

# Monthly Energy Bulletin

Reference Month: July 2013

## Total Primary Energy Supply

The energy indicators of July 2013 indicate an improvement in demand for goods and services. In fact, the electricity consumption, with a monthly growth of 5.2%, and the Otto cycle consumption, with 5.7%, are good examples of domestic demand heightening. Among the export commodities, only cellulose shows some evolution. In Domestic Energy Supply (DES) (\*), the decrease in hydroelectric generation, still significant until July, continues to requiring complementation by thermal generation, increasing energy thermal losses. Under these conditions, the growth rate of DES until this month was estimated at 5.2% over the same period in 2012 (4,9% until June).

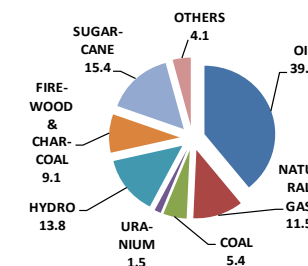
**Total energy demand in 2013 can grow up between 3% and 4%**

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 performance of sugarcane 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% (3.7% until June). Some uncertainties still continue, demanding to be made new revisions of this indicator in each edition of this bulletin.

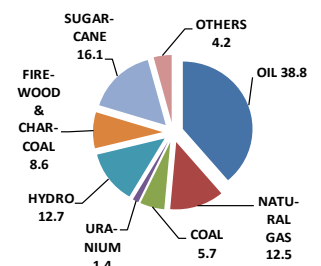
Renewable energy may step back slightly in the 2013 energy matrix. An above average behavior of sugarcane products should be neutralized by lower performances of the firewood and hydro generation uses.

DES 2012 (%)

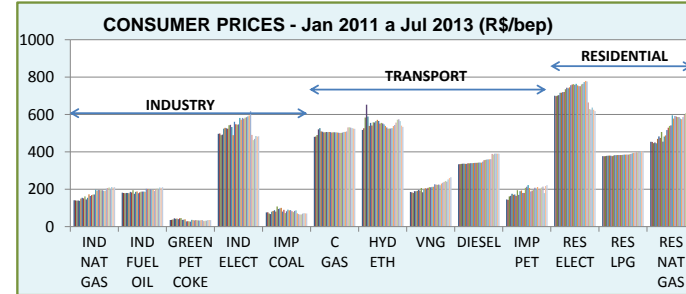
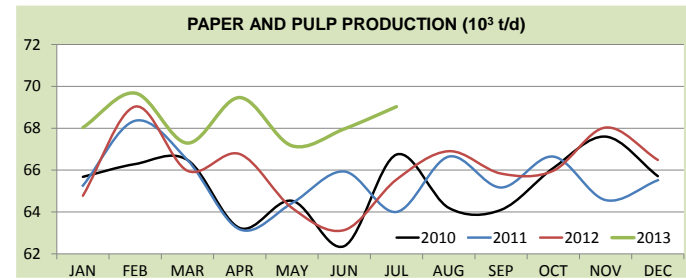
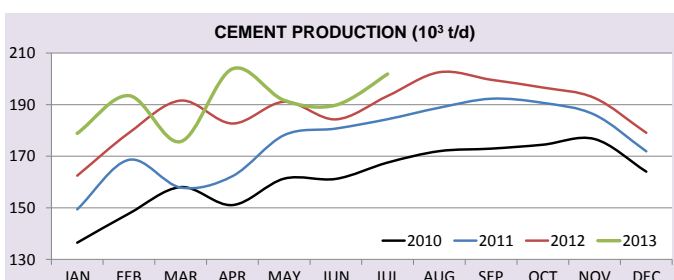
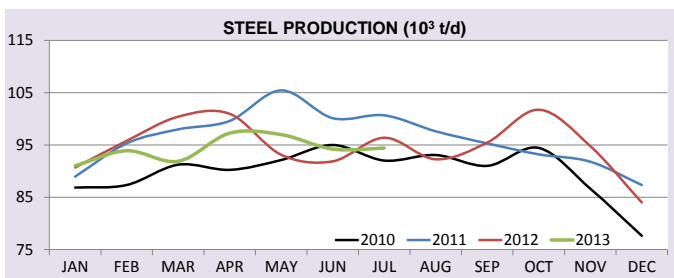
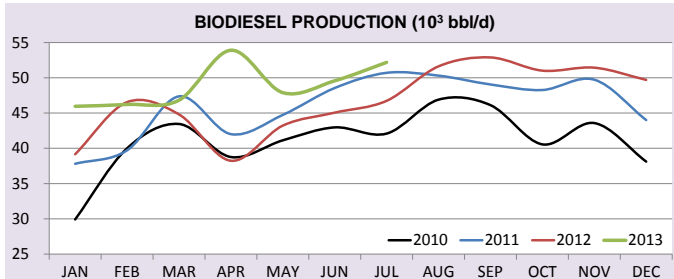
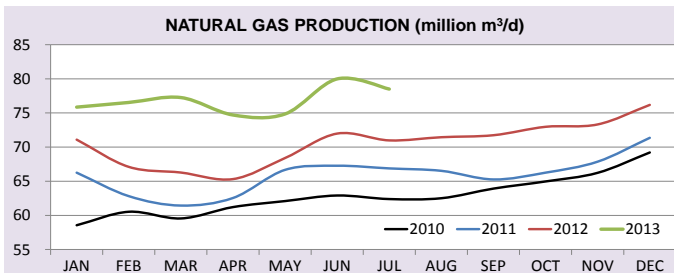
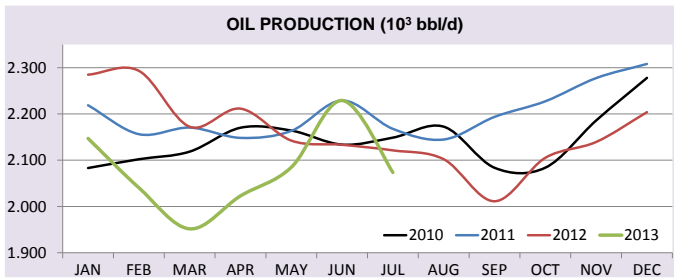


283.6 million toe  
42.4% renewables

DES (Trend for 2013)



295 million toe  
41.5% renewables



**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 July 2013

### Steel production pulls back above 1%

Steel production fell by 2.0% in July 2013, and the cumulative decline is 1.4% in the year. Exports of iron ore rose 13% in July and 4.3% in the year (2.6% to June). The pellet exports continue to decline, with reductions of 14.3% in July and 12.6% in the year.

### Oil production again in fall

The oil production, of 2,073 million b/d in July, decreased 2.3% compared to June, after the high of 14%, recorded in June.

### Hydro supply retreats 11%

The hydraulic power supply fell to 10.6% in July, staying the Itaipu import 1.5% below the level of 2012 (Paraguayan share). Under these conditions, the national hydro generation declined by 11.5% over the same period of 2012.

### Oil derivatives consumption recovers heightening

The apparent consumption of petroleum products increased by 5.8% in July (0.4% in June) and 3.8% in the year (3.4% up to June). The consumption of diesel, with a rate of 7.5% in July (6.6% in June), maintains significant rate in the year of 9.0%. Gasoline C increased 7.0% in July (receding of 13.4% in June), and has a positive rate of 1.9% in the year (1% until June) - automotive ethanol consumption grew 24.0% until July. The natural gas total demand grew up an impressive 26.0% through July (25.4% to June), still reflecting the increase in thermal generation (14.7% in the year).

Energy use in Otto cycle transport (gasoline + ethanol + gas), with a rate of 5.7% in the year, also maintains some moderation, compared to the 8.3%, verified in 2012.

### Electricity consumption is still high

Electricity consumption (excluding captive self-producer) rose 5.2% in July. In the year, the accumulated rate is 2.9% (2.6% until June and 2.4% until May). Industrial consumption accumulates negative rate of 0.7% (-1.2% until June), and the commercial and residential sectors accumulate positive rates of 6.4% and 5.6% respectively.

### Electricity tariffs recoil

The residential sector Brazilian average power tariff fell down 13.8% in the year, the commercial tariff, 12.3% and the industrial tariff, 11.3%.

### Biodiesel production remains high

Biodiesel production increased 11.7% in July and 12.8% in the year. In 2012, the rate was 1.7%.

Cement production grew by 4.4 % in July (3.0% in June and 0.3 % in May). In the year, the growth is at 3.9 % (2.7 % to June). Pulp production continues with good growth rates (6.7% in July and 9.8% in June), with 5.6% of accumulated annual growth.

## Main Figures

SPECIFIED	JULY						
	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)	2,073	2,121	-2.3	2,078	2,193	-5.2	-
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	111	105	5.7	113	121	-6.5	-
<b>OIL PRODUCTS</b>							
TOTAL CONSUMPTION (10 <sup>3</sup> b/day)	2,653	2,507	5.8	2,608	2,513	3.8	100.0
hereof: DIESEL with biodiesel - (10 <sup>3</sup> b/day)	1,088	1,012	7.5	1,009	925	9.0	36.8
hereof: GASOLINE C (10 <sup>3</sup> b/day)	703	657	7.0	665	653	1.9	20.4
CONSUMER PRICE - DIESEL (R\$/l)	2.33	2.08	12.4	2.30	2.05	12.4	-
CONSUMER PRICE - GASOLINE C (R\$/l)	2.84	2.73	4.0	2.85	2.74	4.2	-
CONSUMER PRICE - LPG (R\$/13 kg)	40.9	39.2	4.4	40.7	39.1	4.1	-
<b>NATURAL GAS</b>							
PRODUCTION (10 <sup>6</sup> m <sup>3</sup> /day)	78.5	71.0	10.6	76.8	68.8	11.7	-
IMPORTS (10 <sup>6</sup> m <sup>3</sup> /day)	46.9	28.9	62.3	47.3	33.1	42.9	-
NON-UTILIZED AND REINJECTION (10 <sup>6</sup> m <sup>3</sup> /day)	13.8	13.5	2.6	13.3	13.9	-4.2	-
AVAILABILITY FOR CONSUMPTION (10 <sup>6</sup> m <sup>3</sup> /day)	111.5	86.4	29.1	110.8	87.9	26.0	100.0
INDUSTRIAL CONSUMPTION (10 <sup>6</sup> m <sup>3</sup> /day)	42.5	42.3	0.3	40.7	41.7	-2.2	36.8
POWER GENERATION CONS. (10 <sup>6</sup> m <sup>3</sup> /day)	32.6	12.1	169.3	41.0	16.6	147.1	37.0
INDUSTRIAL PRICE PS (US\$/MMBtu) - consumption range of 20,000 m <sup>3</sup> /day	16.3	17.0	-3.9	17.7	16.9	4.5	-
MOTOR PRICE PS (US\$/MMBtu)	20.5	19.6	4.4	21.1	19.9	5.7	-
RESIDENTIAL PRICE PS (US\$/MMBtu)	51.6	51.3	0.5	53.2	52.3	1.7	-
<b>ELECTRICITY</b>							
NATIONAL INTERCONNECTED SYSTEM	60,980	57,736	5.6	61,420	59,833	2.7	100.0
LOAD - SOUTHEAST/MID-WEST (MWavg)	36,490	35,389	3.1	37,530	36,973	1.5	61.1
LOAD - SOUTH (MWavg)	10,594	9,737	8.8	10,553	10,220	3.3	17.2
LOAD - NORTHEAST (MWavg)	9,217	8,627	6.8	9,658	8,909	8.4	15.7
LOAD - NORTH (MWavg)	4,679	3,983	17.5	4,261	4,127	3.2	6.9
TOTAL CONSUMPTION (TWh) (*)	37.8	35.9	5.2	267.0	259.2	2.9	100.0
RESIDENTIAL (TWh)	10.0	9.3	8.1	72.4	68.1	6.4	27.1
INDUSTRIAL (TWh)	15.5	15.2	2.1	106.0	106.8	-0.7	39.7
COMMERCIAL (TWh)	6.5	6.0	7.2	48.3	45.7	5.6	18.1
OTHER SECTORS (TWh)	5.8	5.4	6.7	40.3	38.8	3.8	15.1
PLANTS ENTRY INTO OPERATING (MW)	128	730	-82.5	3,865	2,124	81.9	-
RESIDENTIAL PRICE (R\$/MWh)	375	455	-17.7	396	460	-13.8	-
COMMERCIAL PRICE (R\$/MWh)	364	437	-16.7	372	424	-12.3	-
INDUSTRIAL PRICE (R\$/MWh)	293	353	-16.9	302	341	-11.3	-
<b>ETHANOL AND BIODIESEL</b>							
BIODIESEL PRODUCTION (10 <sup>3</sup> b/d)	52	47	11.7	49	43	12.8	-
MOTOR ETHANOL CONSUMPTION (10 <sup>3</sup> b/d)	508	315	61.0	381	308	24.0	-
ETHANOL EXPORTS (10 <sup>3</sup> b/d)	72	83	-14.0	45	30	50.9	-
HYDRATED ETHANOL PRICE (R\$/l)	1.92	1.91	0.5	2.00	1.97	1.1	-
<b>COAL</b>							
ELECTRICITY GENERATION (MWavg)	1,670	881	89.4	1,488	760	95.9	-
IMPORT PRICE (US\$ FOB/t)	128.8	182.7	-29.5	138.2	189.2	-27.0	-
<b>NUCLEAR ENERGY</b>							
ELECTRICITY GENERATION - (GWh)	1,264	1,476	-14.4	8,380	8,869	-5.5	-
<b>INDUSTRIAL SECTORS</b>							
STEEL PRODUCTION (10 <sup>3</sup> t/day)	94	96	-2.0	94	96	-1.4	-
ALUMINIUM PRODUCTION (10 <sup>3</sup> t/day)	3.6	3.9	-8.0	3.7	4.0	-7.8	-
IRON ORE EXPORTS (10 <sup>3</sup> t/day)	847	749	13.0	698	669	4.3	-
PELLETS EXPORTS (10 <sup>3</sup> t/day)	111	130	-14.3	118	136	-12.6	-
CEMENT PRODUCTION (10 <sup>3</sup> t/day)	202	193	4.4	191	184	3.9	-
PAPER PRODUCTION (10 <sup>3</sup> t/day)	28.5	27.6	3.4	28.2	27.6	2.3	-
PULP PRODUCTION (10 <sup>3</sup> t/day)	40.5	37.9	6.7	40.1	38.0	5.6	-
SUGAR PRODUCTION (10 <sup>3</sup> t/day)	172	183	-5.7	67	65	1.7	-
SUGAR EXPORTS (10 <sup>3</sup> t/day)	74	80	-7.7	65	47	37.9	-

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

