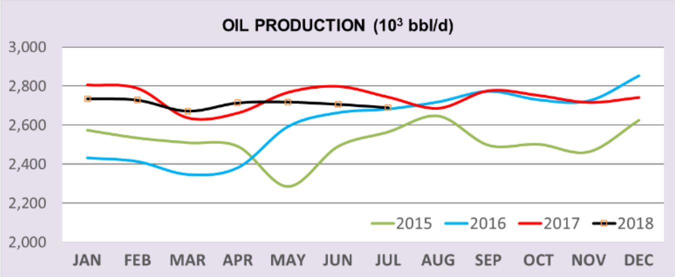
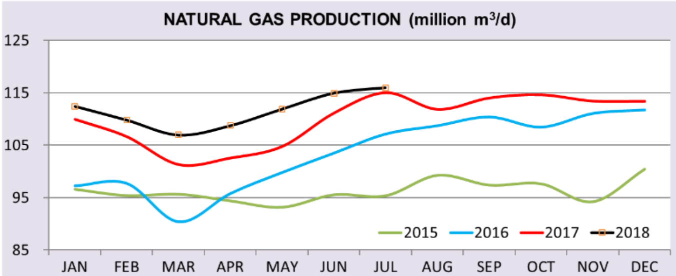
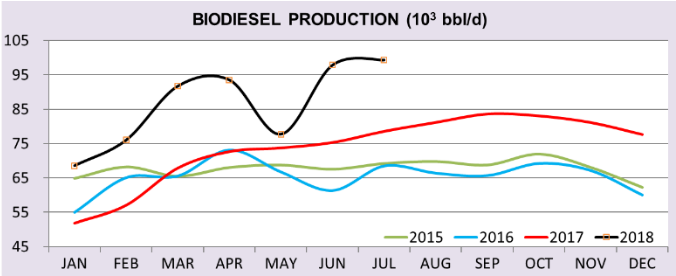
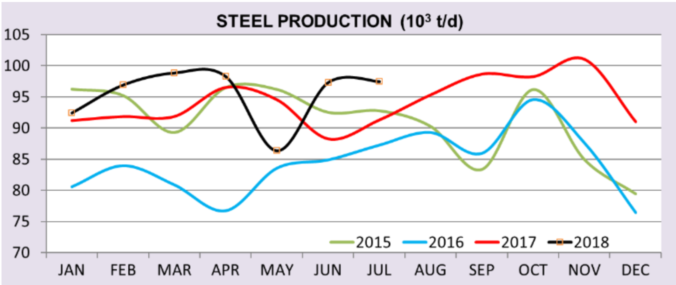
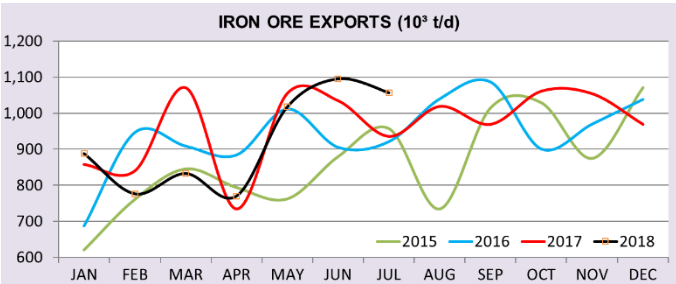
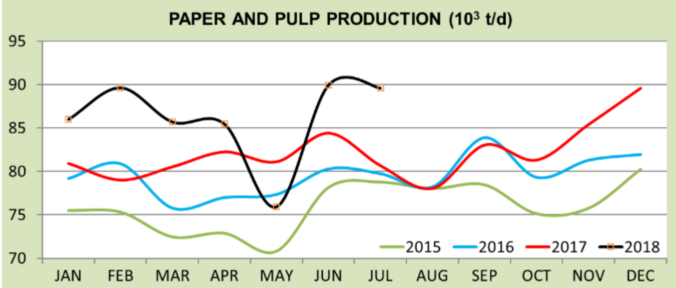


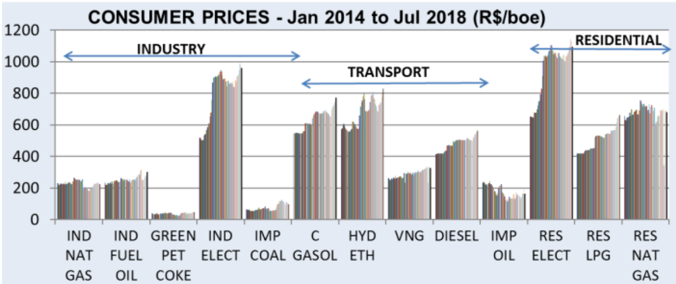












Note: For a better visualization, the minimum scale of the graphs was raised to the level close to the lowest value of the curves.

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.

Department of Information and Studies on Energy – DIE/SPE/MME
www.mme.gov.br / die@mme.gov.br
(55 61) 2032 5967/5764

Monthly Energy Bulletin - Brazil

Reference Month: July 2018

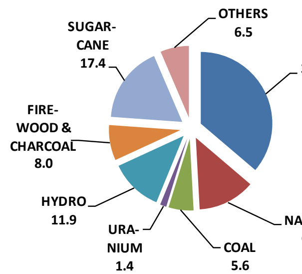
Domestic Energy Supply

July's indicators became to show a regular performance after a turbulence of the last two months. In May there was strong contractions due to the truckers' strike. In June there was a recovery. In July, consumption of petroleum products grew by 1.3% over July 2017 and electricity consumption increased by 2.2%. In the industry production, steel grew by 6.7% and cellulose, by 15.7%.

Up to July 2018 the Domestic Energy Supply (DES)[1] was still negative by 0.4% (-1% until June). For all 2018, a reversal is expected in the indicator, being estimated a positive rate of 0.7% (1.1% until June and 2% until February).

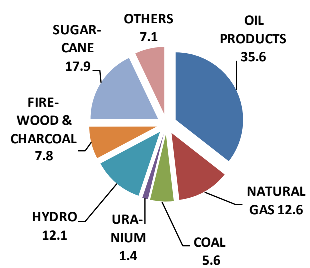
Total energy demand for 2018 is expected to grow about 1%.

DES 2017 (%)



293.5 million toe
43.2% renewables

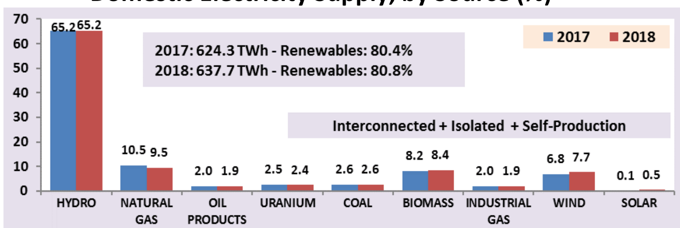
DES 2018 (%)



296.6 million toe
43.3% renewables

The Domestic Electricity Supply (DELS)[2] of 2018 was estimated at 636.8 TWh, showing an increase of 2.1% over 2017 (2.8% up to February). The share of renewable sources should remain somewhat above 80%. Wind energy continues to increase its share and solar PV energy starts a process of strong increase in the DELS matrix.

Domestic Electricity Supply, by Source (%)



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

Highlights until July 2018

Oil production is down in the year

Oil production recoiled 2% in July, compared to the same month of 2017, accumulating a drop of 1.2% in the year. Natural gas production grew by 0.8% in July, and increased by 3.9% in the year.

Steel production on the rise

Steel production grew by 6.7% in July, compared to July 2017, and increased by 3.4% in the year (4.8% to March). Iron ore exports are down 1.4% in the year (-9.9% to March), and pellets are up 12.3% (0.9% to March).

Hydraulic supply downwards

Total hydraulic generation accumulates a decrease of 1.1% this year, but Itaipu's accumulates an increase of 8.8%.

Oil derivatives with slight recovery

Apparent consumption of petroleum products grew by 1.3% in July, but accumulates a recoil of 3.4% in the year (-4.6% until May). Diesel consumption – including biodiesel – accumulates an increase of 3.2% in the year and gasoline consumption dropped 13%. The decline in gasoline has been offset by the increase in ethanol consumption, of 14% in the year. The total natural gas demand reversed the high trend, with a decline of 0.2% in the year (+6.7% until March).

Energy consumption in Otto cycle light vehicles (gasoline, ethanol and natural gas) fell by 2.2% in the year (+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 effects of the economy on the population purchasing power.

Electricity consumption with a slight rise

Electricity consumption – excluding self-producers that do not use the public grid – accumulated a high of 1.8% in the year (0.9% in the whole of 2017 and -0.9% in 2016). In the year, industrial consumption expanded 2.6%, residential consumption increased by 2.2% and commercial consumption, by 0.5%.

Biodiesel production in a strong high

Biodiesel production continued to grow in July, at remarkable 26.5%, accumulating 26.7% in the year (12.9% in all of 2017, -3.6% in 2016 and 15% in 2015).

Pulp production accumulates an increase of 8.7% in the year (3.8% in 2017, 7.8% in 2016, 8.5% in 2015 and 9.2% in 2014). Paper production accumulated a high of 0.3% (+ 1.7% throughout 2017). Cement production declined 3% in the year (-7% in 2017).

Electricity rates in high

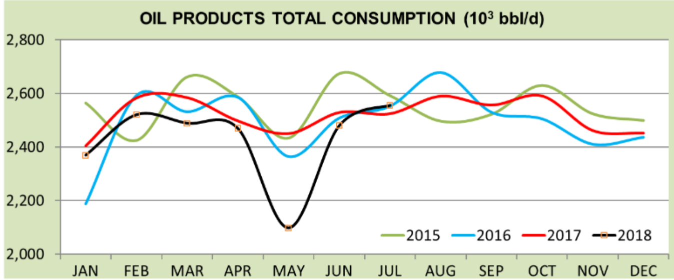
The average domestic tariff for residential electricity grew by 9.8% in the year over the same period of 2017 (stable in 2017, 5.8% in 2016 and 42.5% in 2015). The commercial tariff increased 10.4% (0.7% in 2017, 5.7% in 2016 and 43.8% in 2015) and the industrial increased 11.6% (1.2% in 2017, 3.6% % in 2016 and 51.7% in 2015).

Basic Data

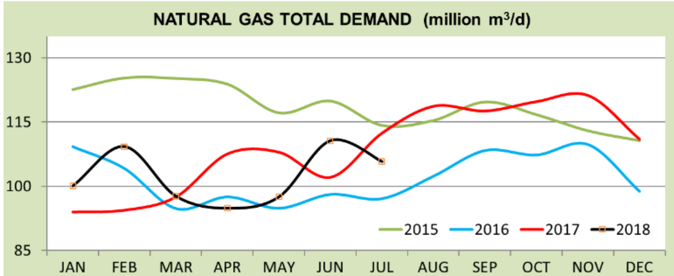
SPECIFICATION	JULY – IN THE MONTH 2018	IN THE MONTH 2017	IN THE MONTH %18/17	ACCUMULATED IN THE YEAR 2018	ACCUMULATED 2017	ACCUMULATED %18/17	%2018
OIL							
PRODUCTION - with Shale Oil and NGL(10^3 b/d)	2,689	2,744	-2.0	2,709	2,743	-1.2	-
IMPORTS AVERAGE PRICE (US$/bbl FOB)	75	53	42.9	70	54	29.4	-
OIL PRODUCTS							
TOTAL CONSUMPTION (10^3 b/day)	2,556	2,524	1.3	2,424	2,509	-3.4	**100.0**
hereof: DIESEL with biodiesel - (10^3 b/day)	992	1,029	-3.6	973	943	3.2	38.1
hereof: GASOLINE C (10^3 b/day)	607	751	-19.2	674	775	-13.0	22.2
CONSUMER PRICE - DIESEL (R$/l)	3.38	2.97	13.8	3.43	3.03	13.3	-
CONSUMER PRICE - GASOLINE C (R$/l)	4.49	3.55	26.4	4.30	3.64	17.9	-
CONSUMER PRICE - LPG (R$/13 kg)	68.6	57.5	19.2	67.5	56.6	19.3	-
NATURAL GAS							
PRODUCTION (10^6 m^3/day)	116.0	115.0	0.8	111.6	107.4	3.9	-
IMPORTS (10^6 m^3/day)	31.1	29.9	4.0	27.8	25.4	9.7	-
NON-UTILIZED AND REINJECTION (10^6 m^3/day)	41.3	32.4	27.3	37.2	30.3	22.7	-
AVAILABILITY FOR CONSUMPTION (10^6 m^3/day)	105.8	112.5	-6.0	102.2	102.4	-0.2	**100.0**
INDUSTRIAL CONSUMPTION (10^6 m^3/day)	39.9	42.1	-5.2	39.0	40.9	-4.8	38.1
POWER GENERATION CONS. (10^6 m^3/day)	27.0	35.0	-22.9	26.4	28.2	-6.6	25.8
INDUSTRIAL PRICE SP(*) (US$/MMBtu)(a)	12.8	12.7	0.6	12.5	11.4	9.2	-
MOTOR PRICE SP (US$/MMBtu)	14.1	18.4	-23.6	17.1	17.4	-2.1	-
RESIDENTIAL PRICE SP (US$/MMBtu)	32.5	39.0	-16.7	36.4	36.6	-0.4	-
ELECTRICITY							
NATIONAL INTERCONNECTED SYSTEM	64,091	60,534	5.9	66,408	64,915	2.3	**100.0**
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	37,139	34,964	6.2	38,949	37,725	3.2	58.7
SOUTH POWER LOAD (MWavg)	11,033	10,696	3.2	11,581	11,448	1.2	17.4
NORTHEAST POWER LOAD (MWavg)	10,231	9,692	5.6	10,613	10,532	0.8	16.0
NORTH POWER LOAD (MWavg)	5,176	5,432	-4.7	5,391	5,481	-1.6	8.1
TOTAL CONSUMPTION (TWh) (b)	37.9	37.1	2.2	275.1	270.3	1.8	**100.0**
RESIDENTIAL	10.6	10.4	2.4	80.8	79.0	2.2	29.4
INDUSTRIAL	14.2	14.0	1.6	97.8	95.3	2.6	35.5
COMMERCIAL	6.7	6.7	1.2	52.2	51.9	0.5	19.0
OTHER SECTORS	6.3	6.1	4.2	44.4	44.1	0.8	16.2
PLANTS ENTRY INTO OPERATING (MW)	65	814	-92.0	3,014	3,694	-18.4	-
RESIDENTIAL PRICE (R$/MWh)	758	624	21.5	681	620	9.8	-
COMMERCIAL PRICE (R$/MWh)	685	564	21.5	613	555	10.4	-
INDUSTRIAL PRICE (R$/MWh)	655	529	23.8	583	522	11.6	-
ETHANOL AND BIODIESEL							
BIODIESEL PRODUCTION (10^3 b/d)	99	79	26.5	86	68	26.7	-
MOTOR ETHANOL CONSUMPTION (10^3 b/d)	509	422	20.4	489	429	14.0	-
ETHANOL EXPORTS (10^3 b/d)	36	32	13.0	22	22	-3.2	-
HYDRATED ETHANOL PRICE (R$/l)	2.79	2.46	13.2	2.93	2.66	10.4	-
COAL							
ELECTRICITY GENERATION (MWavg)	1,533	1,595	-3.9	1,455	1,514	-3.9	-
IMPORT PRICE (US$ FOB/t)	142.7	156.5	-8.8	149.4	155.5	-3.9	-
NUCLEAR ENERGY							
ELECTRICITY GENERATION - (GWh)	1,493	1,424	4.8	8,938	9,503	-5.9	-
INDUSTRIAL SECTORS							
STEEL PRODUCTION (10^3 t/day)	97	91	6.7	95	92	3.4	-
ALUMINIUM PRODUCTION (10^3 t/day)	1.7	2.2	-24.6	1.9	2.2	-12.4	-
IRON ORE EXPORTS (10^3 t/day)	1,056	936	12.9	921	934	-1.4	-
PELLETS EXPORTS (10^3 t/day)	104	74	39.4	91	81	12.3	-
PAPER PRODUCTION (10^3 t/day)	29.5	28.7	2.9	28.4	28.3	0.3	-
PULP PRODUCTION (10^3 t/day)	60.1	51.9	15.7	57.6	52.9	8.7	-
SUGAR PRODUCTION (10^3 t/daY)	158	208	-24.1	72	101	-28.8	-
SUGAR EXPORTS (10^3 t/day)	61	86	-29.0	58	73	-20.4	-

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

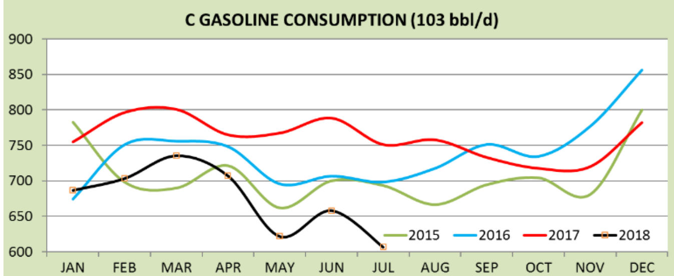
(a) range of 20,000m^3/day; (b) Self-producers, do not use public grid, is not included.



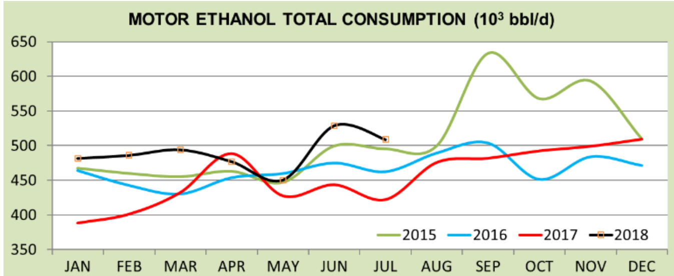
OIL PRODUCTS TOTAL CONSUMPTION (10^3 bbl/d)



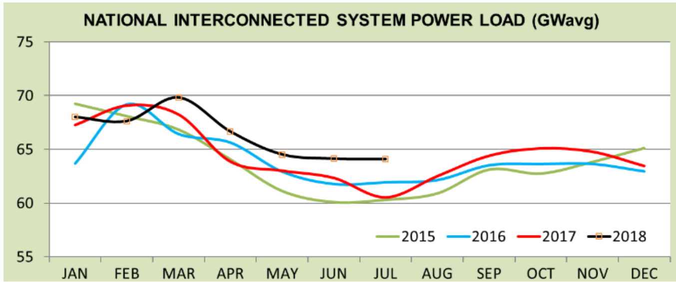
NATURAL GAS TOTAL DEMAND (million m^3/d)



C GASOLINE CONSUMPTION (103 bbl/d)



MOTOR ETHANOL TOTAL CONSUMPTION (10^3 bbl/d)



NATIONAL INTERCONNECTED SYSTEM POWER LOAD (GWavg)