

# Monthly Energy Bulletin

Reference Month: August 2013

## Total Primary Energy Supply

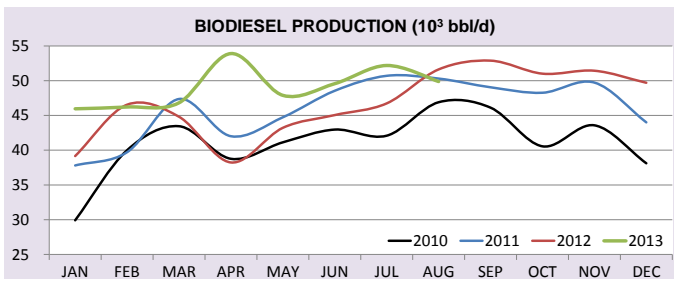
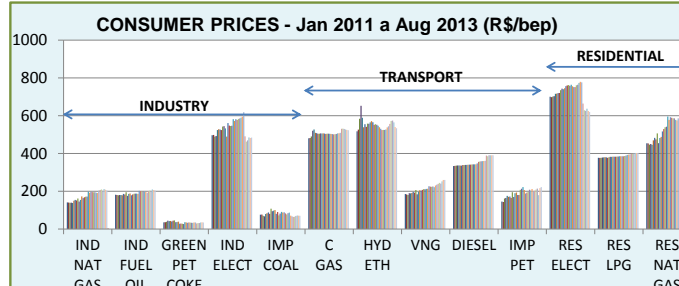
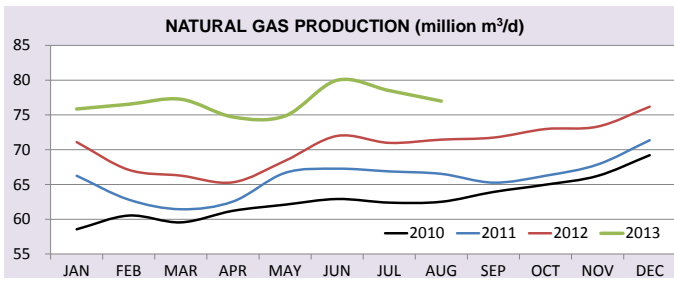
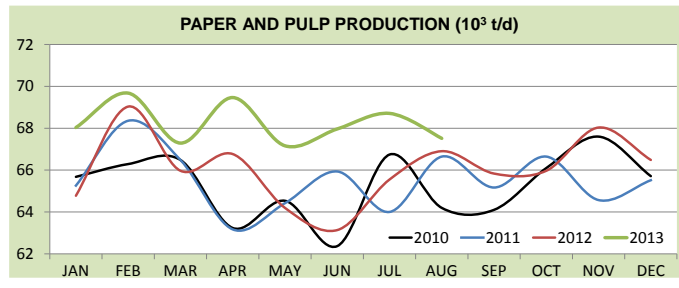
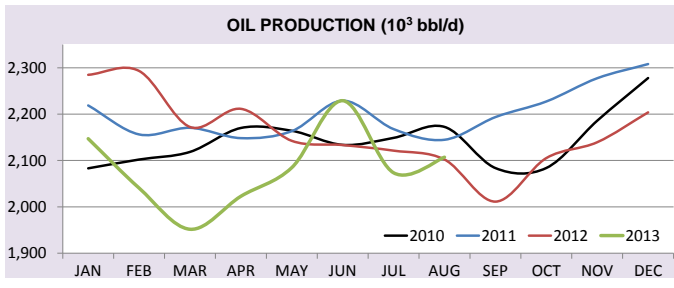
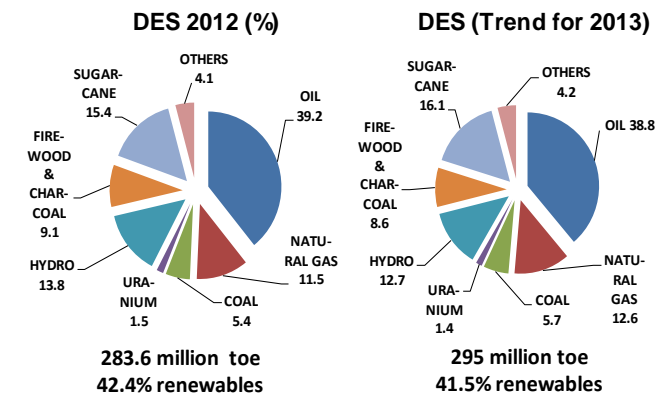
The energy indicators of August 2013 did not alter the observed trends to the previous month. Small improvements in the performances of some products were offset by a slowdown in others. The growing in residential electricity consumption (6.4%) and in Otto cycle consumption (5.2%) are examples that domestic demand remains strong. In Domestic Energy Supply (DES), the maintenance of low hydro generation continues to require complementation by thermal generation, increasing energy thermal losses. The growth rate of DES until this month was estimated at 5.3% over the same period in 2012.

**Total energy demand in 2013 can grow up between 3% and 4%**

For the full year of 2013, the DES growth estimations are between 3% and 4%. The premises are supported on restrictions for a larger hydro generation, on the maintenance of weak performance of commodities and on the good performances of sugarcane products, natural gas and oil products. The effect of energy thermal losses in DES is attenuated at the end of this year, taking into account that, at the end of 2012, thermal generation was already much required.

Based on information available at the elaboration of this bulletin, the growth rate of DES for 2013 was estimated at 4.0%.

Renewable energy may step back slightly in the 2013 energy matrix. An above average behavior of sugarcane products should be neutralized by lower performances of the firewood and hydro generation uses.



**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

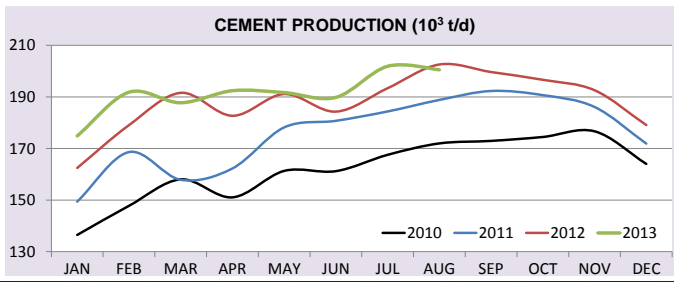
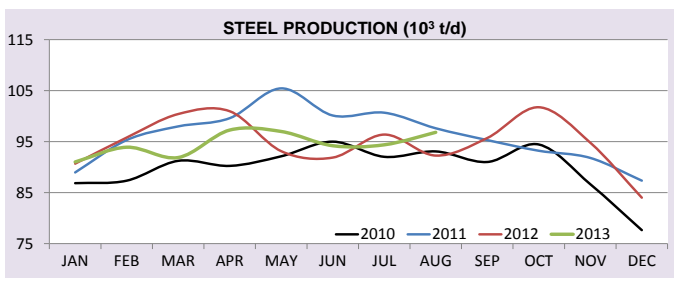
The purpose of this bulletin is to follow up a set of energy and non-energy variables that provide a reasonable estimate of the behavior both monthly as cumulative of the total energy demand in Brazil.

*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. 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.

The *Brazilian energy demand*, or *Domestic Energy Supply (DES)*, 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.

*toe (ton of oil equivalent)* = 10 Gcal (Gigacaloria). The firewood releases 3,100 cal / g, or 3.1 Gcal / t when combustion. The gasoline releases 10.4 Gcal / t. The ratio between the indicator of wood and oil, resulting in 0.31 toe / t, a factor that converts tons of firewood to toe. The factor of gasoline was 1.04 toe / t. This criterion enables the sum of all forms of energy on standard "toe".



## Highlights up to August 2013

### Steel production pulls back above 1%

Steel production grew by 4.9% in August 2013, over the same month in 2012, and the cumulative decline is 0.6% in the year (-1.4% until July). Exports of iron ore rose 16.5% in August and 6% in the year (4.3% to July). The pellet exports continue to decline, with reductions of 11.2% in the year.

### Oil production on the rise

The oil production, of 2.1 million b/d in August, grew 0.2% over the same month of 2012, after a decrease of 2.3% recorded in July.

### Hydro supply retreats about 10%

The hydraulic power supply decreased 10.2% until August, with Itaipu import staying 1.5% below the level of 2012 (Paraguayan share). Under these conditions, the national hydro generation declined by 11% in the year, over the same period of 2012.

### Oil products demand remains high

The apparent consumption of petroleum products increased by 5.2% in August (5.8% in July) and 4% in the year (3.8% up to July). The consumption of diesel fell 0.9% in August, but still maintains significant rate in the year, of 7.6% (9.0% until July). Gasoline C increased 3.4% in August, being with positive rate of 2.1% in the year (1.9% until July), while automotive ethanol consumption grew 25.4% until August. The total demand of natural gas grew 26.1% until August, still reflecting the increase in thermal generation – 153% in the year.

Energy use in Otto cycle transport (gasoline + ethanol + gas), with a rate of 5.2% in the year, continues to keep some moderation, compared to the rate of 8.3%, verified in 2012.

### Electricity consumption is still high

Electricity consumption (excluding captive self-producer) grew 4% in August. In the year, the accumulated rate is 3.1% (2.9% until July and 2.6% until June). Industrial consumption accumulates negative rate of 0.4% in the year (-0.7% until July), and the commercial and residential sectors accumulate positive rates of 6.4% and 5.4%, respectively.

### Electricity tariffs recoil

The Brazilian electricity average tariff of the residential sector fell down 14.1% in the year, the commercial tariff, 12.5% and the industrial tariff, 11.7%.

### Biodiesel production remains high

Biodiesel production fell to 3.4% in August, getting positive rate of 10.4% in the year (a rate of 1.7% in 2012).

Cement production fell 1% in August, over the same month of 2012. In the year, the growth is 2.9% (3.9% to July). Pulp production grew by 1% in August (6.7% in July), with 5% of accumulated annual growth.

## Main Figures

SPECIFIED	AUGUST						
	MONTH		ACCUMULATED YEAR				
	2013	2012	%13/12	2013	2012	%13/12	%2013
<b>OIL</b>							
PRODUCTION - with Shale Oil and NGL(10 <sup>3</sup> b/d)	2,107	2,102	0.2	2,082	2,182	-4.6	-
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	113	108	5.1	113	119	-5.2	-
<b>OIL PRODUCTS</b>							
TOTAL CONSUMPTION (10 <sup>3</sup> b/day)	2,871	2,730	5.2	2,641	2,541	4.0	100.0
hereof: DIESEL with biodiesel - (10 <sup>3</sup> b/day)	1,096	1,105	-0.9	1,020	948	7.6	36.7
hereof: GASOLINE C (10 <sup>3</sup> b/day)	723	699	3.4	673	659	2.1	20.4
CONSUMER PRICE - DIESEL (R\$/l)	2.33	2.13	9.7	2.31	2.06	12.1	-
CONSUMER PRICE - GASOLINE C (R\$/l)	2.84	2.72	4.2	2.85	2.73	4.2	-
CONSUMER PRICE - LPG (R\$/13 kg)	41.0	39.2	4.6	40.7	39.1	4.2	-
<b>NATURAL GAS</b>							
PRODUCTION (10 <sup>6</sup> m <sup>3</sup> /day)	77.0	71.4	7.8	76.8	69.1	11.2	-
IMPORTS (10 <sup>6</sup> m <sup>3</sup> /day)	40.1	23.1	73.5	46.4	31.8	45.8	-
NON-UTILIZED AND REINJECTION (10 <sup>6</sup> m <sup>3</sup> /day)	14.0	13.5	4.0	13.4	13.8	-3.2	-
AVAILABILITY FOR CONSUMPTION (10 <sup>6</sup> m <sup>3</sup> /day)	103.1	81.1	27.1	109.8	87.1	26.1	100.0
INDUSTRIAL CONSUMPTION (10 <sup>6</sup> m <sup>3</sup> /day)	42.8	42.8	0.1	41.0	41.8	-1.9	37.4
POWER GENERATION CONS. (10 <sup>6</sup> m <sup>3</sup> /day)	37.0	13.6	172.4	40.9	16.2	152.6	37.3
INDUSTRIAL PRICE PS (US\$/MMBtu) - consumption range of 20,000 m <sup>3</sup> /day	15.8	17.0	-7.1	17.4	16.9	2.8	-
MOTOR PRICE PS (US\$/MMBtu)	19.9	19.5	1.8	20.9	19.9	5.0	-
RESIDENTIAL PRICE PS (US\$/MMBtu)	49.4	51.3	-3.7	52.5	52.1	0.8	-
<b>ELECTRICITY</b>							
NATIONAL INTERCONNECTED SYSTEM	62,692	59,620	5.2	62,088	60,153	3.2	100.0
LOAD - SOUTHEAST/MID-WEST (MWavg)	37,776	36,662	3.0	37,561	36,934	1.7	60.5
LOAD - SOUTH (MWavg)	10,430	10,144	2.8	10,538	10,210	3.2	17.0
LOAD - NORTHEAST (MWavg)	9,262	8,719	6.2	9,609	8,885	8.1	15.5
LOAD - NORTH (MWavg)	5,224	4,095	27.6	4,381	4,123	6.3	7.1
TOTAL CONSUMPTION (TWh) (*)	38.7	37.2	4.0	305.7	296.6	3.1	100.0
RESIDENTIAL (TWh)	10.3	9.6	7.0	82.7	77.7	6.4	27.1
INDUSTRIAL (TWh)	15.9	15.6	1.6	121.9	122.4	-0.4	39.9
COMMERCIAL (TWh)	6.6	6.3	4.6	54.9	52.0	5.4	18.0
OTHER SECTORS (TWh)	5.9	5.6	4.7	46.2	44.5	3.9	15.1
PLANTS ENTRY INTO OPERATING (MW)	231	267	-13.4	4,096	2,391	71.3	-
RESIDENTIAL PRICE (R\$/MWh)	381	455	-16.4	395	459	-14.1	-
COMMERCIAL PRICE (R\$/MWh)	370	430	-14.0	372	425	-12.5	-
INDUSTRIAL PRICE (R\$/MWh)	298	350	-14.8	302	342	-11.7	-
<b>ETHANOL AND BIODIESEL</b>							
BIODIESEL PRODUCTION (10 <sup>3</sup> b/d)	50	52	-3.4	49	44	10.4	-
MOTOR ETHANOL CONSUMPTION (10 <sup>3</sup> b/d)	463	347	33.7	392	313	25.4	-
ETHANOL EXPORTS (10 <sup>3</sup> b/d)	99	64	54.8	52	34	51.9	-
HYDRATED ETHANOL PRICE (R\$/l)	1.90	1.88	1.0	1.98	1.96	1.1	-
<b>COAL</b>							
ELECTRICITY GENERATION (MWavg)	1,768	1,080	63.6	1,523	800	90.4	-
IMPORT PRICE (US\$ FOB/t)	130.5	170.3	-23.4	137.3	186.9	-26.6	-
<b>NUCLEAR ENERGY</b>							
ELECTRICITY GENERATION - (GWh)	1,312	1,469	-10.7	9,691	10,338	-6.3	-
<b>INDUSTRIAL SECTORS</b>							
STEEL PRODUCTION (10 <sup>3</sup> t/day)	97	92	4.9	95	95	-0.6	-
ALUMINIUM PRODUCTION (10 <sup>3</sup> t/day)	3.6	3.9	-7.8	3.7	4.0	-7.8	-
IRON ORE EXPORTS (10 <sup>3</sup> t/day)	875	751	16.5	720	679	6.0	-
PELLETS EXPORTS (10 <sup>3</sup> t/day)	130	132	-1.0	120	135	-11.2	-
CEMENT PRODUCTION (10 <sup>3</sup> t/day)	200	203	-1.0	191	186	2.9	-
PAPER PRODUCTION (10 <sup>3</sup> t/day)	28.4	28.2	0.8	28.2	27.7	1.9	-
PULP PRODUCTION (10 <sup>3</sup> t/day)	39.1	38.7	1.0	40.0	38.1	5.0	-
SUGAR PRODUCTION (10 <sup>3</sup> t/day)	191	204	-6.3	82	83	-0.8	-
SUGAR EXPORTS (10 <sup>3</sup> t/day)	106	79	34.3	70	51	37.2	-

(\*) Classic Self Producers not included. (not use public network)

