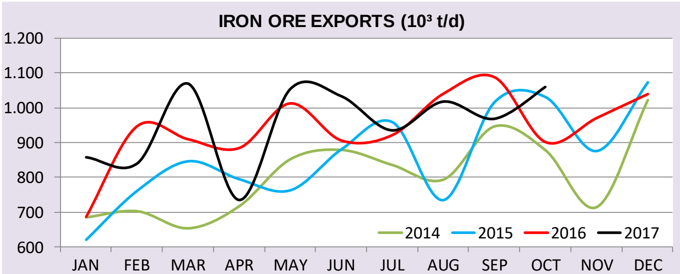

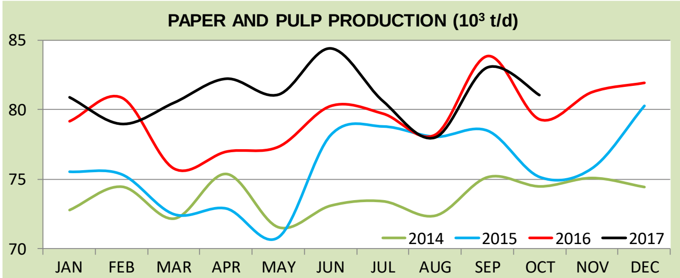

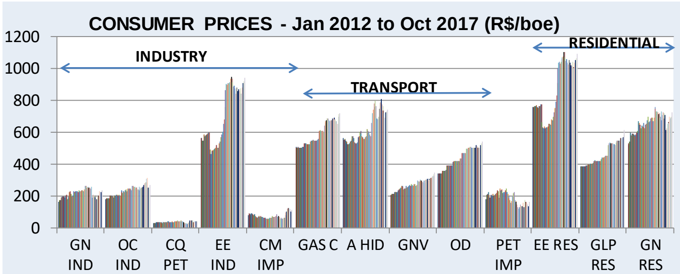

Note: For a better visualization, the minimum scale of the graphs was raised to the level close to the lowest value of the curves.

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

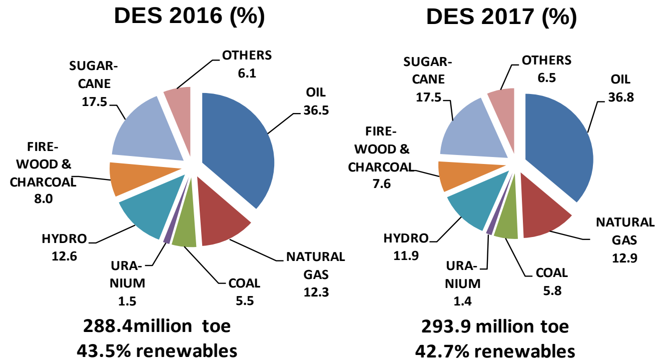
Reference Month: October 2017

Domestic Energy Supply

Brazil is expected to have an energy surplus in 2017, a fact that will occur for the first time since 1940, first year of global energy statistics. High growth rates in oil and natural gas production, above 5% p.a., coupled with low global energy demand will provide the surplus.

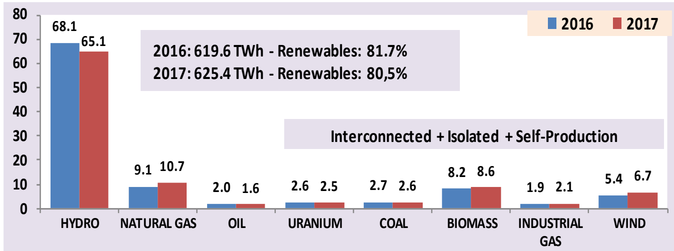
Economic and energy indicators, up to October, indicate that the Domestic Energy Supply - DES* increased by 1.8% over the same period of 2016. For the twelve months of the year, a growth of 2.0% is forecast for the DES. From this indicator, 0.5 percentage point will be due to the increase of losses in the expansion of thermoelectric generation. Thus, the consumption sector is expected to grow 1.5%.

Total energy demand in 2017 may grow about 2%



The Domestic Electricity Supply - DELS** of 2017 was estimated at 625.4 TWh, showing an increase of 1.0% over 2016. The proportion of renewable sources should remain above 80% in 2017. The wind energy share goes to 6,7%, increasing by more than 1 percentage point 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 to October 2017

Oil production still high

Oil production accumulated a 6.4% increase to October, over the same period of 2016. In October, there was an increase of 0.8% over the same month of 2016. Natural gas production increased by 7.1% until October and 5.6% in the month.

Steel production still high

Steel production accumulated a high of 10.6% in the year. In October, the rate stood at 3.9% over the same month of 2016. Iron ore exports grew 17.8% in the month, accumulating a 3.3% increase in the year. Pellet exports increased 13.5% in the month and 3.9% in the year.

Hydraulic supply in decline

Hydraulic generation started 2017 with an increase of 14%, and until October accumulated a drop of 2.5%. The import of Itaipu accumulated a drop of 11.0% in the year. Both grew over the previous month.

Oil derivatives in high

Apparent consumption of oil products grew by 7.5% in October, accumulating a rise of 1.1% in the year (2016 data reviewed in this bulletin). Diesel consumption grew 6.0% in the month (-1.3% in the year) and gasoline C consumption, decreased 2.3% in the month (+ 5.5% in the year). Total demand for natural gas increased by 13.8% in the month (6.1% in the year). The gas use in electricity generation grew 42.7% in the month (13.6% in the year).

The consumption of Otto's cycle transport (gasoline, ethanol and natural gas) grew by 2.5% in the year (2.4% up to July and 1.1% to April). This rate was -1.1% in 2016, +0.8% in 2015 and +6.2% in 2014.

Electricity consumption under recover

Electricity consumption (excluding self-producers that do not use the public grid) increased by 2.8% in the month and 0.9% in the year. In 2016, the rate was negative by 1.6%. Until October, industrial consumption remained at 0.8%, the residential stayed at 1.2%, and commercial, at -0.2%.

Biodiesel production in high

Biodiesel production grew 20.0% in the month, and 10.6% in the year (-0.5% through May and -3.5% through April). In 2016, the rate was -3.6% and in 2015, by + 15%.

Pulp production rose 1.8% in the month, reversing a decrease of 4.2% in the previous month. In the year, the rate is positive at 3.2% (7.8% in the 12 months of 2016, 8.5% in 2015 and 9.2% in 2014).

Electricity rates recoil

The national average residential electricity tariff recoiled 2.3% up to October (+5.8% in the whole 2016 and +42.5% in 2015), the commercial tariff decreased 1.9% (+5.7% in 2016 and +43.8% in 2015) and the industrial fell by 1.6% (+3.6% in 2016 and +51.7% in 2015).

Basic data

SPECIFICATION	OCTOBER IN THE MONTH 2017	2016	%17/16	ACCUMULATED IN THE YEAR 2017	2016	%17/16	%2017
OIL							
PRODUCTION - with Shale Oil and NGL(10^3 b/d)	2,752	2,731	0.8	2,741	2,575	6.4	-
IMPORTS AVERAGE PRICE (US$/bbl FOB)	57	48	17.8	53	45	19.7	-
OIL PRODUCTS							
TOTAL CONSUMPTION (10^3 b/day)	2,692	2,505	7.5	2,530	2,502	1.1	**100.0**
hereof: DIESEL with biodiesel - (10^3 b/day)	1,043	985	6.0	978	991	-1.3	36.7
hereof: GASOLINE C (10^3 b/day)	718	735	-2.3	763	723	5.5	24.1
CONSUMER PRICE - DIESEL (R$/l)	3.22	3.01	7.0	3.07	3.01	1.8	-
CONSUMER PRICE - GASOLINE C (R$/l)	3.90	3.66	6.4	3.71	3.68	0.8	-
CONSUMER PRICE - LPG (R$/13 kg)	62.2	55.3	12.5	57.5	53.8	7.0	-
NATURAL GAS							
PRODUCTION (10^6 m^3/day)	114.6	108.5	5.6	109.2	101.9	7.1	-
IMPORTS (10^6 m^3/day)	39.7	31.7	25.3	29.3	33.7	-13.0	-
NON-UTILIZED AND REINJECTION (10^6 m^3/day)	32.0	32.8	-2.3	30.9	34.2	-9.6	-
AVAILABILITY FOR CONSUMPTION (10^6 m^3/day)	122.2	107.4	13.8	107.6	101.4	6.1	**100.0**
INDUSTRIAL CONSUMPTION (10^6 m^3/day)	42.0	40.9	2.7	41.2	40.9	0.6	38.3
POWER GENERATION CONS. (10^6 m^3/day)	44.5	31.2	42.7	33.0	29.0	13.6	30.7
INDUSTRIAL PRICE SP(*) (US$/MMBtu) - consumption range of 20,000 m^3/day	12.9	11.4	13.2	11.8	11.5	3.0	-
MOTOR PRICE SP (US$/MMBtu)	18.9	16.8	12.4	17.8	15.1	18.0	-
RESIDENTIAL PRICE SP (US$/MMBtu)	39.4	38.4	2.5	37.3	36.3	2.8	-
ELECTRICITY							
NATIONAL INTERCONNECTED SYSTEM	66,248	63,651	4.1	64,865	64,109	1.2	**100.0**
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	38,536	37,328	3.2	37,171	37,242	-0.2	57.3
SOUTH POWER LOAD (MWavg)	11,069	10,486	5.6	11,047	11,080	-0.3	17.0
NORTHEAST POWER LOAD (MWavg)	10,977	10,494	4.6	10,420	10,430	-0.1	16.1
NORTH POWER LOAD (MWavg)	5,514	5,343	3.2	5,635	5,357	5.2	8.7
TOTAL CONSUMPTION (TWh) (**)	39.1	38.1	2.8	385.7	382.3	0.9	**100.0**
RESIDENTIAL	11.1	10.9	2.4	111.7	110.3	1.2	28.9
INDUSTRIAL	14.2	13.8	2.5	137.7	136.6	0.8	35.7
COMMERCIAL	7.3	7.1	3.4	73.0	73.2	-0.2	18.9
OTHER SECTORS	6.5	6.3	3.2	63.3	62.2	1.9	16.4
PLANTS ENTRY INTO OPERATING (MW)	1,196	395	203.1	5,888	7,740	-23.9	-
RESIDENTIAL PRICE (R$/MWh)	662	640	3.4	629	644	-2.3	-
COMMERCIAL PRICE (R$/MWh)	597	571	4.6	564	575	-1.9	-
INDUSTRIAL PRICE (R$/MWh)	570	533	6.9	534	543	-1.6	-
ETHANOL AND BIODIESEL							
BIODIESEL PRODUCTION (10^3 b/d)	83	69	20.0	73	66	10.6	-
MOTOR ETHANOL CONSUMPTION (10^3 b/d)	499	435	14.6	441	456	-3.3	-
ETHANOL EXPORTS (10^3 b/d)	31	13	132.3	25	35	-26.9	-
HYDRATED ETHANOL PRICE (R$/l)	2.66	2.68	-0.7	2.65	2.62	1.1	-
COAL							
ELECTRICITY GENERATION (MWavg)	2,155	1,381	56.1	1,686	1,811	-6.9	-
IMPORT PRICE (US$ FOB/t)	143.6	81.2	76.8	147.0	73.3	100.5	-
NUCLEAR ENERGY							
ELECTRICITY GENERATION - (GWh)	1,186	1,495	-20.7	12,948	14,110	-8.2	-
INDUSTRIAL SECTORS							
STEEL PRODUCTION (10^3 t/day)	98	95	3.9	94	85	10.6	-
ALUMINIUM PRODUCTION (10^3 t/day)	2.2	2.2	-0.1	2.2	2.2	1.7	-
IRON ORE EXPORTS (10^3 t/day)	1,061	901	17.8	959	929	3.3	-
PELLETS EXPORTS (10^3 t/day)	77	67	13.5	82	79	3.9	-
PAPER PRODUCTION (10^3 t/day)	28.9	28.3	2.2	28.6	28.3	1.2	-
PULP PRODUCTION (10^3 t/day)	51.9	51.0	1.8	52.5	50.8	3.2	-
SUGAR PRODUCTION (10^3 t/daY)	135	157	-14.2	123	112	10.3	-
SUGAR EXPORTS (10^3 t/day)	9	70	-86.8	72	78	-7.1	-

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

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