

Monthly Energy Bulletin - Brazil

Reference Month: November 2013

Domestic Energy Supply – DES

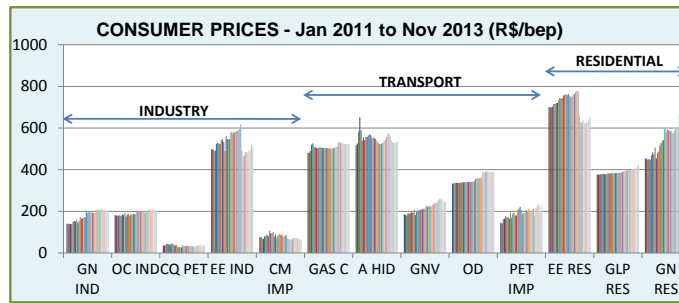
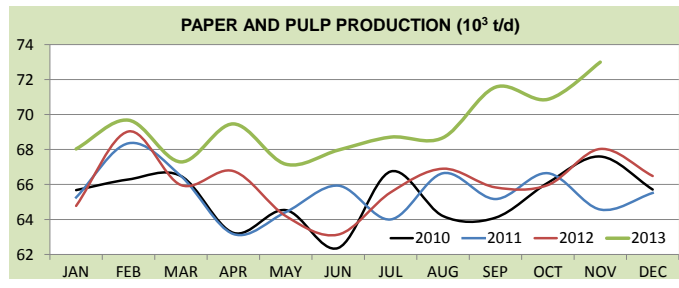
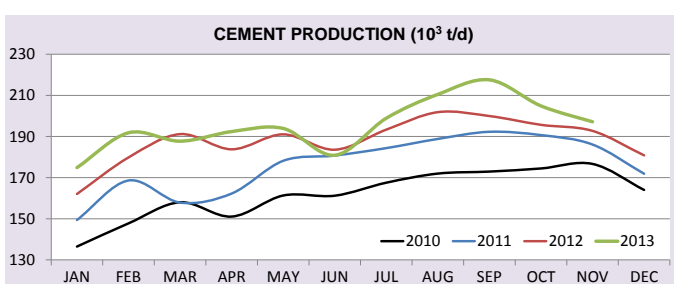
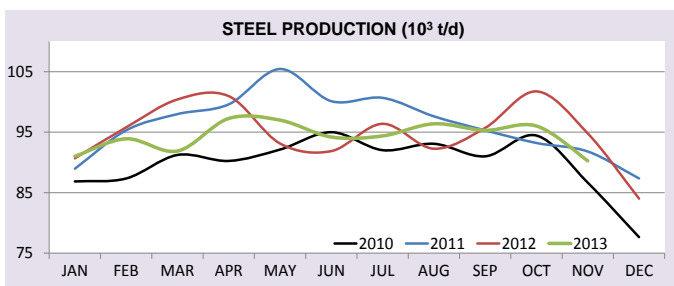
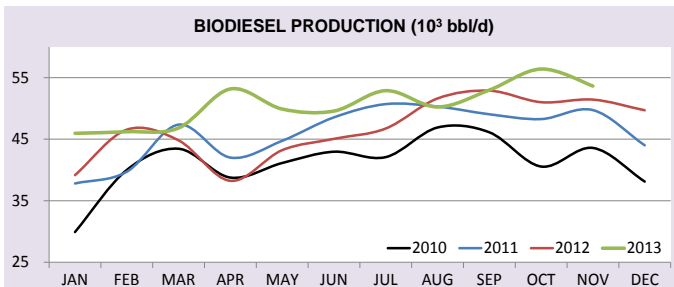
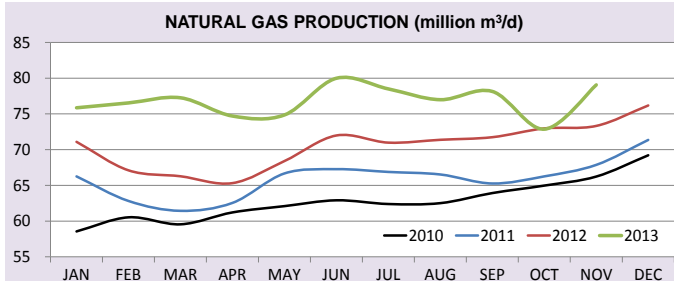
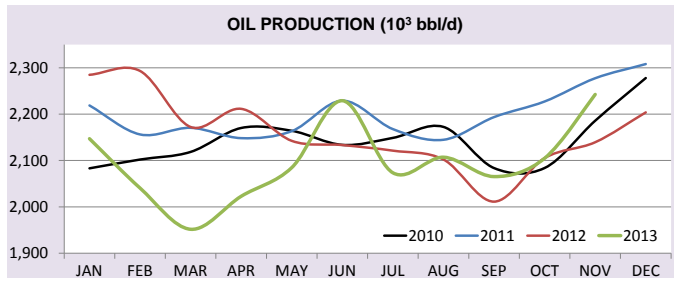
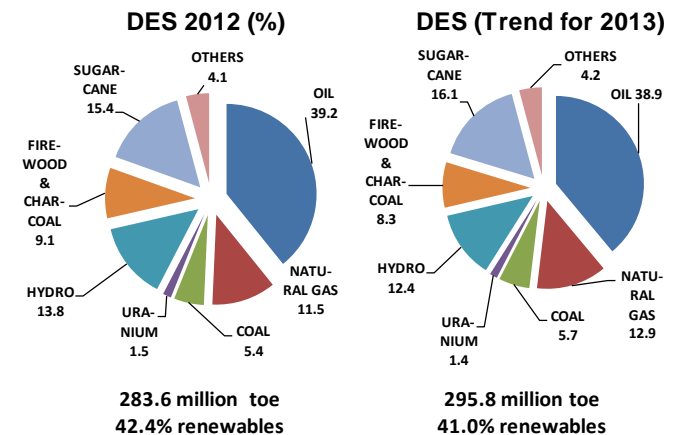
The economic and energy indicators of November 2013 maintains the annual energy demand trends, observed until the previous month. The hydro generation persists with weak performance, which should result in an increase of almost 5 million toe in thermal losses of thermoelectric plants. The 6.2% growth in residential electricity consumption until this month and 6% in the Otto cycle fuels consumption, show that domestic demand for goods and services remains strong. Under these conditions, the growth rate of DES (*) until this month was estimated at 4.3% over the same period in 2012.

Total energy demand in 2013 should grow 4.3%

For the full year of 2013, the DES growth estimations are within 4.0% and 4.5%. 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 paper & pulp industry.

According to the information available at the elaboration of this bulletin, the growth rate of DES for 2013 was estimated at 4.3% (the same as the previous edition), being about 1.7% due to the increase in thermal losses in thermoelectric generation.

Renewable sources 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.

(*) *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.

toe (ton of oil equivalent) = 10 Gcal (Gigacalorie). 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 November 2013

Steel production recoils more than 1%.

Steel production declined 4.8% in November 2013 over the same month in 2012, and year to date, shows a decrease of 1.5% (-1.1% up to October). Iron ore exports grew by 2.6% in November, with a positive rate of 4.5% in the year (5.4% to October). The pellet exports continue to decline, with reductions of 11.3% in the year (-10.3% until October).

Oil production is high

The oil production, of 2,243 thousand barrels per day in November, overcome in 4.8% the production of the same month in 2012. In the year there is a decline of 2.7% in production (-3.5% through October).

Hydro supply recoils near 7%

The hydropower supply decreased 6.7% until November, with Itaipu import staying 0.2% below the level of 2012 (Paraguayan share). Under these conditions, the national hydro generation declined by 7.3% in the year (9% until October).

Consumption of oil products is rising

The apparent consumption of oil products increased by 4.9% in November over the same period of 2012 (1.6% in October) and 3.6% in the year (3.5% up to October). Diesel consumption, with a rate of 2.9% in November, maintains significant rate in the year, of 6.9%. Gasoline C increased 7.4% in November, and has a positive rate of 2.8% in the year - automotive ethanol consumption grew 24.5% until November. The total demand of natural gas grew 19.1% in the year, with an increase of 92% in thermal generation and a decline of 2% in industrial consumption.

Energy use in Otto cycle transport (gasoline + ethanol + gas), remains high, with a rate of 6% in the year, but does not repeat the last year rate, of 8.3%.

Electricity consumption remains the same

Electricity consumption (excluding captive self-producer) grew 3.3% in November. In the year, the rate is the same: 3.3%. Industrial consumption grew 1.8% in November and, in the year, the rate is 0.3% (0.2% until October). The consumption of commercial and residential sectors accumulate positive rates of 5.5% and 6.2% respectively.

Electricity tariffs recoil

The Brazilian electricity average tariff of the residential sector fell 14.7% in the year, the commercial fell 12.3% and the industrial fell 12.2%.

Biodiesel production remains high

Biodiesel production grew 4.3% in November, and 9.2% in the year (rate of 1.7% in 2012).

Cement production grew 2.3% in November, over the same month of 2012. In the year, the growth is 3.6%. Pulp production grew by 9.1% in November (10.2% in October), with 6.8% in the year-to-date.

Main Figures

SPECIFICATION	NOVEMBER						
	IN THE MONTH		ACCUMULATED IN THE YEAR				
	2013	2012	%13/12	2013	2012	%13/12	%2013
OIL							
PRODUCTION - with Shale Oil and NGL(10 ³ b/d)	2,243	2,139	4.8	2,097	2,156	-2.7	-
IMPORTS AVERAGE PRICE (US\$/bbl FOB)	114	114	0.7	112	118	-4.6	-
OIL PRODUCTS							
TOTAL CONSUMPTION (10 ³ b/day)	2,880	2,745	4.9	2,684	2,591	3.6	100.0
hereof: DIESEL with biodiesel - (10 ³ b/day)	1,117	1,086	2.9	1,050	982	6.9	37.2
hereof: GASOLINE C (10 ³ b/day)	747	695	7.4	688	670	2.8	20.5
CONSUMER PRICE - DIESEL (R\$/l)	2.33	2.15	8.6	2.31	2.08	11.2	-
CONSUMER PRICE - GASOLINE C (R\$/l)	2.84	2.75	3.4	2.85	2.73	4.4	-
CONSUMER PRICE - LPG (R\$/13 kg)	43.3	40.0	8.5	41.2	39.2	5.0	-
NATURAL GAS							
PRODUCTION (10 ⁶ m ³ /day)	79.1	73.3	7.8	76.8	70.1	9.6	-
IMPORTS (10 ⁶ m ³ /day)	44.7	46.3	-3.4	46.5	35.4	31.2	-
NON-UTILIZED AND REINJECTION (10 ⁶ m ³ /day)	16.5	12.2	35.1	13.9	13.7	1.6	-
AVAILABILITY FOR CONSUMPTION (10 ⁶ m ³ /day)	107.3	107.4	-0.1	109.4	91.8	19.1	100.0
INDUSTRIAL CONSUMPTION (10 ⁶ m ³ /day)	43.4	43.0	0.9	41.3	42.1	-2.0	37.7
POWER GENERATION CONS. (10 ⁶ m ³ /day)	36.3	40.8	-10.9	39.5	21.7	82.0	36.1
INDUSTRIAL PRICE SP(*) (US\$/MMBtu) - consumption range of 20,000 m ³ /day	15.6	16.7	-6.4	16.9	16.9	0.2	-
MOTOR PRICE SP (US\$/MMBtu)	18.9	19.3	-2.1	20.4	19.8	3.1	-
RESIDENTIAL PRICE SP (US\$/MMBtu)	49.3	50.3	-2.0	51.8	51.8	0.0	-
ELECTRICITY							
NATIONAL INTERCONNECTED SYSTEM	64,764	60,607	6.9	62,685	60,380	3.8	100.0
LOAD - SOUTHEAST/MID-WEST (MWavg)	38,800	36,526	6.2	37,838	37,087	2.0	60.4
LOAD - SOUTH (MWavg)	10,918	10,635	2.7	10,574	10,204	3.6	16.9
LOAD - NORTHEAST (MWavg)	9,957	9,336	6.7	9,676	8,958	8.0	15.4
LOAD - NORTH (MWavg)	5,089	4,110	23.8	4,597	4,131	11.3	7.3
TOTAL CONSUMPTION (TWh) (**)	39.9	38.6	3.3	424.1	410.4	3.3	100.0
RESIDENTIAL (TWh)	10.7	10.2	4.2	114.2	107.5	6.2	26.9
INDUSTRIAL (TWh)	15.8	15.5	1.8	169.2	168.6	0.3	39.9
COMMERCIAL (TWh)	7.4	7.1	4.8	76.1	72.2	5.5	18.0
OTHER SECTORS (TWh)	6.1	5.9	3.6	64.5	62.0	4.0	15.2
PLANTS ENTRY INTO OPERATING (MW)	211	684	-69.2	5,572	3,342	66.7	-
RESIDENTIAL PRICE (R\$/MWh)	387	469	-17.6	393	461	-14.7	-
COMMERCIAL PRICE (R\$/MWh)	387	434	-10.9	375	427	-12.3	-
INDUSTRIAL PRICE (R\$/MWh)	307	358	-14.2	304	346	-12.2	-
ETHANOL AND BIODIESEL							
BIODIESEL PRODUCTION (10 ³ b/d)	54	51	4.3	51	46	9.2	-
MOTOR ETHANOL CONSUMPTION (10 ³ b/d)	444	376	18.1	409	329	24.5	-
ETHANOL EXPORTS (10 ³ b/d)	31	67	-54.0	41	49	-16.4	-
HYDRATED ETHANOL PRICE (R\$/l)	1.93	1.90	1.9	1.96	1.94	1.1	-
COAL							
ELECTRICITY GENERATION (MWavg)	1,959	1,027	90.8	1,598	869	83.9	-
IMPORT PRICE (US\$/t FOB/t)	118.8	180.7	-34.3	134.0	183.0	-26.8	-
NUCLEAR ENERGY							
ELECTRICITY GENERATION - (GWh)	1,433	1,429	0.3	14,040	14,647	-4.1	-
INDUSTRIAL SECTORS							
STEEL PRODUCTION (10 ³ t/day)	90	95	-4.8	94	96	-1.5	-
ALUMINIUM PRODUCTION (10 ³ t/day)	3.4	3.8	-10.5	3.6	3.9	-8.7	-
IRON ORE EXPORTS (10 ³ t/day)	895	919	-2.6	766	733	4.5	-
PELLETS EXPORTS (10 ³ t/day)	135	167	-19.1	122	138	-11.3	-
CEMENT PRODUCTION (10 ³ t/day)	197	193	2.3	195	189	3.6	-
PAPER PRODUCTION (10 ³ t/day)	30.0	28.6	4.8	28.5	27.8	2.5	-
PULP PRODUCTION (10 ³ t/day)	43.0	39.4	9.1	40.8	38.2	6.8	-
SUGAR PRODUCTION (10 ³ t/day)	138	149	-7.2	103	109	-5.9	-
SUGAR EXPORTS (10 ³ t/day)	76	95	-20.9	73	65	11.8	-

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

(**) The classic self-production is not included (does not use the public grid).

