

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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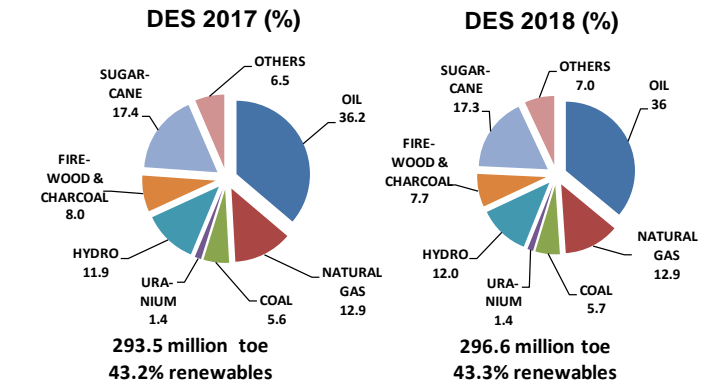
Reference Month: June 2018

Domestic Energy Supply

There was a recovery in energy and industrial production indicators in June, hampered in May by the truck drivers' strike. The consumption of petroleum products grew by 18.1% over May, and electricity consumption fell by only 0.9%, equivalent to the decreases recorded in June of previous years. In industrial production, there were increases over May: 43% in cement, 21% in cellulose and 13% in steel.

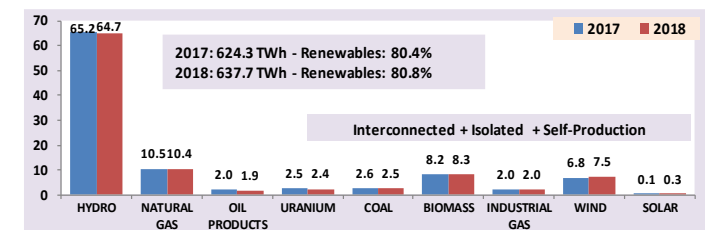
Until June 2018, the Domestic Energy Supply - DES* is still negative by 1.0%. For all 2018, a reversal was expected in this indicator, with a positive rate of 1.1% (2% until February).

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



The Domestic Electricity Supply – DELS² of 2018 was estimated at 637.7 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 (%)



Highlights until June 2018

Oil production is down in the year

Oil production recoiled 3.3% in June, compared to the same month of 2017, accumulating a drop of 1.1% in the year. Natural gas production grew by 3.4% in June, and increased by 4.5% in the year.

Steel production in recovery this year

Steel production grew by 10.2% in June, compared to June 2017, and increased by 2.8% in the year (4.8% to March). Iron ore exports are down 3.9% in the year (-9.9% to March), and pellets are up 8.1% (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 8.9%.

Oil derivatives are low

Apparent consumption of petroleum products fell by 1.9% in June, accumulating a recoil of 4.2% in the year (-4.6% until April). Diesel consumption accumulated an increase of 4.5% in the year and gasoline dropped 12%. The decline in gasoline has been offset by the increase in ethanol consumption, of 13.7% in the year. Total demand for natural gas increased 0.8% in the year (+1.7% to April and +6.7 to Mars).

Energy consumption in Otto cycle light vehicles (gasoline, ethanol and natural gas) fell by 1.8% 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 1.7% in the year (0.9% in the whole of 2017 and -0.9% in 2016). In the year, industrial consumption expanded 2.8%, residential consumption increased by 2.1% and commercial consumption, by 0.4%.

Biodiesel production in a strong high

Biodiesel production continued to grow in June, of expressive 30%, 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 7.6% 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 0.9% (+ 1.7% throughout 2017). Cement production declined 2.7% in the year (-7% in 2017)).

Electricity rates increases

The average domestic tariff for residential electricity grew by 7.9% 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 8.1% (0.7% in 2017, 5.7% in 2016 and 43.8% in 2015) and the industrial increased 9.3% (1.2% in 2017, 3.6% in 2016 and 51.7% in 2015).

Basic data

SPECIFICATION	JUNE							
	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)	2,707	2,799	-3.3	2,712	2,743	-1.1	-	
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	80	54	50.1	69	54	27.2	-	
OIL PRODUCTS								
TOTAL CONSUMPTION (10 ³ b/day)	2,480	2,528	-1.9	2,402	2,506	-4.2	100.0	
hereof: DIESEL with biodiesel - (10 ³ b/day)	1,105	827	33.6	970	928	4.5	38.4	
hereof: GASOLINE C (10 ³ b/day)	658	789	-16.5	685	779	-12.0	22.8	
CONSUMER PRICE - DIESEL (R\$/l)	3.42	2.99	14.7	3.44	3.04	13.2	-	
CONSUMER PRICE - GASOLINE C (R\$/l)	4.55	3.55	28.3	4.26	3.66	16.5	-	
CONSUMER PRICE - LPG (R\$/13 kg)	68.8	57.4	19.9	67.3	56.4	19.3	-	
NATURAL GAS								
PRODUCTION (10 ⁶ m ³ /day)	114.9	111.1	3.4	110.8	106.1	4.5	-	
IMPORTS (10 ⁶ m ³ /day)	34.3	19.0	80.5	27.3	24.6	10.8	-	
NON-UTILIZED AND REINJECTION (10 ⁶ m ³ /day)	38.6	28.0	37.9	36.5	29.9	21.9	-	
AVAILABILITY FOR CONSUMPTION (10 ⁶ m ³ /day)	110.6	102.2	8.3	101.6	100.7	0.8	100.0	
INDUSTRIAL CONSUMPTION (10 ⁶ m ³ /day)	41.1	41.7	-1.6	38.8	40.7	-4.7	38.2	
POWER GENERATION CONS. (10 ⁶ m ³ /day)	34.9	25.8	35.5	26.3	27.1	-3.0	25.8	
INDUSTRIAL PRICE SP(*) (US\$/MMBtu)(a)	12.6	12.4	2.0	12.4	11.2	10.8	-	
MOTOR PRICE SP (US\$/MMBtu)	14.1	17.1	-17.7	17.6	17.3	1.7	-	
RESIDENTIAL PRICE SP (US\$/MMBtu)	32.5	37.3	-12.9	37.1	36.2	2.5	-	
ELECTRICITY								
NATIONAL INTERCONNECTED SYSTEM	64,127	62,345	2.9	66,794	65,645	1.8	100.0	
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	37,103	35,970	3.1	39,251	38,186	2.8	58.8	
SOUTH POWER LOAD (MWavg)	10,984	10,619	3.4	11,673	11,573	0.9	17.5	
NORTHEAST POWER LOAD (MWavg)	10,213	10,359	-1.4	10,676	10,672	0.0	16.0	
NORTH POWER LOAD (MWavg)	5,299	5,646	-6.2	5,427	5,490	-1.1	8.1	
TOTAL CONSUMPTION (TWh) (b)	38.8	37.8	2.6	237.2	233.2	1.7	100.0	
RESIDENTIAL	11.9	10.8	9.9	70.1	68.7	2.1	29.6	
INDUSTRIAL	13.5	13.8	-1.8	83.6	81.3	2.8	35.2	
COMMERCIAL	7.0	6.9	0.2	45.4	45.2	0.4	19.1	
OTHER SECTORS	6.4	6.3	2.1	38.1	38.0	0.3	16.1	
PLANTS ENTRY INTO OPERATING (MW)	842	539	56.2	2,949	2,880	2.4	-	
RESIDENTIAL PRICE (R\$/MWh)	704	629	12.0	668	619	7.9	-	
COMMERCIAL PRICE (R\$/MWh)	640	569	12.6	598	553	8.1	-	
INDUSTRIAL PRICE (R\$/MWh)	617	534	15.5	571	522	9.3	-	
ETHANOL AND BIODIESEL								
BIODIESEL PRODUCTION (10 ³ b/d)	98	75	30.0	84	66	26.7	-	
MOTOR ETHANOL CONSUMPTION (10 ³ b/d)	550	444	23.9	489	430	13.7	-	
ETHANOL EXPORTS (10 ³ b/d)	28	34	-17.6	19	21	-7.5	-	
HYDRATED ETHANOL PRICE (R\$/l)	2.93	2.49	18.0	2.96	2.69	9.9	-	
COAL								
ELECTRICITY GENERATION (MWavg)	1,500	1,447	3.7	1,442	1,500	-3.9	-	
IMPORT PRICE (US\$ FOB/t)	145.2	146.1	-0.7	152.8	152.8	0.0	-	
NUCLEAR ENERGY								
ELECTRICITY GENERATION - (GWh)	1,446	1,259	14.9	7,445	8,079	-7.8	-	
INDUSTRIAL SECTORS								
STEEL PRODUCTION (10 ³ t/day)	97	88	10.2	95	92	2.8	-	
ALUMINIUM PRODUCTION (10 ³ t/day)	1.7	2.2	-24.5	2.0	2.2	-10.3	-	
IRON ORE EXPORTS (10 ³ t/day)	1,095	1,034	5.9	898	934	-3.9	-	
PELLETS EXPORTS (10 ³ t/day)	82	92	-10.8	89	82	8.1	-	
PAPER PRODUCTION (10 ³ t/day)	30.5	28.9	5.7	28.5	28.3	0.9	-	
PULP PRODUCTION (10 ³ t/day)	61.7	55.5	11.1	57.1	53.1	7.6	-	
SUGAR PRODUCTION (10 ³ t/day)	141	176	-20.0	57	83	-30.9	-	
SUGAR EXPORTS (10 ³ t/day)	65	103	-37.2	58	71	-18.6	-	

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

(a) range of 20,000m³/day; (b) Self-producers, do not use public grid, is not included.

