

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.

¹Domestic Energy Supply (DES), or Brazilian 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 2018 reflect the final results of the Brazilian Energy Balance (BEN), concluded in May by the Energy Research Office (EPE) in cooperation with the MME and its entities and agencies.

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Monthly Energy Bulletin – Brazil

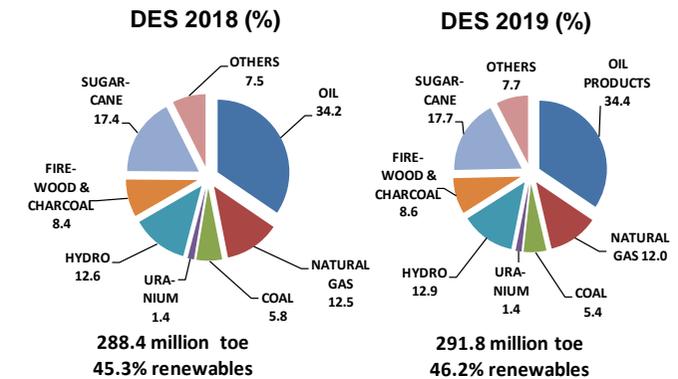
Reference Month: September 2019

Domestic Energy Supply

As of September 2019, residential electricity consumption increased 3.8%, commercial electricity consumption rose 3.1%, light vehicle energy rose 4.5%, and cement consumption, 1.8%. In the same period of 2018 these indicators stood at 1.2%, 0.4%, -2.4% and -1.8%, respectively. It was noticed in 2019 a good recovery in household consumption indicators.

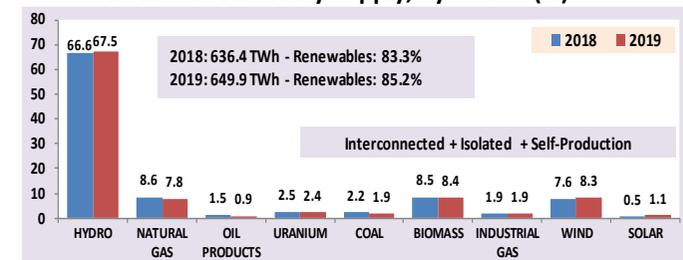
Concerning Domestic Energy Supply (DES)¹ throughout 2019, the current constraints lead to an estimated growth of 1.2% (-1.7% in 2018). With the high of 2019, the DES per capita will still be 8% lower than 2014 and equal to 2011.

Total energy demand for 2019 is expected to increase slightly above 1%



The Domestic Electricity Supply (DELS)² of 2019 was estimated at 649.9 TWh, showing an increase of 2% over 2018. The share of renewables should stay at 85%, with wind and solar energy continuing to increase their participations.

Domestic Electricity Supply, by Source (%)



Highlights in September 2019

Oil production repeats strong rise

Oil production grew 17.9% in September 2019, over the same month of 2018, accumulating a high of 4.7% in the year (3.1% until August). Natural gas production increased by 14.1% in the month, and accumulated high of 6.4% in the year (5.4% until August). These highs will provide Brazil's energy surplus above 5% in 2019.

Steel production in fall

Steel production accumulates a 6.8% fall in the year. Iron ore exports accumulates -9.8% in the year, and pellet exports, -28% (-6.3% to April).

Hydraulic supply accelerates

Hydraulic generation accumulates a high of 3.9% in the year (3.7% until August). Itaipu's generation accumulates a 18.9% drop (22.2% to August).

Oil derivatives declining

Apparent consumption of petroleum products grew 0.4% in September and accumulated high of 0.3% in the year (excluding ethanol and biodiesel). Diesel consumption (including biodiesel) accumulates high of 9.2% in the year. Consumption of C gasoline accumulated fall of 2.7% in the year (-3.7% until August). Hydrous ethanol, with an accumulated increase of 22%, has kept the total consumption in light vehicles up. Total demand for natural gas accumulated a drop of 6.8% in the year, with electricity generation having an accumulated decrease of 14.8% (-16% until August).

Energy consumption in light vehicles of the Otto cycle (gasoline, ethanol and natural gas) accumulates a high of 4.5% (4.3% to August, -1.2% in 2018, +1.7% in 2017, -1.1% in 2016, +0.8% in 2015 and +6.2% in 2014). This indicator directly reflects the purchasing power of the population, as well as an economic improvement expectation.

Electricity consumption stable

Electricity consumption, without self-producers, grew only 0.3% in September, and accumulated high of 1.4% in the year. Residential consumption increased by 3.8% and commercial consumption by 3.1%. Already industrial consumption accumulates low 1.8%.

Biodiesel production is better

Biodiesel production accumulates high of 9.6% in the year (8.7% until August). In the 12 months of previous years, the rates were: 25% in 2018, 12.9% in 2017, -3.6% in 2016 and 15% in 2015.

Pulp production accumulates -4.7% in the year (+7.1% in 2018, +3.8% in 2017, +7.8% in 2016, +8.5% in 2015 and +9.2% in 2014). Cement consumption shows recovery, with a positive rate of 1.8% in the year (-1.3% from January to September 2018).

Electricity tariffs in high

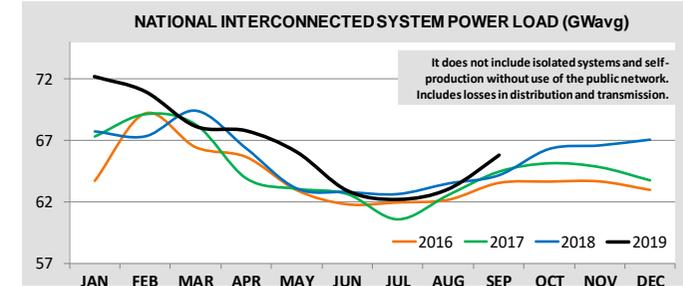
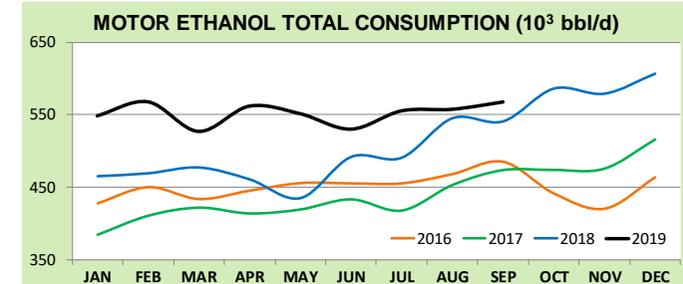
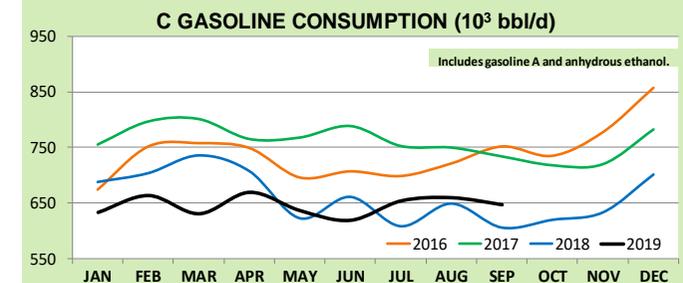
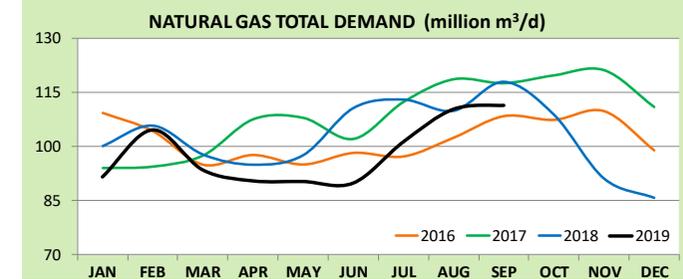
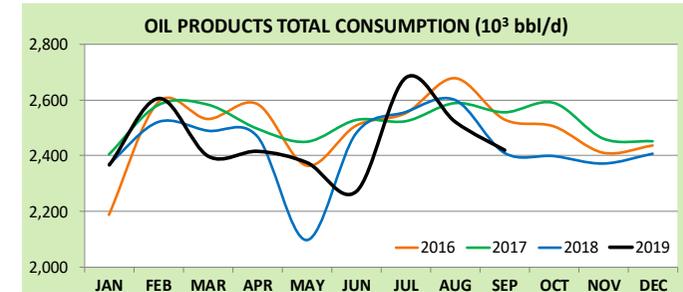
The average domestic tariff for residential electricity accumulates 9.9% in the year (12.6% in 2018, stable in 2017, 5.8% in 2016 and 42.5% in 2015). The commercial tariff increased 9.5% (12.4% in 2018, 0.7% in 2017, 5.7% in 2016 and 43.8% in 2015) and the industrial increased 7.8% (13.4% in 2018, 1.2% in 2017, 3.6% in 2016 and 51.7% in 2015).

Basic Data

SPECIFICATION	SEPTEMBER							
	IN THE MONTH			ACCUMULATED IN THE YEAR				
	2019	2018	% 19/18	2019	2018	% 19/18	98	
OIL								
PRODUCTION - with Shale Oil and NGL(10 ³ b/d)	3,038	2,577	17.9	2,809	2,684	4.7	-	
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	67	79	-15.9	68	72	-5.3	-	
OIL PRODUCTS								
TOTAL CONSUMPTION (10 ³ b/day)	2,419	2,410	0.4	2,449	2,443	0.3	100.0	
hereof: DIESEL with biodiesel - (10 ³ b/day)	1,073	998	7.6	1,042	954	9.2	40.4	
hereof: GASOLINE C (10 ³ b/day)	648	605	7.0	646	664	-2.7	21.1	
CONSUMER PRICE - DIESEL (R\$/l)	3.59	3.61	-0.4	3.55	3.44	3.0	-	
CONSUMER PRICE - GASOLINE C (R\$/l)	4.33	4.63	-6.5	4.36	4.35	0.2	-	
CONSUMER PRICE - LPG (R\$/13 kg)	68.9	68.5	0.6	69.1	67.7	2.1	-	
NATURAL GAS								
PRODUCTION (10 ⁶ m ³ /day)	128.9	112.9	14.1	118.2	111.1	6.4	-	
IMPORTS (10 ⁶ m ³ /day)	29.9	47.6	-37.2	25.0	32.6	-23.2	-	
NON-UTILIZED AND REINJECTION (10 ⁶ m ³ /day)	47.4	42.7	11.2	45.2	38.5	17.4	-	
AVAILABILITY FOR CONSUMPTION (10 ⁶ m ³ /day)	111.4	117.9	-5.5	98.1	105.2	-6.8	100.0	
INDUSTRIAL CONSUMPTION (10 ⁶ m ³ /day)	37.3	40.4	-7.8	37.3	40.2	-7.0	38.1	
POWER GENERATION CONS. (10 ⁶ m ³ /day)	38.0	41.6	-8.6	25.5	29.9	-14.8	26.0	
INDUSTRIAL PRICE SP(*) (US\$/MMBtu)	15.4	11.6	33.4	15.5	12.1	28.5	-	
MOTOR PRICE SP (US\$/MMBtu)	19.6	14.4	36.5	19.6	16.4	19.1	-	
RESIDENTIAL PRICE SP (US\$/MMBtu)	43.2	29.9	44.6	39.9	34.5	15.8	-	
ELECTRICITY								
NATIONAL INTERCONNECTED SYSTEM	65,811	64,169	2.6	66,577	65,234	2.1	100.0	
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	38,644	37,212	3.8	38,781	37,967	2.1	58.2	
SOUTH POWER LOAD (MWavg)	10,816	10,729	0.8	11,322	11,358	-0.3	17.0	
NORTHEAST POWER LOAD (MWavg)	10,607	10,758	-1.4	10,773	10,553	2.1	16.2	
NORTH POWER LOAD (MWavg)	5,744	5,470	5.0	5,538	5,391	2.7	8.3	
TOTAL CONSUMPTION (TWh) (**)	39.2	39.1	0.3	357.5	352.4	1.4	100.0	
RESIDENTIAL	11.4	11.0	3.3	105.3	101.5	3.8	29.5	
INDUSTRIAL	13.8	14.4	-4.4	124.5	126.7	-1.8	34.8	
COMMERCIAL	7.3	7.0	3.1	68.2	66.1	3.1	19.1	
OTHER SECTORS	6.8	6.6	2.3	59.5	58.1	2.4	16.6	
PLANTS ENTRY INTO OPERATING (MW)	878	214	310.0	5,042	3,358	50.1	-	
RESIDENTIAL PRICE (R\$/MWh)	815	770	5.8	770	700	9.9	-	
COMMERCIAL PRICE (R\$/MWh)	730	696	4.9	689	629	9.5	-	
INDUSTRIAL PRICE (R\$/MWh)	700	665	5.3	649	602	7.8	-	
ETHANOL AND BIODIESEL								
BIODIESEL PRODUCTION (10 ³ b/d)	117	101	15.7	98	89	9.6	-	
MOTOR ETHANOL CONSUMPTION (10 ³ b/d)	568	541	5.0	552	486	13.5	-	
ETHANOL EXPORTS (10 ³ b/d)	35	37	-5.4	31	27	15.7	-	
HYDRATED ETHANOL PRICE (R\$/l)	2.85	2.80	1.9	2.87	2.89	-0.6	-	
COAL								
ELECTRICITY GENERATION (MWavg)	2,045	1,670	22.5	1,389	1,545	-10.1	-	
IMPORT PRICE (US\$/FOB/t)	130.7	132.8	-1.6	143.9	143.0	0.7	-	
NUCLEAR ENERGY								
ELECTRICITY GENERATION - (GWh)	1,450	1,449	0.1	11,749	11,891	-1.2	-	
INDUSTRIAL SECTORS								
STEEL PRODUCTION (10 ³ t/day)	80	101	-20.7	89	96	-6.8	-	
ALUMINIUM PRODUCTION (10 ³ t/day)	2.0	1.6	20.8	1.7	1.9	-8.1	-	
IRON ORE EXPORTS (10 ³ t/day)	845	1,033	-18.2	856	949	-9.8	-	
PELLETS EXPORTS (10 ³ t/day)	57	98	-41.6	66	92	-28.0	-	
PAPER PRODUCTION (10 ³ t/day)	28.8	29.7	-2.9	28.7	28.7	-0.1	-	
PULP PRODUCTION (10 ³ t/day)	54.4	59.0	-7.7	55.0	57.7	-4.7	-	
SUGAR PRODUCTION (10 ³ t/day)	136	130	4.7	87	85	2.1	-	
SUGAR EXPORTS (10 ³ t/day)	55	85	-34.6	46	61	-24.2	-	

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

(**) The traditional self-producers (consumers that 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.