

**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 (-) unreinjection.

Apparent consumption of oil derivatives = 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, is the energy required to move the economy of a country or region, and 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 of 2013 reflects the final results of the 2014 cycle of the National Energy Balance, coordinated by the Energy Research Company (EPE), with the support of N3E/SPE/MME.

# Monthly Energy Bulletin - Brazil

Reference Month: March 2014

## Domestic Energy Supply – DES

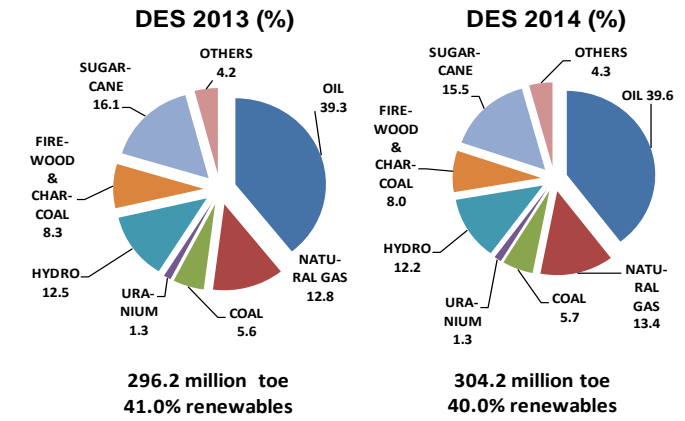
Continues the low performance of some export products such as steel, aluminum, pellets and sugar, for example. In March, in the issue of welfare of the population, were maintained good performance in energy consumption in particular transport and in residential and commercial electricity. In terms of energy supply, with the decrease in hydroelectric generation in March, the possibility of a higher thermal generation in 2014 reappears, which increases the thermal energy losses. In terms of cane products, there is a forecast of lower performance in 2014. Under these conditions, the growth rate of Domestic Energy Supply (DES) (\*) (\*\*) was 3.9% over the same period of 2013.

**Total energy demand in 2014 can grow between 2.5% and 3.5%**

For the full year 2014, the estimates for the DES growth are in the range of 2.5% to 3.5% (1.5% to 2.5% until the previous month). Reasons: a) reduction of hydraulic generation, which causes an increase in thermal generation and their losses; b) poor performance of commodities and cane products and; c) the good performance of the Otto cycle transportation and electricity.

Based on the available information at the date of this report, the DES's growth rate for 2014 was estimated at 2.7% (1.8% in the previous bulletin). Given the uncertainties in the early months of each year, in each new bulletin energy forecasts are reviewed and based on the information of that time.

Renewable sources should maintain participation near to 40% in the 2014 DES Matrix, but below the indicator of 2013. Only wind generation and the biodiesel production should show an above the average energy demand.



## Highlights until March 2014

### Steel production is on the increase

Until March, steel production grew 0.9% (-1.1% until February), the production of aluminum retreated 11.9%, iron ore exports increased by 7.8% (3.6% for the whole year of 2013), and pellets exports declined 11.2% (with a decrease of 8.8% throughout 2013).

### Hydro supply SIN cools down

The hydraulic energy supply recoiled 2.2% over the same month in 2013, and 8.2% over the previous month. Year to date, the rate is still positive, at 6%.

### Consumption of oil products remains high

The apparent consumption of petroleum products increased by 2.6% in March and 4.8% in the year date, while diesel rose 2.6% in March, against the rate of 15% recorded in February (due to the use in thermoelectric plants). Gasoline C, with a growth of 7.1% in March, in the year accumulated positive rate of 9.6% (in 2013 the rate was 2.7%). The total natural gas demand grew 2,5% in the year date, showing a higher rate in March (7.6%), influenced mainly by thermal generation.

The performance of energy use in the Otto Cycle transportation (gasoline, ethanol and natural gas) continues to astonish, with an increase of 7.5% in February and 6.7% in March. The average increase was 6.1% in 2013 and 8.7% in 2012.

### Electricity consumption remains high

Electricity consumption (excluding captive self-producer) grew 4.6% in March, well below the rate of 8.7% verified in February. In the year the rate was 6.1%, well above the 3.5% increase for the whole year of 2013. In March, residential consumption grew 8.8% and commercial consumption increased 8.2%, yet as a result of greater use of air conditioning. Industrial consumption remains low, with a rate of only 0.8% in the year (0.6% across 2013). The decreasing production of aluminum explains part of the low industrial performance.

### Biodiesel production grows above 12%

Biodiesel production increased 12.4% in March and 12.1% in the year. In 2013 the rate was 7.3%.

### Electricity tariffs for high

The national average residential electricity tariff recoiled in the year by 6.1%, the commercial tariff already shall be up 4.7% this year, and the industry still maintains a decrease of 2.9%.

The cement production in March, with a rate of 1.9%, no longer shows the dynamics of the first months of the year, of 20.8% in January and 10.8% in February (3.1% for the whole the year 2013). Pulp production continues to maintain good performance, of 5.3% in year date (7.4% throughout 2013).

## Basic Data

SPECIFICATION	MARCH							
	IN THE MONTH			ACCUMULATED IN THE YEAR				
	2014	2013	%14/13	2014	2013	%14/13	%2014	
<b>OIL</b>								
PRODUCTION - with Shale Oil and NGL(10 <sup>3</sup> b/d)	2,217	1,952	13.6	2,160	2,047	5.5	-	
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	116	119	-2.3	115	117	-1.5	-	
<b>OIL PRODUCTS</b>								
TOTAL CONSUMPTION (10 <sup>3</sup> b/day)	2,694	2,625	2.6	2,686	2,562	4.8	100.0	
hereof: DIESEL with biodiesel - (10 <sup>3</sup> b/day)	1,022	996	2.6	1,030	965	6.7	36.4	
hereof: GASOLINE C (10 <sup>3</sup> b/day)	725	677	7.1	740	675	9.6	22.0	
CONSUMER PRICE - DIESEL (R\$/l)	2.50	2.30	8.5	2.49	2.26	10.2	-	
CONSUMER PRICE - GASOLINE C (R\$/l)	2.98	2.89	3.3	2.96	2.84	4.2	-	
CONSUMER PRICE - LPG (R\$/13 kg)	42.6	40.5	5.2	42.6	40.4	5.4	-	
<b>NATURAL GAS</b>								
PRODUCTION (10 <sup>6</sup> m <sup>3</sup> /day)	83.4	77.3	8.0	82.3	76.6	7.5	-	
IMPORTS (10 <sup>6</sup> m <sup>3</sup> /day)	58.0	45.3	28.1	51.9	46.8	11.0	-	
NON-UTILIZED AND REINJECTION (10 <sup>6</sup> m <sup>3</sup> /day)	19.3	12.6	53.7	18.9	13.2	43.7	-	
AVAILABILITY FOR CONSUMPTION (10 <sup>6</sup> m <sup>3</sup> /day)	122.1	110.0	11.0	115.3	110.1	4.7	100.0	
INDUSTRIAL CONSUMPTION (10 <sup>6</sup> m <sup>3</sup> /day)	43.5	39.0	11.5	42.5	38.8	9.6	36.9	
POWER GENERATION CONS. (10 <sup>6</sup> m <sup>3</sup> /day)	48.1	41.4	16.2	42.8	42.2	1.5	37.1	
INDUSTRIAL PRICE SP* (US\$/MMBtu) - consumption range of 20,000 m <sup>3</sup> /day	17.1	18.5	-7.6	17.1	18.4	-7.0	-	
MOTOR PRICE SP (US\$/MMBtu)	19.2	21.6	-11.0	19.2	21.4	-10.0	-	
RESIDENTIAL PRICE SP (US\$/MMBtu)	48.0	53.6	-10.6	48.0	53.3	-9.9	-	
<b>ELECTRICITY</b>								
NATIONAL INTERCONNECTED SYSTEM	65,086	63,347	2.7	67,850	63,421	7.0	100.0	
SOUTHEAST/MIDWEST POWER LOAD (MWavg)	39,549	38,704	2.2	41,037	38,617	6.3	60.5	
SOUTH POWER LOAD (MWavg)	11,097	10,274	8.0	11,934	10,778	10.7	17.6	
NORTHEAST POWER LOAD (MWavg)	10,113	10,075	0.4	10,155	9,869	2.9	15.0	
NORTH POWER LOAD (MWavg)	4,327	4,294	0.8	4,644	4,156	11.7	6.8	
TOTAL CONSUMPTION (TWh) (**)	40.3	38.5	4.6	121.9	114.9	6.1	100.0	
RESIDENTIAL	11.3	10.4	8.8	34.9	31.7	10.0	28.6	
INDUSTRIAL	15.1	15.1	-0.1	44.6	44.3	0.8	36.6	
COMMERCIAL	7.7	7.2	8.2	23.7	21.4	10.7	19.4	
OTHER SECTORS	6.1	5.8	5.2	18.7	17.6	6.6	15.4	
PLANTS ENTRY INTO OPERATING (MW)	1,358	714	90.4	2,024	2,075	-2.5	-	
RESIDENTIAL PRICE (R\$/MWh)	391	382	2.3	393	418	-6.1	-	
COMMERCIAL PRICE (R\$/MWh)	369	324	14.0	370	353	4.7	-	
INDUSTRIAL PRICE (R\$/MWh)	306	281	8.9	308	318	-2.9	-	
<b>ETHANOL AND BIODIESEL</b>								
BIODIESEL PRODUCTION (10 <sup>3</sup> b/d)	53	47	12.4	52	46	12.1	-	
MOTOR ETHANOL CONSUMPTION (10 <sup>3</sup> b/d)	422	353	19.5	431	360	19.8	-	
ETHANOL EXPORTS (10 <sup>3</sup> b/d)	16	15	5.2	23	44	-46.8	-	
HYDRATED ETHANOL PRICE (R\$/l)	2.17	2.06	5.3	2.10	2.00	4.6	-	
<b>COAL</b>								
ELECTRICITY GENERATION (MWavg)	2,276	1,328	71.3	2,076	1,400	48.3	-	
IMPORT PRICE (US\$ FOB/t)	120.5	136.4	-11.6	114.7	139.1	-17.5	-	
<b>NUCLEAR ENERGY</b>								
ELECTRICITY GENERATION - (Gwh)	1,417	1,289	9.9	4,209	3,231	30.3	-	
<b>INDUSTRIAL SECTORS</b>								
STEEL PRODUCTION (10 <sup>3</sup> t/day)	96	92	4.5	93	92	0.9	-	
ALUMINIUM PRODUCTION (10 <sup>3</sup> t/day)	3.3	3.8	-13.2	3.3	3.8	-11.9	-	
IRON ORE EXPORTS (10 <sup>3</sup> t/day)	653	603	8.3	679	630	7.8	-	
PELLETS EXPORTS (10 <sup>3</sup> t/day)	137	126	8.7	119	125	-4.8	-	
CEMENT PRODUCTION (10 <sup>3</sup> t/day)	191	188	1.9	205	185	11.2	-	
PAPER PRODUCTION (10 <sup>3</sup> t/day)	29.2	28.5	2.7	29.2	28.6	2.1	-	
PULP PRODUCTION (10 <sup>3</sup> t/day)	41.4	39.4	5.1	42.4	40.2	5.3	-	
SUGAR PRODUCTION (10 <sup>3</sup> t/day)	13	9	46.7	19	16	17.4	-	
SUGAR EXPORTS (10 <sup>3</sup> t/day)	50	63	-20.0	61	67	-8.6	-	

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

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

