

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 ANP³ 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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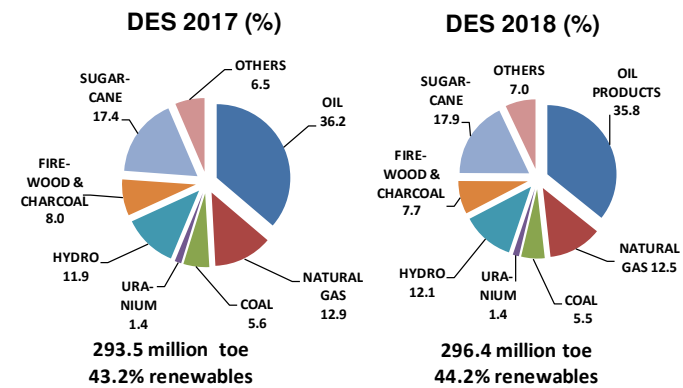
Reference Month: August 2018

Domestic Energy Supply

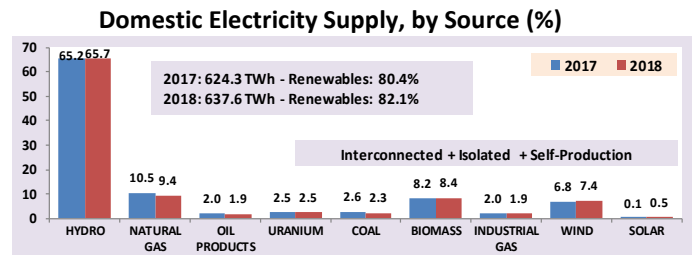
In August, there was no relevant fact in the economy, which could provide some change in the forecast of the energy and electric matrices for the year 2018. The pulp production had an excellent performance in the month, in contrast with negative performances of steel and aluminum. The consumption of petroleum products was slightly high, but gas consumption recoiled.

Up to August 2018 the Domestic Energy Supply (DES)¹ was positive by 0.2% (-0.4% until July). For all 2018, a better performance is expected for the indicator, being estimated a positive rate of 1.0% (1.1% to June and 2% to February).

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



The Domestic Electricity Supply (DELS)² of 2018 was estimated at 636.6 TWh, showing an increase of 2.2% over 2017 (2.8% up to February). The share of renewables 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.



Highlights until August 2018

Oil production is down in the year

Oil production fell 2.7% in August, compared to the same month of 2017, accumulating a drop of 1.4% in the year. Natural gas production fell 4.9% in August, but accumulated a rise of 2.7% in the year.

Steel production on the rise

Steel production fell by 3.7% in August over August 2017, but accumulated a 2.5% increase in the year (4.8% up to March). Iron ore exports fell by 0.7% in the year (-9.9% up to March), and pellets increased by 12.1% (0.9% in March).

Hydraulic supply downwards

Hydraulic generation grew 23% over the same month of 2017, and already accumulated a 1.3% increase in the year. Itaipu's generation accumulated a 9.2% increase.

Oil derivatives with slight recovery

Apparent consumption of petroleum products grew by 0.4% in August, but accumulated a drop of 2.9% in the year (-3.4% until July and -4.6% until May). Diesel consumption (with biodiesel) accumulated a high of 4.2% in the year, and gasoline, down 13.2%. The decline in gasoline is partially offset by the increase in ethanol consumption, of 13.7% in the year. The total demand for natural gas reversed the peaks trajectory, with a decline of 0.4% in the accumulated of the year (+ 6.7% until March).

Energy consumption in light vehicles of the Otto cycle (gasoline, ethanol and natural gas) decreased by 2.4% 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 increase

In the year, electricity consumption - excluding autoproducers that do not use the public grid - accumulates a high of 1.9% (0.9% in all of 2017 and a negative of 0.9% in 2016), industrial consumption is expanding by 2.6% and residential, with a high of 2.2% and commercial with 0.8%.

Biodiesel production in a strong high

Biodiesel production continued to rise in August, with a significant 21.5%, accumulating a rate of 25.9% in the year (12.9% in all 2017, -3.6% in 2016 and 15% in 2015).

Pulp production increased by 9.9% 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 0.5% (+ 1.7% throughout 2017). Cement production declines 3% in the year (-7% in 2017).

Electricity rates in high

The average domestic tariff for residential electricity grew by 11.1% 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 11.3% (0.7% in 2017, 5.7% in 2016 and 43.8% in 2015) and the industrial increased 12.6% (1.2% in 2017, 3.6% % in 2016 and 51.7% in 2015).

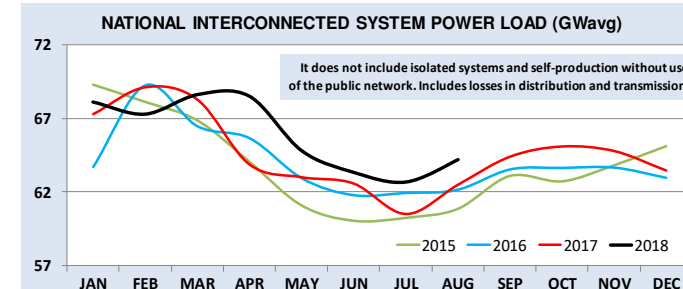
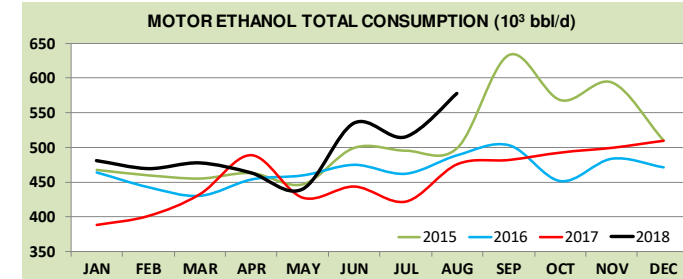
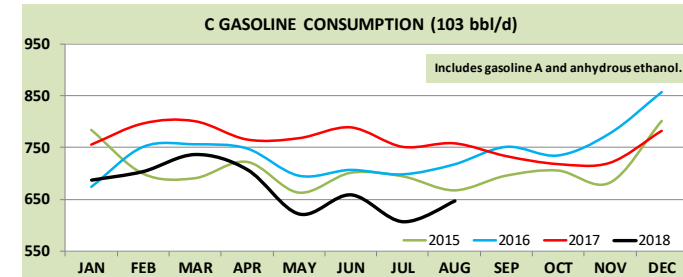
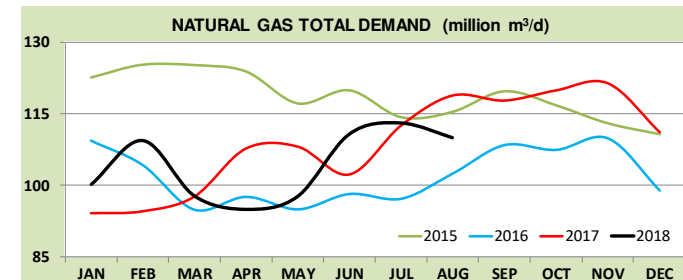
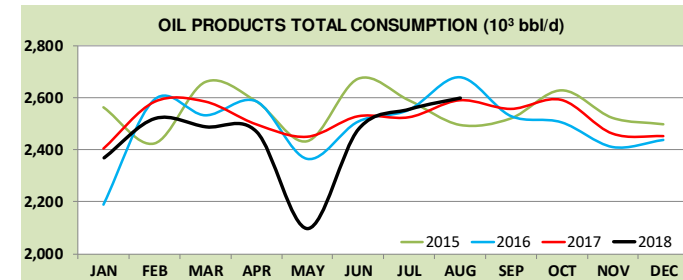
Basic Data

SPECIFICATION	AUGUST							
	IN THE MONTH			ACCUMULATED IN THE YEAR				
	2018	2017	%18/17	2018	2017	%18/17	%2018	
OIL								
PRODUCTION - with Shale Oil and NGU(10 ³ b/d)	2,614	2,686	-2.7	2,697	2,736	-1.4	-	
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	75	48	56.7	71	53	33.6	-	
OIL PRODUCTS								
TOTAL CONSUMPTION (10 ³ b/day)	2,599	2,590	0.4	2,447	2,519	-2.9	100.0	
hereof: DIESEL with biodiesel - (10 ³ b/day)	1,100	1,065	3.3	999	958	4.2	38.8	
hereof: GASOLINE C (10 ³ b/day)	647	758	-14.6	670	773	-13.2	21.9	
CONSUMER PRICE - DIESEL (R\$/l)	3.37	3.10	8.7	3.42	3.04	12.7	-	
CONSUMER PRICE - GASOLINE C (R\$/l)	4.45	3.78	17.6	4.32	3.66	17.9	-	
CONSUMER PRICE - LPG (R\$/13 kg)	68.4	57.6	18.7	67.6	56.7	19.2	-	
NATURAL GAS								
PRODUCTION (10 ⁶ m ³ /dav)	106.4	111.8	-4.9	110.9	107.9	2.7	-	
IMPORTS (10 ⁶ m ³ /dav)	44.6	38.2	16.8	30.7	27.0	13.8	-	
NON-UTILIZED AND REINJECTION (10 ⁶ m ³ /dav)	41.1	31.3	31.6	37.5	30.4	23.4	-	
AVAILABILITY FOR CONSUMPTION (10 ⁶ m ³ /dav)	109.8	118.8	-7.5	104.1	104.5	-0.4	100.0	
INDUSTRIAL CONSUMPTION (10 ⁶ m ³ /dav)	41.5	42.0	-1.0	39.5	41.1	-3.8	38.0	
POWER GENERATION CONS. (10 ⁶ m ³ /dav)	33.4	44.7	-25.2	28.5	30.3	-6.0	27.4	
INDUSTRIAL PRICE SP ^(*) (US\$/MMBtu)(a)	12.1	12.7	-4.7	12.1	11.6	4.6	-	
MOTOR PRICE SP (US\$/MMBtu)	15.3	18.4	-16.8	16.7	17.6	-4.9	-	
RESIDENTIAL PRICE SP (US\$/MMBtu)	31.3	39.0	-19.8	30.3	32.5	-7.0	-	
ELECTRICITY								
NATIONAL INTERCONNECTED SYSTEM								
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	37,264	36,000	3.5	38,534	37,304	3.3	58.4	
SOUTH POWER LOAD (MWavg)	11,036	10,857	1.6	11,469	11,374	0.8	17.4	
NORTHEAST POWER LOAD (MWavg)	10,575	9,947	6.3	10,564	10,459	1.0	16.0	
NORTH POWER LOAD (MWavg)	5,333	5,703	-6.5	5,381	5,509	-2.3	8.2	
TOTAL CONSUMPTION (TWh) (b)	38.6	37.6	2.7	313.7	307.9	1.9	100.0	
RESIDENTIAL	10.7	10.4	2.4	91.4	89.5	2.2	29.1	
INDUSTRIAL	14.5	14.2	2.2	112.3	109.4	2.6	35.8	
COMMERCIAL	6.9	6.7	2.9	59.1	58.6	0.8	18.8	
OTHER SECTORS	6.5	6.3	4.0	51.0	50.4	1.2	16.2	
PLANTS ENTRY INTO OPERATING (MW)	91	265	-65.6	3,105	3,959	-21.6	-	
RESIDENTIAL PRICE (R\$/MWh)	767	638	20.1	691	622	11.1	-	
COMMERCIAL PRICE (R\$/MWh)	694	578	20.1	621	557	11.3	-	
INDUSTRIAL PRICE (R\$/MWh)	663	551	20.4	593	526	12.6	-	
ETHANOL AND BIODIESEL								
BIODIESEL PRODUCTION (10 ³ b/d)	99	81	21.5	88	70	25.9	-	
MOTOR ETHANOL CONSUMPTION (10 ³ b/d)	577	476	21.4	495	435	13.7	-	
ETHANOL EXPORTS (10 ³ b/d)	40	36	10.8	24	24	-0.5	-	
HYDRATED ETHANOL PRICE (R\$/l)	2.66	2.61	1.7	2.90	2.65	9.3	-	
COAL								
ELECTRICITY GENERATION (MWavg)	2,053	1,835	11.9	1,530	1,554	-1.6	-	
IMPORT PRICE (US\$/t FOB/h)	147.7	133.4	10.7	144.2	150.8	-4.4	-	
NUCLEAR ENERGY								
ELECTRICITY GENERATION - (GWh)	1,504	1,279	17.6	10,442	10,782	-3.2	-	
INDUSTRIAL SECTORS								
STEEL PRODUCTION (10 ³ t/day)	92	95	-3.7	95	93	2.5	-	
ALUMINIUM PRODUCTION (10 ³ t/day)	1.7	2.2	-23.9	1.9	2.2	-13.9	-	
IRON ORE EXPORTS (10 ³ t/day)	1,058	1,019	3.8	939	945	-0.7	-	
PELLETS EXPORTS (10 ³ t/day)	91	82	11.2	91	81	12.1	-	
PAPER PRODUCTION (10 ³ t/day)	29.9	29.2	2.2	28.6	28.4	0.5	-	
PULP PRODUCTION (10 ³ t/day)	57.7	48.8	18.2	57.6	52.4	9.9	-	
SUGAR PRODUCTION (10 ³ t/day)	127	184	-31.2	79	112	-29.2	-	
SUGAR EXPORTS (10 ³ t/day)	55	89	-38.4	58	75	-23.1	-	

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

(a) INDUSTRIAL PRICE SP^(*) (US\$/MMBtu) - consumption range of 20,000 m³/day;

(b) Self-producers, do not use public grid, is not included.



It does not include isolated systems and self-production without use of the public network. Includes losses in distribution and transmission.