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Brazil

Biofuels Annual

Annual Report 2013

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This report updates the Brazilian ethanol and biodiesel policies and programs described in the Biofuels Annual report from 2012 (BR12013) and provides production, supply and demand estimates and forecasts for 2013 and 2014, respectively.

1. Executive Summary

The present report includes the following sections: (1) Executive Summary; (2) Policy and Programs; (3) Bioethanol; (4) Biodiesel; (5) Advanced Biofuels; and, (6) Notes on Statistical Data.

1.1. Brazil's Political Division

The map below shows Brazil's political division in regions and states.

2. Policy and Programs

2.1. Government Support Programs for Bioethanol

2.1.1. Regional Producer Subsidy

According to Provisional Measure ("Medida Provisoria") # 615 from May 2013, small North-Northeast sugarcane growers affected by the drought during the 2011/12 crop are eligible for the Regional Producer Subsidy in the amount of R$ 12.00 per metric ton of sugarcane up to 10,000 metric tons/grower. Ethanol manufacturers are also eligible for R$ 0.20/liter of ethanol produced and marketed during the 2011/12 crop. Provisional Measure # 624 from August 2013 complements the aforementioned measure releasing R$ 148 million to 17,000 sugarcane growers affected by the worst drought in several years in Northeast Brazil.

2.1.2. Ethanol use mandate

According to Resolution # 1 from February 2013, of the Sugar and Ethanol Interministerial Council (CIMA), in May 2013, the percentage of ethanol blended to gasoline increased from 20 to 25 percent, due to expected higher sugarcane crop and higher availability of the product. According

to Provisional Measure (Medida Provisoria – MP) #532 of April/2011, the percentage of ethanol blended to gasoline can vary from 18 to 25 percent.

2.1.3. Tax incentives for ethanol

A. Tax incentives for ethanol-flex fuel vehicles

The table below shows the value of IPI (Tax on Industrialized Products), PIS/COFINS (Contribution to the Social Integration Program/Contribution for Financing Social Security) and ICMS (State tax for circulation of goods and services) for different categories of vehicles as reported by the National Association of Motor Vehicle Manufacturers (ANFAVEA). Note that taxes on flex cars are lower than taxes on gasoline powered cars, especially with regard to the IPI. No changes have been made in the tax structure for 2012.

Taxes Applied to Ethanol, Flex-Fuel and Gasoline Vehicles (In percent)						
Year	**Taxes**	**1000 cc**	**1001-2000 cc**		**Over 2000 cc**	
		Gas 1/ /Eth/Flex	**Gas 1/**	**Eth/Flex**	**Gas 1/**	**Eth/Flex**
2004 to 2007	IPI	7	13	11	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	27.1	30.4	29.2	36.4	33.1
2008	IPI	0	6.5	5.5	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	22.2	26.4	25.8	36.4	33.1
2009	IPI	5/3*	11	7.5	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	25.7/24.4*	29.2	27.1	36.4	33.1
January thru March 2010	IPI	7/3*	13	7.8	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	27.1/24.4*	30	27.1	36.4	33.1
As of April 2010 and 2011	IPI	7	13	11	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	27.1	30.4	29.2	36.4	33.1
2012	IPI	7	13	11	25	18
	ICMS	12	12	12	12	12
	PIS/COFINS	11.6	11.6	11.6	11.6	11.6
	% of Avg MSRP	27.1	30.4	29.2	36.4	33.1
Source: National Association of Motor Vehicle Manufacturers (ANFAVEA)						
1/ Gas = Gasoline. *The tax of 3% refers to flex fuel cars MSRP = Manufacturer Suggested Retail Price.						

B. Tax incentives for ethanol fuel

The CIDE (Contribution for Intervention in Economic Domain) value remains unchanged at zero for both ethanol and gasoline. Therefore, the GoB does not provide preferential treatment for ethanol under CIDE as it did prior to June 2012 when CIDE for gasoline was set to zero. CIDE funds are used to finance infrastructure works and maintenance of the transportation system, as well as finance environmental projects related to the oil and natural gas industry and; to pay subsidies, if determined by specific legislation, to ethanol, natural gas and oil derivates prices or distribution.

PIS/COFINS (Contribution to the Social Integration Program/Contribution for Financing Social Security) federal taxes are charged together. For gasoline, PIS/COFINS are set at R$0.2616/liter. In May 2013, through Provisional Measure # 613, the GOB created a PIS/CONFINS presumed credit for the ethanol industry which in practice dropped to zero the R$0.12/liter (R$0.048/liter on producers and R$0.072/liter on distributors) that applies to the product.

No changes have been made to the ICMS - State tax for circulation of goods and services. There are different tax regimes depending on the Brazilian state. ICMS charged on ethanol varies from 12 to 27 percent, with most states charging 25 percent. ICMS for gasoline varies from 25 to 31 percent.

2.1.4. Credit Lines

In March 2013, BNDES announced the continuity of the Prorenova, a credit line of R$4 billion (approximately US$ 1.75 billion) available until December 31, 2013, to finance the renewal and/or expansion of sugarcane fields. The interest rate dropped from 8.5-9.5 percent in 2012 to 5.5 percent in 2013. The payment is due within 72 months and an 18-month grace period.

In April 2013, the GOB through Resolution # 4,612 from the Brazilian Central Bank (BACEN) created a R$ 2 billion (approximately US$ 0.87 billion) credit line with a 7.7 percent interest rate to support ethanol storage. The reference price is set at R$ R$ 1.37/liter of anhydrous ethanol and R$ 1.21 for hydrous ethanol.

2.1.5. Ethanol Import Tariff

No changes have been made to the ethanol import tariff. In December, 2011, the GoB, through Resolution #94 of the Ministry of Development, Industry and Commerce (MDIC)/Chamber of Foreign Trade (CAMEX) extended the zero import tariff applied to ethanol with less than one percent water from December 31, 2011 to December 31, 2015.

Note that according to the Mercosul (Common Southern Market) agreement, the import tariff for ethanol is 20 percent, however, since April 2010, the product was included in the "list of exceptions" and cut to zero percent.

2.1.6. Ethanol Supply Contracts

The National Agency of Petroleum, Natural Gas and Biofuels (ANP) has regulated the ethanol sector since April 2011 with the enactment of Provisional Measure #532. Through Resolution # 67 of 2011, ANP began to monitor the marketing trade of anhydrous ethanol between producers and distributors as of April 2012.

Fuel distributors are required to adopt a **yearly supply contract** to meet purchasing targets. The target is equivalent to 90 percent of total gasoline C (gasoline blended with ethanol) sales from the previous year and will be enforced in the beginning of every crop year (April 1). If distributors choose not to set a supply contract and buy the product on a monthly basis (**direct purchase**), they are required to have stocks on the last day of the month equivalent to the volume of gasoline C marketed in the subsequent month of the previous year.

ANP summarized the operations for the 2012/13 sugarcane/ethanol crop as follow: 54 fuel distributors which represent 90 percent of the domestic market chose the yearly supply contract option whereas 78 distributors (10 percent of the market) opted for the direct purchase system. Note that all large distributors as well as many small ones where able to meet the requirements for the contract option.

2.2. Government Support Programs for Biodiesel

2.2.1. Biodiesel use mandate

The biodiesel use mandate has been set at 5 percent (B5) since 2010. Several industry proposals have advocated the gradual increase of the blend to 10 percent along the next few years. The National Agency of Petroleum, Natural Gas and Biofuels (ANP) reports that the National Council for Energy Policy (CNPE) has studied the possibility to increase the current blend to 7 percent in the recent future. No decision has been taken yet.

2.2.2 Biodiesel Stocks

In April 2013, the Ministry of Mines and Energy (MME) through "Portaria" # 116 set a new regulation to biodiesel stocks. The main feature is the introduction of the "option to buy" contract in which the buyers (basically, Petrobras) contract the right to pick up the product at any time at the biodiesel plant. The stocks will be mostly held at the plants. This measure aims to avoid the degradation of the product when stored at long periods by Petrobras.

2.2.3. Biodiesel Import Tariff

According to the Secretariat of Foreign Trade, the import tariff applied to biodiesel (NCM 3826.00.00) is set at 14 percent.

2.3. Biofuels in the Current Brazilian Energy Matrix

Environmental concerns make energy produced from biomass a key element toward sustainable development. The Ministry of Mines and Energy (MME) has set the increase of biofuels' share in the Brazilian energy matrix as one of the policy directives for the sector.

Recent data reported by the MME show that the domestic supply of energy in 2012 was 283.7 million metric tons petroleum equivalent (tpe), a 4.1 percent increase compared to 2011 (272.4 million tpe). The table below shows Brazil's Brazilian energy supply, according to MME.

Brazilian Energy Supply (million TPE)				**Variation**	**Structure**
Type/Year	**2010**	**2011**	**2012**	**12/11**	**2012**

Non-Renewable Energy	147.569	152.600	163.400	7.1%	57.6%
Petroleum and derivatives	101.714	105.200	111.200	5.7%	39.2%
Natural Gas	27.536	27.700	32.600	17.7%	11.5%
Mineral Coal and derivatives	14.462	15.500	15.300	-1.3%	5.4%
Uranium (U3O8) and derivatives	3.857	4.200	4.300	2.4%	1.5%
Renewable Energy	121.203	119.827	120.300	0.4%	42.4%
Hydraulic and Electric Energy	37.663	39.943	39.200	-1.9%	13.8%
Log Wood and Vegetal Coal	25.998	26.000	25.700	-1.2%	9.1%
Sugarcane derivatives	47.102	42.779	43.600	1.9%	15.4%
Other Renewable sources 1/	10.440	11.105	11.800	6.3%	4.2%
Total Energy Supply	268.771	272.427	283.700	4.1%	100.0%

Source: National Energetic Balance. TPE = Ton Petroleum Equivalent. 1/ Other renewable sources include biodiesel, eolic and lixivium for cellolosic production.

Brazil remains the worldwide leading supplier of energy from renewable sources with 42.4 percent of the energy matrix from renewable sources in 2012 whereas it represents 8 percent of the total for the Economic Cooperation and Development (OECD) countries.

MME also reports that the total domestic consumption of energy in 2012 was 236.7 million tpe, a 3.4 increase compared to 2011 (228.7 million tpe), due to higher industrial activity. Industrial use (83.08 million tpe) and transportation (74.1 million tpe) represent the largest shares of energy use with 35.1 and 31.3 percent of the total, respectively.

The table below shows the Brazil's electric energy supply matrix as reported by MME. Hydroelectric energy remains the major source of electric energy, making up to 77 percent of total supply.

Electric Energy Supply Matrix (TWh)			
Source	**2011**	**2012**	**12/11**
Renewable Energy	63.583	91.884	44.5%
Natural Gas	24.979	46.831	87.5%
Petroleum Derivatives	14.760	19.562	32.5%
Nuclear	15.896	16.006	0.7%
Mineral Coal	7.948	9.485	19.3%
Non-Renewable Energy	504.686	501.508	-0.6%
Hydroelectric 1/	464.379	455.863	-1.8%
Biomass	37.468	40.310	7.6%
Wind	2.839	5.335	87.9%
Total	567.700	592.800	4.4%

Source: MME, Balanco Energético Nacional, 2013. 1/ Include imports

2.4 Transport Fuel Consumption

Transport fuel projections assume a 3 percent growth rate in the Brazilian Growth Domestic Product (GDP). No information is available for diesel use breakdown.

Fuel Use Projections (Liters - specify unit)									
Calendar Year	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
Gasoline Total	43,260	44,558	45,895	47,271	48,690	50,150	51,655	53,204	54,800
Diesel Total	60,460	62,274	64,142	66,066	68,048	70,090	72,192	74,358	76,589
On-road	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Agriculture	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Construction/mining	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Shipping/rail	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Industry	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Heating	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Jet Fuel Total	7,800	8,034	8,275	8,523	8,779	9,042	9,314	9,593	9,881
Total Fuel Markets	111,520	114,866	118,312	121,861	125,517	129,282	133,161	137,156	141,270

3. Ethanol

Bioethanol is an alcohol made by fermenting the sugar components of plant materials such as corn and wheat starch, sugarcane, sugarbeet, sorghum, and cassava.

Ethanol Used as Fuel and Other Industrial Chemicals (Million Liters)									
Calendar Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Beginning Stocks	2,743	3,373	4,829	5,783	4,048	5,916	6,891	7,094	6,691
Fuel Begin Stocks	2,386	3,016	4,467	5,422	3,682	5,549	6,488	6,690	6,282
Production	17,782	22,557	27,140	26,105	27,965	22,893	23,509	26,572	28,963
Fuel Production	15,773	19,587	23,582	22,201	24,516	20,212	20,739	23,722	25,913
Imports	0	4	0	4	76	1,136	554	200	250
Fuel Imports	0	0	0	0	74	1,100	553	195	240
Exports	3,429	3,533	5,124	3,296	1,906	1,964	3,055	3,400	3,650
Fuel Exports	2,445	1,932	3,044	1,118	562	1,083	2,500	2,800	3,000
Consumption	13,723	17,573	21,062	24,548	24,267	21,090	20,805	23,775	26,078
Fuel Consumption	12,698	16,203	19,584	22,823	22,162	19,290	18,590	21,525	23,678
Ending Stocks	3,373	4,829	5,783	4,048	5,916	6,891	7,094	6,691	6,177
Fuel Ending Stocks	3,016	4,467	5,422	3,682	5,549	6,488	6,690	6,282	5,758
Production Capacity									
Number of Refineries	352	377	407	426	430	418	408	399	399
Nameplate Capcty (million liters)	27.5	32.,5	38.3	35.6	41.3	42.8	41,.6	40,.7	40.7
Capacity Use (%)	65%	69%	71%	73%	68%	53%	57%	65%	71%
Feedstock Use (1,000,000 MT)									
Sugarcane	2151.2	269.6	335.2	346.0	342.3	293.8	297.9	325.8	366.4
Market Penetration (Liters - specify unit)									
Fuel Ethanol	12,698	16,203	19,584	22,823	22,162	19,290	18,590	21,525	23,678
Gasoline	24,008	24,325	25,175	25,409	29,844	35,491	39,698	40,000	42,000
Blend Rate (%)	52.9	66.6	77.8	89.8	74.3	54.4	46.8	53.8	56.4

3.1. Brazilian Bioethanol Production, Supply and Demand (PS&D) Tables

Sugarcane is virtually the exclusive source of feedstock for bioethanol production in Brazil. The tables below show the Brazilian bioethanol supply and demand (PS&D) spreadsheets for "**All Uses**" and "**Fuel Use Only**" for calendar years 2009 through 2014. Several remarks must be made regarding the aforementioned tables - see Notes on Statistical Data – Bioethanol (Section 6.1.).

ATO/Sao Paulo has historically reported all figures related to the sugar-ethanol industry in marketing years (MY) and, therefore, made all necessary adjustments to convert from marketing to calendar years. The Brazilian official marketing year for sugarcane, sugar and ethanol production, as determined by the Brazilian government, remains May-April for the center-south producing states, although sugarcane crushing has started as early as late March in past years. The official marketing year for the North-Northeast is September-August.

Note: no Brazilian government entity or trade source maintains production figures on use "for fuel" or "other uses". All bioethanol production figures are solely reported as hydrous and anhydrous volumes. According to post contacts, ethanol plants produce different specifications of hydrous and/or anhydrous, but make no distinction between fuel/other uses. The use for fuels/other uses (industrial, refined or neutral) are determined at the consumer level.

Total Conventional Bioethanol Production, Supply and Demand All Uses (million liters)						
CY	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Begin Stocks	5,783	4,048	5,916	6,891	7,094	6,691
Production	26,105	27,965	22,893	23,509	26,572	28,963
Imports	4	76	1,136	554	200	250
Fuel	0	74	1,100	553	195	240
Other Uses	4	1	36	1	5	10
Total Supply	31,893	32,089	29,945	30,954	33,866	35,905
Exports	3,296	1,906	1,964	3,055	3,400	3,650
Fuel	1,118	562	1,083	2,500	2,800	3,000
Other Uses	2,179	1,344	881	555	600	650
Consumption	24,548	24,267	21,090	20,805	23,775	26,078
Fuel	22,823	22,162	19,290	18,590	21,525	23,678
Other Uses	1,725	2,105	1,800	2,215	2,250	2,400
Ending Stocks	4,048	5,916	6,891	7,094	6,691	6,177
Source: Prepared by ATO/Sao Paulo based on MAPA, SECEX, Datagro, ANP, UNICA and industry sources. Numbers for 2011 and 2012 are projections.						

Ethanol for Fuel (million liters)						
CY	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Beginning Stocks	5,422	3,683	5,549	6,488	6,690	6,282
Production	22,201	24,516	20,212	20,739	23,722	25,913
Imports	0	74	1,100	553	195	240
Exports	1,118	562	1,083	2,500	2,800	3,000
Consumption	22,823	22,162	19,290	18,590	21,525	23,678
Ending Stocks	3,683	5,549	6,488	6,690	6,282	5,758
Source: Prepared by ATO/Sao Paulo based on the "Bioethanol Production, Supply and Demand - All Uses" table. Numbers for 2011 and 2012 are projections.						

3.2. Production

A. Production Estimates

Post projections are based on industry sources. To be in accordance with the actual feedstock production cycle, the following narrative describes sugarcane and ethanol production in marketing years (MY). Note that all necessary adjustments were made to convert production figures from MY to calendar years.

The Agricultural Trade Office (ATO)/Sao Paulo estimates the MY 2013/14 Brazilian sugarcane production at 640 million metric tons (mmt), up 48.1 mmt from MY 2012/13. The center-south (CS) region is expected to harvest 585 mmt of sugarcane, a 10 percent increase relative the previous crop (532.6 mmt), due to expected higher agricultural yields as a result of good weather conditions and adequate renewal of sugarcane stocks. ATO/Sao Paulo forecasts the North-Northeastern (NNE) production for MY 2013/14 at 55 mmt, down 3.5 mmt from the revised figure for MY 2012/13 (58.5 mmt) due to weather related problems (drought) that affected growing regions.

Total sucrose (total reducing sugar, TRS) content destined for sugar and ethanol production during MY 2013/14 is estimated at 48 and 52 percent, respectively, as opposed to an equal split of 50/50, respectively for MY 2012/13. Sugar-ethanol mills are likely to increase ethanol production due to an expected increase in the ethanol content blended with gasoline.

It is still too early to project MY 2014/15 production figures. More precise numbers should be available in the first quarter of 2014 with the development of feedstock from new sugarcane plantings and recovery from current harvested areas; e.g., sugarcane from second, third, fourth, fifth and older cuts; as well as projections for sugar and ethanol demand in both the domestic and international markets. The current production forecast is based on the assumption that regular weather conditions will prevail throughout the sugarcane production cycle.

Post projects sugarcane production for MY 2014/15 at 690 mmt, a 8 percent increase compared to the current crop, assuming historical stock renewal rates and agricultural yields.

ATO projects the 2014 total bioethanol production at 28.9 billion liters, up 9 percent from the 2013 estimate (26.6 billion liters). Ethanol for fuel production is forecast at 26.6 billion liters for 2014, a 2.3 billion liters increase over 2013 (24.3 billion liters).

B. Industrial Capacity

ATO/Sao Paulo has adjusted total industrial capacity for sugarcane crushing to 3.42 million metric tons/day, down 5 percent from previous crops, to reflect the reduction in the number of ethanol and sugar-ethanol plants in operation.

Ethanol production capacity for 2014 is forecast at 40.7 billion liters, equivalent to 2013. This figure reflects the lower number of ethanol and sugar-ethanol plants in operation. Ethanol installed industrial capacity depends on yearly decisions made by individual plants to produce sugar and/or ethanol. Post contacts report that the industry responds to the theoretical ratio of 40:60 to change from sugar to ethanol production or vice versa from harvest to harvest. Once producing units

adjust their plants to produce a set ratio of sugar/ethanol in a given year, there is much less flexibility to change it during the crushing season.

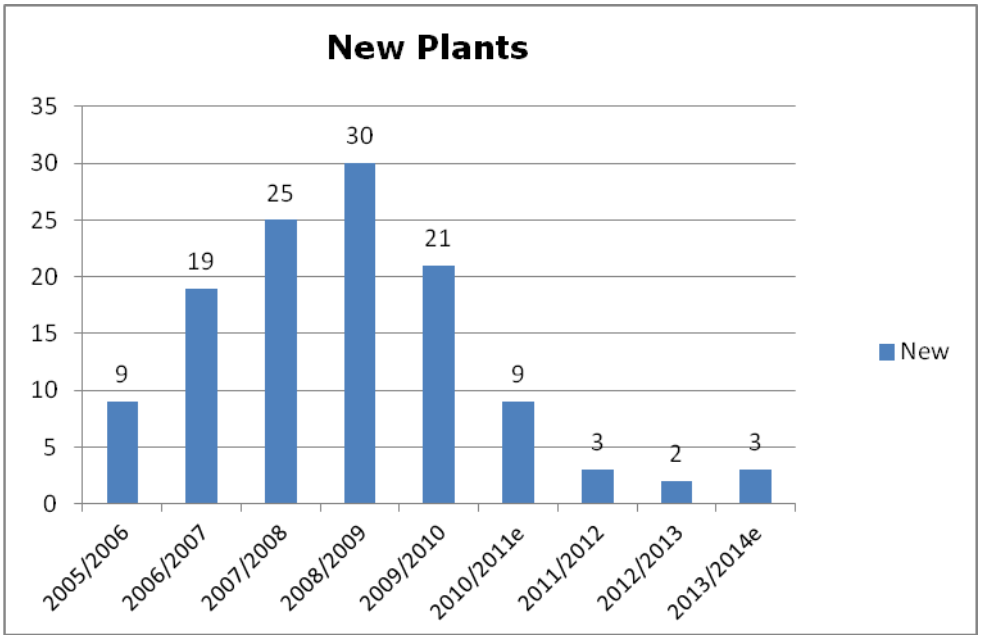
Ethanol production capacity estimated in this report was based on production figures reported by UNICA. Post took the highest ethanol production figure in a given 15-day period, and extrapolated to the entire Center-south crushing season. A similar procedure was followed for Northeast production based on MAPA reports. Sugarcane crushed for ethanol production was calculated based on the actual production breakdown for sugar/ethanol as described in previous GAIN reports. On average, one metric ton of sugarcane produces 80.5 liters of ethanol.

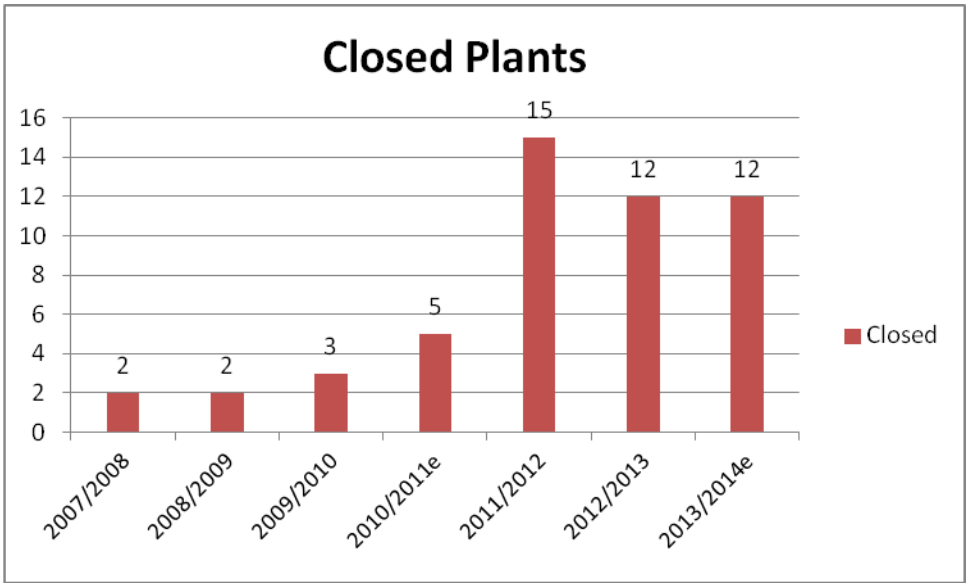
C. New Investments/Shut Down of Ethanol Plants

The graphs below show revised data for the evolution of new/closed ethanol and sugar-ethanol plants as of MY 2005/06 as reported by UNICA. Investments in new greenfield projects remain scarce. UNICA estimates only three new plants for 2013/14.

Concurrently, several units have been closed in the past couple of years. UNICA projects that 12 units should close operations this season due to high debts, lack of profitability and the difficulties in getting credit. Note that some of the units have been acquired by larger and financially healthy groups.

Total number of sugar-ethanol mills in 2013 is estimated at 399 units, whereas total operating units for 2012 was 408.





D. Sugarcane and Ethanol Prices received by Producers

Sugarcane prices received by third party suppliers for major producing states are based on a formula that takes into account prices for sugar and ethanol prices both in the domestic and international markets. The State of Sao Paulo Sugarcane, Sugar and Ethanol Growers Council (CONSECANA) was the first to develop this formula for the state of Sao Paulo, the major producing state comprising roughly 60 percent of the Brazilian production.

The average CONSECANA price for the current crop (MY 2013/14) for the April-July 2013 period is R$0.4429 kg of TRS, or approximately R$55.81 ton of sugarcane. CONSECANA reports that the average sugarcane price for the state of Sao Paulo for the 2012/13 crop is R$0.4728 per kg of TRS, or R$64.10 per ton of sugarcane. The Ethanol Indexes released by the University of Sao Paulo's College of Agriculture "Luiz de Queiroz" (ESALQ) follow. The Indexes track anhydrous and hydrous ethanol for fuel prices received by producers in the domestic spot market.

Fuel Anhydrous Ethanol Prices: State of São Paulo (R$/000 liters).					
Month	**2009**	**2010**	**2011**	**2012**	**2013**
January	873.30	1285.40	1233.20	1270.30	1302.50
February	860.30	1297.60	1293.10	1184.60	1352.70
March	744.50	974.60	1596.60	1278.80	1374.50
April	697.00	908.40	2375.00	1259.70	1394.80
May	676.40	839.20	1380.70	1294.30	1329.10
June	692.80	827.30	1244.60	1234.00	1285.20
July 1/	803.78	924.20	1298.90	1232.50	1271.20
August	820.70	961.90	1352.80	1198.70	--
September	912.90	1040.20	1384.20	1198.90	--
October	1086.40	1173.20	1378.50	1140.00	--
November	1093.80	1185.20	1377.30	1234.90	--
December	1131.60	1201.80	1359.20	1287.20	--
Source: USP/ESALQ/CEPEA.					

Fuel Hydrous Ethanol Prices: State of São Paulo (R$/000 liters).					
Month	**2009**	**2010**	**2011**	**2012**	**2013**
January	781.40	1171.20	1109.40	1159.00	1144.60
February	777.60	1095.80	1176.10	1119.80	1232.00
March	656.80	825.20	1421.90	1204.40	1226.40
April	621.30	799.70	1387.50	1191.40	1244.30
May	585.22	724.30	1005.90	1140.10	1110.20
June	606.60	720.30	1113.70	1082.80	1140.20
July 1/	710.20	797.90	1136.80	1059.90	1114.50
August	726.50	835.70	1193.00	1041.70	--
September	791.40	896.20	1204.60	1062.40	--
October	935.10	977.70	1229.70	1010.60	--
November	941.90	1001.00	1277.00	1095.90	--
December	1000.40	1075.10	1250.10	1132.50	--
Source: USP/ESALQ/CEPEA.					

3.3. Consumption

Brazil is an important user of ethanol for fuel consumption. Total domestic demand for ethanol for calendar year 2014 is projected at 26.1 billion liters, a 10 percent increase relatively to 2013 (23.8 billion liters), based on likely higher supply, attractive ethanol prices at the pump and the continued steady sales of flex-fuel vehicles in the market. Total ethanol consumption for use as fuel is estimated at 23.7 billion liters for 2014. Ethanol consumption for other uses is projected at 2.4 billion liters, up 150,000 liters compared to 2013 (2.25 billion liters) due to steady demand from the chemical industry.

The size of the Brazilian light vehicle fleet was estimated at over 30 million units in 2012 and pure hydrous ethanol and flex fuel powered vehicles represent together approximately over 55 percent of the total fleet. Industry projections report that the share of flex fuel vehicles is likely to reach over 80 percent by 2020.

The table below shows the licensing of flex fuel vehicles (FFV) and hydrous ethanol powered cars, as reported by the Brazilian Association of Vehicle Manufacturers (ANFAVEA). Sales of FFV currently represent over 95 percent of total monthly vehicle sales.

Licensing of Ethanol Powered Vehicles (pure ethanol & flex fuel units)						
2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013 1/**
2,032,361	2,356,942	2,711,267	2,876,173	2,848,071	3,162,824	1,803,298
Source: National Association of Vehicle Manufacturers (ANFAVEA) 1/ January-July						

The steady sales of flex-fuel vehicles do not solely guarantee a higher demand for ethanol given that consumers' decisions are driven by the ratio between ethanol and gasoline prices. The 70 percent ratio between ethanol and gasoline prices is the rule of thumb in determining whether flex car owners will choose to fill up with ethanol (price ratio below 70 percent) or gasoline (price ratio above 70 percent). Note that the crushing period in the center-south started in April/May, but gasoline prices still remained competitive in June 2013 in several Brazilian states.

Gasoline and Ethanol Prices in Selected States (average price, R$/liter)									
		Gasoline				Ethanol			
		2010	2011	2012	2013	2010	2011	2012	2013
Sao Paulo State	Jan	2.477	2.487	2.649	2.644	1.807	1.733	1.888	1.829
	Feb	2.509	2.490	2.641	2.767	1.831	1.765	1.818	1.875
	Jun	2.399	2.665	2.636	2.726	1.274	1.704	1.805	1.787
	Aug	2.412	2.663	2.261		1.387	1.814	1.747	
Sao Paulo City	Jan	2.475	2.482	2.647	2.628	1.810	1.733	1.874	1.818
	Feb	2.508	2.486	2.630	2.739	1.835	1.766	1.801	1.869
	Jun	2.395	2.680	2.630	2.699	1.274	1.716	1.786	1.751
	Aug	2.408	2.673	2.605		1.382	1.820	1.722	
Minas Gerais	Jan	2.489	2.537	2.824	2.824	1.965	1.902	2.208	2.095
	Feb	2.509	2.584	2.817	2.923	2.077	1.956	2.166	2.125
	Jun	2.412	2.823	2.806	2.903	1.678	2.075	2.142	2.105
	Aug	2.621	2.817	2.801		1.710	2.126	2.110	
Belo Horizonte (MG Capital)	Jan	2.431	2.499	2.761	2.740	1.926	1.886	2.172	2.083
	Feb	2.458	2.547	2.746	2.824	2.064	1.938	2.128	2.106
	Jun	2.379	2.778	2.741	2.782	1.661	2.087	2.127	2.065
	Aug	2.381	2.781	2.718		1.683	2.113	2.094	
Rio Janeiro State	Jan	2.641	2.654	2.850	2.898	2.044	2.022	2.266	2.243
	Feb	2.663	2.663	2.846	3.002	2.104	2.053	2.257	2.268
	Jun	2.613	2.892	2.854	3.005	1.703	2.200	2.256	2.303
	Aug	2.598	2.854	2.849		1.718	2.212	2.206	
Rio Janeiro Capital	Jan	2.640	2.651	2.818	2.866	2.050	2.025	2.257	2.231
	Feb	2.660	2.661	2.810	2.967	2.106	2.057	2.236	2.251
	Jun	2.611	2.865	2.821	2.974	1.695	2.165	2.253	2.280
	Aug	2.595	2.824	2.813		1.713	2.191	2.185	
Porto Alegre (RS Capital)	Jan	2.568	2.534	2.738	2.695	2.257	2.103	2.372	2.316
	Feb	2.592	2.552	2.689	2.847	2.335	2.157	2.348	2.336
	Jun	2.488	2.722	2.657	2.751	1.765	2.180	2.390	2.396
	Aug	2.560	2.632	2.663		1.836	2.237	2.360	
Goiania (GO Capital)	Jan	2.654	2.667	2.831	2.743	1.838	1.822	1.959	1.937
	Feb	2.655	2.697	2.782	2.836	1.897	1.891	1.899	1.951
	Jun	2.304	2.830	2.672	2.794	1.227	1.782	1.856	1.849
	Aug	2.384	2.838	2.638		1.347	1.837	1.773	
Fortaleza (CE Capital)	Jan	2.530	2.644	2.551	2.675	1.909	1.871	2.076	2.220
	Feb	2.530	2.647	2.660	2.850	2.013	1.944	2.077	2.280
	Jun	2.663	2.688	2.564	2.856	1.807	2.029	2.163	2.337
	Aug	2.645	2.661	2.685		1.772	2.161	2.162	
Source: Petroleum, Natural Gas and Biofuels National Agency (ANP).									

Ratio Ethanol/Gasoline Prices				
	2010	2011	2012	2013

Sao Paulo	**Jan**	73%	70%	71%	69%
	Feb	73%	71%	69%	68%
	Jun	53%	64%	68%	66%
	Aug	58%	68%	77%	
Sao Paulo	**Jan**	73%	70%	71%	69%
	Feb	73%	71%	68%	68%
	Jun	53%	64%	68%	65%
	Aug	57%	68%	66%	
Minas Gerais	**Jan**	79%	75%	78%	74%
	Feb	83%	76%	77%	73%
	Jun	70%	74%	76%	73%
	Aug	65%	75%	75%	
Belo Horizonte	**Jan**	79%	75%	79%	76%
	Feb	84%	76%	77%	75%
	Jun	70%	75%	78%	74%
	Aug	71%	76%	77%	
Rio Janeiro	**Jan**	77%	76%	80%	77%
	Feb	79%	77%	79%	76%
	Jun	65%	76%	79%	77%
	Aug	66%	78%	77%	
Rio de Janeiro	**Jan**	78%	76%	80%	78%
	Feb	79%	77%	80%	76%
	Jun	65%	76%	80%	77%
	Aug	66%	78%	78%	
Porto Alegre	**Jan**	88%	83%	87%	86%
	Feb	90%	85%	87%	82%
	Jun	71%	80%	90%	87%
	Aug	72%	85%	89%	
Goiania	**Jan**	69%	68%	69%	71%
	Feb	71%	70%	68%	69%
	Jun	53%	63%	69%	66%
	Aug	57%	65%	67%	
Fortaleza	**Jan**	75%	71%	81%	83%
	Feb	80%	73%	78%	80%
	Jun	68%	75%	84%	82%
	Aug	67%	81%	81%	
Source: Petroleum, Natural Gas and Biofuels National Agency (ANP).					
Gray Area means gasoline prices more attractive than ethanol					

Fuel consumption in Brazil, as reported by the Petroleum, Natural Gas and Biofuels National Agency (ANP), follows. The figures take into account the product sales by distributors and do not include illegal sales, which were common in the past for hydrous ethanol due to tax differentiation between both types of ethanol. As a result of measures taken by ANP to avoid tax evasion, figures as of 2008 better reflect total hydrous ethanol consumption.

Brazilian Fuel Consumption Matrix (000 m3)						
	2008	**2009**	**2010**	**2011**	**2012**	**2013 1/**

Diesel *	44,764	44,298	49,239	52,264	55,900	27,973
Gasoline C**	25,175	25,409	29,844	35,491	39,698	19,808
Hydrated Ethanol	13,290	16,471	15,074	10,899	9,850	4,836
Source: ANP. * Diesel includes Bx Biodiesel as of 2008. ** Gasoline C includes 20-25 % of anhydrous ethanol. 1/ 2013 refers to Jan-Jun.						

3.4. Trade

A. Exports

Brazilian total ethanol exports for 2014 are forecast at 3.65 billion liters, slightly up from 2013 (3.4 billion liters). Total 2014 fuel ethanol exports are projected at 3 billion liters. The tables below show ethanol exports (NCM 2207.10 through 2207.20.19) for 2012 and 2013 (January-July), as reported by the Brazilian Secretariat of Foreign Trade (SECEX).

Brazilian Ethanol Exports (NCM 2207.10, 2207.20.11 & 2207.20.19, MT, 000 Liters, US$ 1,000 FOB)						
	CY 2012			**CY 2013 1/**		
Country	**Volume**	**Weight**	**Value**	**Volume**	**Quantity**	**Value**
United States	2,035,867	1,638,921	1,499,993	990,936	783,370	670,389
Jamaica	216,270	191,397	152,176	112,419	90,859	67,119
South Korea	165,788	133,943	108,108	100,765	81,431	60,378
El Salvador	108,421	87,644	68,074	44,451	35,931	27,471
Japan	108,170	86,775	75,836	42,965	34,144	30,051
Costa Rica	97,120	78,528	58,954	0	0	0
Netherlands	91,101	73,579	58,617	42,682	34,474	27,385
Nigeria	71,066	57,428	44,729	50,151	40,517	31,940
Taiwan	38,758	31,345	23,614	15,007	12,134	9,520
Puerto Rico	19,866	16,153	17,216	0	0	0
Others	102,854	82,926	78,875	113,729	91,309	71,359
Total	3,055,280	2,478,638	2,186,191	1,513,105	1,204,169	995,610
Source : Brazilian Foreign Trade Secretariat (SECEX)						
Note : Numbers may not add due to rounding 1/Jan-Jul.						

B. Imports

Brazilian total ethanol imports for 2014 are projected 250 million liters, almost exclusively for fuel use. The tables below show ethanol imports (NCM 2207.10 through 2207.20.19) for 2012 and 2013 (January-July), as reported by the Brazilian Secretariat of Foreign Trade (SECEX).

Brazilian Ethanol Imports (NCM 2207.10, 2207.20.11 & 2207.20.19, MT, 000 Liters, US$ 1,000 FOB)		
	CY 2012	**CY 2013 1/**

Country	Volume	Weight	Value	Volume	Weight	Value
United States	553,189	435,859	376,536	122,226	96,410	85,255
Jamaica	369	341	1,179	287	242	1,013
Barbados	135	115	169	23	20	31
Poland	70	58	107	72	60	108
Guyana	42	41	95	0	0	0
Germany	39	30	514	33	24	276
Trinidad And Tobago	24	20	27	0	0	0
Mexico	9	8	57	5	4	32
France	5	6	77	8	6	55
Spain	3	2	10	3	2	8
Others	2	2	8	0	0	5
Total	553,886	436,482	378,779	122,658	96,769	86,782
Source : Brazilian Foreign Trade Secretariat (SECEX)						
Note : Numbers may not add due to rounding 1/Jan - Jul.						

3.5. Ending Stocks

Beginning stocks for the bioethanol for "All Uses" table is based on information from MAPA and reflect all stocks at ethanol plants on January 1, 2006. Beginning stocks for the bioethanol "For Fuel Only" table is estimated based on historical average use of bioethanol for fuel/other uses.

On average, ethanol for fuel has represented 87 percent of total ethanol disappearance (consumption and exports), therefore Post assumed this percentage to calculate the theoretical beginning stocks for fuel in January 1, 2006. All other stock figures were calculated based on the difference between total supply and disappearance.

ATO/Sao Paulo projects ending stocks for fuel ethanol at 5.75 billion liters for 2014, down 524 million liters from 2013 (6.28 billion liters). Ending stocks measured on December 31 of each year do not actually reflect the supply and demand balance. In general, ethanol plants in the center-south are nearing the end of the crushing, whereas ethanol plants in the northeast are fully operating. As a consequence, stock levels are expected to be high.

Stock figures measured on April 1, after subtracting the disappearance (consumption and exports) during the first quarter of the year, will likely show a more realistic picture about product availability in the beginning of the new crop season (April).

3.6 Logistics

In August 2013, Logum Logistica inaugurated the first 207 kilometers of a pipeline which will move ethanol from Ribeirao Preto up to Paulinia, both located in the state of Sao Paulo in the major Brazilian sugarcane growing area. The operation will be held by Transpetro, a subsidiary from Petrobras. This is part of a major investment made by Logum which will connect the sugarcane/ethanol producing areas in the states of Goias, Mato Grosso do Sul and Minas Gerais to the ports of Sao Sebastiao in Sao Paulo and Rio de Janeiro in the state of Rio de Janeiro

3.7. Market for Ethanol Used as Other Industrial Chemicals

The table below shows the Brazilian bioethanol supply and demand (PS&D) spreadsheet for "**Other Uses**" for calendar years 2009 through 2014. No Brazilian authority or trade source maintains production figures on use "for fuel" or "other uses". All bioethanol production figures are solely reported as hydrous and anhydrous volumes. According to post contacts, ethanol plants produce hydrous and/or anhydrous ethanol and make no distinction between fuel/other uses. The use for fuels/other uses (industrial, refined or neutral) are determined at the consumer level.

Ethanol for "other uses" is used by companies for chemicals, cosmetics, etc. It is common that "ethanol refineries" purchase hydrous/anhydrous ethanol to reprocess and resell to smaller businesses. During the reprocessing, these plants change the original specifications of the product to meet the requested demand.

Ethanol Used as Other Industrial Chemicals (million liters)						
CY	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Beginning Stocks	361	366	367	403	404	409
Production	3,904	3,449	2,681	2,770	2,850	3,050
Imports	4	1	36	1	5	10
Exports	2,179	1,344	881	555	600	650
Consumption	1,725	2,105	1,800	2,215	2,250	2,400
Ending Stocks	366	367	403	404	409	419
Source: Prepared by ATO/Sao Paulo based on the "Bioethanol Production, Supply and Demand - All Uses" table. Numbers for 2011 and 2012 are projections.						

The Ethanol – Other Uses Indexes released by the University of Sao Paulo's College of Agriculture "Luiz de Queiroz" (ESALQ) follow. The Indexes track anhydrous and hydrous ethanol for "other uses" prices received by producers in the domestic spot market.

Price for Anhydrous Ethanol - Other Uses: State of São Paulo (R$/000 liters).					
Period	**2009**	**2010**	**2011**	**2012**	**2013**
January	906.40	1,297.20	1,122.50	1,350.30	1,371.20
February	893.70	1,348.20	1,182.10	1,248.80	1,368.10
March	784.00	1,044.30	1,443.10	1,297.80	1,363.70
April	721.60	926.20	1,424.80	1,321.20	1,401.30

May	733.80	880.10	1,054.70	1,331.40	1,376.20
June	701.60	830.60	1,078.80	1,340.70	1,320.40
July	810.80	925.20	1,165.90	1,315.00	1,335.10
August	846.00	983.80	1,234.00	1,277.80	--
September	916.80	1,047.60	1,207.10	1,286.10	--
October	1,043.90	1,175.40	1,259.60	1,194.10	--
November	1,100.50	1,222.40	1,296.20	1,252.20	--
December	1,098.70	1,221.60	1,275.30	1,334.60	--
Source: USP/ESALQ/CEPEA.					

Price for Hydrated Ethanol - Other Uses: State of São Paulo (R$/000 liters).					
Period	**2009**	**2010**	**2011**	**2012**	**2013**
January	792.30	1,196.20	1,122.50	1,186.40	1,160.40
February	799.40	1,139.60	1,182.10	1,154.60	1,203.20
March	689.40	891.50	1,443.10	1,211.70	1,234.00
April	646.20	803.70	1,424.80	1,217.90	1,277.40
May	611.40	743.40	1,054.70	1,176.00	1,168.00
June	622.50	727.80	1,078.80	1,114.80	1,170.00
July	717.30	810.70	1,165.90	1,101.20	1,158.80
August	745.70	856.10	1,234.00	1,078.20	--
September	807.70	897.80	1,207.10	1,104.30	--
October	942.30	1,000.60	1,259.60	1,060.00	--
November	983.60	1,007.80	1,296.20	1,127.40	--
December	997.10	1,074.50	1,275.30	1,157.70	--
Source: USP/ESALQ/CEPEA.					

4. Biodiesel

Biodiesel is a trans-esterified vegetable oil also known as fatty acid methyl ester produced from soy oil, cottonseed oil, rapeseed, oil, other vegetable oils, animal fats, and recycled cooking oils.

4.1. Brazilian Biodiesel Production, Supply and Demand (PS&D) Table

The table below shows the Brazil's biodiesel supply and demand (PS&D) table for calendar years (CY) 2006 through 2014.

Biodiesel (Million Liters)									
Calendar Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Beginning Stocks	0	0	45	90	135	60	132	54	80
Production	69	404	1,167	1,608	2,386	2,673	2,717	2,877	2,946
Imports	4	4	5	4	9	18	0	0	0
Exports	4	3	1	3	8	6	0	0	0
Consumption	69	361	1,125	1,565	2,462	2,613	2,795	2,851	2,936
Ending Stocks	0	45	90	135	60	132	54	80	90
Production Capacity									
Number of Biorefineries	7	36	62	63	66	65	65	69	70
Nameplate Capacity	300	1,800	3,600	4,350	5,837	6,742	7,400	8,200	8,200
Capacity Use (%)	23.0 %	22.5 %	32.4%	37.0%	40.9%	39.6%	36.7%	35.1%	35.9%
Feedstock Use (1,000 MT)									
Soybean for Crush	252	1,475	4,255	5,866	8,704	8,893	9,299	9,577	10,081
Cottonseed for Crush	15	86	248	341	506	848	720	457	624
Animal Fat	9,730	57,012	164,570	226,742	336,492	401,994	434,266	540,891	553,864
Market Penetration (Million Liters)									
Biodiesel, on-road use	69	361	1,125	1,565	2,462	2,613	2,795	2,851	2,936
Diesel, on-road use	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Blend Rate (%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Diesel, total use	39,008	41,558	44,764	44,298	49,239	52,264	55,900	57,000	58,700

4.2. Production

A. Feedstock

Biodiesel can be produced from several raw materials such as soybeans, cottonseed, animal fat, castor seed (*Ricinus communis*), African palm oil ("dendê"), "pinhao manso" (*Jatropha curcas*), sunflower, peanut, fried oil or others.

According to updated information reported by the Petroleum, Natural Gas and Biofuels National Agency (ANP), despite the variety of feedstock which can potentially be used to produce biodiesel, soybeans still represents 73 percent of total biodiesel feedstock, followed by animal tallow (20 percent) and cottonseed (3 percent).

The tables below show official USDA data for soy and cotton oil production for MY 2009/10 through 2012/13, as well as a projection for MY 2013/14.

Brazilian Soybeans and Products Production (000 hectares, 000 metric tons)					
	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Area harvested	23,500	24,200	25,000	27,700	28,250
Soybeans	69,000	75,500	66,500	82,000	85,000
Soybeans for crushing	35,700	36,733	38,083	35,250	37,000
Meal, Soybean	27,670	28,470	29,510	27,320	28,680
Oil, Soybean	**6850**	**7050**	**7310**	**6760**	**7100**
Source: USDA/FAS					

Brazilian Cotton and Products Production (000 hectares, 000 metric tons)					
	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Area Harvested	836	1,400	1,400	885	1,075
Seed Cotton 1/	3,123	4,942	4,856	3,238	3,908
Lint Cotton	1,187	1,959	1,894	1,263	1,524
CottonSeed	1,977	2,750	2,750	2,100	2,300
Meal, Cottonseed	972	1,350	1,350	1,030	1,130
Oil, Cottonseed	**326**	**454**	**455**	**347**	**380**
Source: USDA/FAS 1/ Seed cotton calculated based on average lint yields.					

B. Production Estimates

Biodiesel production remains regulated by the government. In 2014, total Brazil biodiesel production is forecast at 2.946 billion liters, a 2 percent increase compared to the revised forecast for 2013 (2.877 billion liters), assuming that the mandatory biodiesel mixture remains unchanged at 5 percent.

Biodiesel production in 2012 was 2.72 billion liters, as reported by ANP. Cumulative January-May 2013 production is approximately 1.16 liters. Biodiesel production is reported below.

Brazilian Biodiesel Monthly Production/Deliveries (000 liters)						
Month	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
January	76,784	90,352	147,435	186,327	193,006	226,505
February	77,085	80,224	178,049	176,783	214,607	205,738
March	63,680	131,991	214,150	233,465	220,872	230,752
April	64,350	105,458	184,897	200,381	182,372	257,101
May	75,999	103,663	202,729	220,484	213,021	236,047
June	102,767	141,139	204,940	231,573	214,898	--
July	107,786	154,557	207,434	249,897	230,340	--
August	109,534	167,086	231,160	247,934	254,426	--
Septembe r	132,258	160,538	219,988	233,971	252,243	--
October	126,817	156,811	199,895	237,885	251,416	--
November	118,014	166,192	207,868	237,189	245,321	--
December	112,053	150,437	187,856	216,870	244,962	--
Total	1,167,128	1,608,448	2,386,399	2,672,760	2,717,483	1,156,144
Source: ANP						

ANP reports that as of June 2013, Brazil has 69 plants authorized to produce biodiesel. Current authorized industrial capacity is estimated at 22.24 million liters/day or approximately 8 billion liters/year, based on a 360 day operation cycle. This represents approximately 2.8 times the mandatory biodiesel production to be blended in mineral diesel (B5) in 2013; and a 14 percent increase compared to the authorized industrial capacity for the same period in 2012 (19.53 million liters/day).

ATO/Sao Paulo projects industrial capacity for 2013 and 2014 at 69 and 70 plants, respectively, or 8.2 billion liters per year. Projections are based on information for authorized plants and requests for authorization provided by ANP and industry sources.

C. Cost of Production and Market Prices

The biodiesel market remains regulated by the government through a public auction system (see BR110013 – Brazilian Biofuels Annual Report for more information) which gives preference to producers with the Social Fuel Stamp. The Social Fuel Stamp provides incentives for poorer farmers (family farmers) in disadvantaged areas.

The tables below summarize the results of the 26st through the 32nd auctions during 2012 and 2013. Additional auctions should take place in the upcoming months to guarantee supply for the last months of the year.

Biodiesel Auctions				
Auction	26th Auction	27th Auction	28th Auction	29th Auction
Date	06/04-13-14/12	09/18-21-24/12	12/6-11-12/12	02/1-6-7/13
Number of Suppliers	39	34	35	33
Offered Quantity (m3)	1,017,500	848,619	651,473	715,500
Purchased Quantity (m3)	768,939	773,324	496,308	517,357
Average Price (R$/m3) 1/	2,491.37	2,734.33	2,603.46	2,263.56
Delivery Date	Jul-Sep/12	Oct-Dec/12	Jan-Feb/13	Mar-Apr/13
Source: ANP 1/ Price FOB, including PIS/PASEP and COFINS, excluding ICMS				

Biodiesel Auctions			
Auction	30th Auction	31st Auction	32nd Auction
Date	04/1-4-5/13	06/3-6-7/13	08/5-8-9/13
Number of Suppliers	38	39	35
Offered Quantity (m3)	750,253	765,770	770,240
Purchased Quantity (m3)	488,532	515,443	524,836
Average Price (R$/m3) 1/	2,031.22	1,987.95	1,896.68
Delivery Date	May-Jun/13	Jul-Aug/13	Sep-Oct/13
Source: ANP 1/ Price FOB, including PIS/PASEP and COFINS, excluding ICMS			

Biodiesel prices received by producers are determined by the public auction system (see Average Price in the tables above). Producers are not allowed to change the sales price set at the auctions and consequently must search for low cost raw material or hedge their activities to offset risk.

The tables below show the price for soybean oil in 2012 and 2013 (January-June). The average crude price in the state of Sao Paulo is R$2,418. 83/ton for January-June 2013, a 4 percent drop compared to the same period in 2012 (R$2,513.75/ton).

Soybean Oil, Crude - Prices (2012)						
Location	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Chicago (US$/ton)	1,139	1,165	1,195	1,231	1,140	1,109
Premium (US$/ton)	-0.21	0.04	-0.10	0	14	28
Port of Paranaguá - Fob (US$/ton)	1,139	1,165	1,195	1,231	1,154	1,137
São Paulo - (R$/ton com ICMS 12%)	2,360	2,343	2,460	2,605	2,638	2,678
Elaborated by ABIOVE based on several sources.						

Soybean Oil, Crude - Prices (2012)						
Location	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**
Chicago (US$/ton)	1,175	1,174	1,218	1,134	1,085	1,099
Premium (US$/ton)	21	43	12	-25	4	-33
Port of Paranaguá - Fob (US$/ton)	1,197	1,217	1,231	1,109	1,090	1,066
São Paulo - (R$/ton com ICMS 12%)	2,888	2,970	3,100	2,873	2,904	2,940
Elaborated by ABIOVE based on several sources.						

Soybean Oil, Crude - Prices (2013)						
Location	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**
Chicago (US$/ton)	1,132	1,132	1,105	1,090	1,082	1,064
Premium (US$/ton)	-34	-33	-90	-74	-98	-117
Port of Paranaguá - Fob (US$/ton)	1,098	1,100	1,015	1,015	983	947
São Paulo - (R$/ton com ICMS 12%)	2,748	2,595	2,415	2,265	2,220	2,270
Elaborated by ABIOVE based on several sources.						

4.3. Consumption

Biodiesel domestic consumption remains regulated by GoB, thus the sector must comply with the biodiesel mandate which requires all mineral diesel to have a five percent biodiesel blend (B5) as of 2010. Based on industry projections for mineral diesel domestic demand, ATO/Sao Paulo forecasts total biodiesel domestic consumption for 2013 and 2014 at 2.851 and 2.936 billion liters, respectively.

Biodiesel consumption for 2012 is estimated at 2.795 billion liters based on mineral diesel consumption of 55.9 billion liters and the mandatory mixture of five percent (B5) during 2012.

The table below shows the vehicle fuels consumption matrix from 2008-2013, according to ANP.

Brazilian Fuel Consumption Matrix (000 m3)						
	2008	**2009**	**2010**	**2011**	**2012**	**2013 1/**
Diesel *	44,764	44,298	49,239	52,264	55,900	27,973
Gasoline C**	25,175	25,409	29,844	35,491	39,698	19,808
Hydrated Ethanol	13,290	16,471	15,074	10,899	9,850	4,836
Source: ANP. * Diesel includes Bx Biodiesel as of 2008. ** Gasoline C includes 20-25 % of anhydrous ethanol. 1/ 2013 refers to Jan-Jun.						

4.4. Trade

Export figures by country of destination for biodiesel (NCM 3826.00.00) for the years 2012 and 2013 (July-June), according to SECEX, are shown below. No import has been registered under tariff code NCM 3826.00.00.

Brazilian Biodiesel Exports by Country of Destination (Kg, US$ FOB)				
	CY 2012		**CY 2013 1/**	
Country	**Quantity**	**Value**	**Quantity**	**Value**
Singapore	45	1,101	0	0
Netherlands	0	0	19,420	15,503
Total	45	1,101	19,420	15,503
Source : Brazilian Secretariat of Foreign Trade SECEX - Note: NCM 3826.00.00 - 1/ Jan - Jul				

4.5. Stocks

ATO/Sao Paulo forecasts biodiesel ending stocks for 2014 at 90 million liters, similar to 2013 (80 million liters), based on the difference between total supply and disappearance (consumption and exports).

5. Advanced Biofuels

Brazil has no commercial use of advanced biofuels. In June 2013, the National Bank for Social and Economic Development (BNDES) announced a R$ 1 billion (approximately US$ 400 million) credit line named "Paiss Agricola" to fund agricultural research and development for the sugar-ethanol sector, mostly for investments in advanced biofuels.

Updated information from the industry reports the following second generation projects in Brazil from 2013 through 2015:

A. Three commercial plants in operation:
- In 2014 – one plant in the states of Alagoas with projected annual production of 82 million liters);
- In 2015 – one plant in the state of Sao Paulo with projected annual production of 40 million liters);
- In 2015 – one plant in the state of Goias with projected annual production of 40 million liters);

B. Two demonstration plants:
- In 2014: one plant in the state of Sao Paulo with projected production of 3 million liters
- In 2015: one plant in the state of Mato Grosso do Sul with projected production of 3 million liters

C. Three pilot plants:
- In 2013: three plants in the state of Sao Paulo with experimental batch volumes.

6. Notes on Statistical Data

6.1. Bioethanol

Beginning stocks for the bioethanol for "All Uses" table is based on information from the Ministry of Agriculture, Livestock and Supply (MAPA) and reflect all stocks at the ethanol plants as of January 1, 2006. Beginning Stocks for the bioethanol "For Fuel Only" table is estimated based on historical average use of bioethanol for fuel/other uses. On average, ethanol for fuel has represented 87 percent of the total ethanol disappearance (use), therefore Post assumed this percentage to calculate the theoretical beginning stocks for fuel in January 1, 2006. All other stock figures were calculated based on the difference between total supply and disappearance (consumption and exports).

Bioethanol production estimates for "All Uses" were provided by MAPA and are consistent with previous ATO/Sao Paulo GAIN reports submitted by marketing year. Production estimates "For Fuel Only" are taken as the difference between "production for All Uses" minus estimates for "disappearance for other uses" (domestic consumption and exports) given that all Brazilian official publications and industry sources report production in hydrous/anhydrous ethanol only.

Trade figures were based on the Brazilian Secretariat of Foreign Trade (SECEX). SECEX breaks down trade numbers in four categories as described below:

- NCM 2207.10.10 – undenatured ethylic alcohol with ethanol content equal or over 80 percent. With water content equal or below 1 percent vol. Undenatured alcohol is defined as pure ethanol with no additives and suitable for consumption.

- NCM 2207.10.90 - undenatured ethylic alcohol with ethanol content equal or over 80 percent. Others. Undenatured alcohol is defined as pure ethanol with no additives and suitable for consumption.
- NCM 2207.20.11 - denatured ethylic alcohol with any ethanol content. With water content equal or below 1 percent vol. Denatured alcohol is defined as ethanol with additives which make it poisonous and/or unpalatable, thus, no suitable for human consumption. Denatured alcohol is used as a solvent and as fuel for spirit burners and camping stoves. Different additives like methanol are used to make it difficult to use distillation or other simple processes to reverse the denaturation.
- NCM 2207.20.19 - denatured ethylic alcohol with any ethanol content. Others. Denatured alcohol is defined as ethanol with additives which make it poisonous and/or unpalatable, thus, no suitable for human consumption. Denatured alcohol is used as a solvent and as fuel for spirit burners and camping stoves. Different additives like methanol are used to make it difficult to use distillation or other simple processes to reverse the denaturation.

There are no figures for ethanol exports for fuel and/or other uses. Post estimated ethanol "for fuel" based on the type of ethanol that is usually imported by the final destination, as reported by UNICA. Thus, the United States, the Caribbean countries and Sweden usually import ethanol for fuel; whereas Japan, Korea and several other importing countries, including the European Union import ethanol for industrial and other uses.

Domestic consumption figures were taken from information provided by Datagro, the Petroleum, Natural Gas and Biofuels National Agency (ANP) and UNICA.

The number of biorefineries were taken from MAPA and UNICA. Ethanol production capacity was based on production figures as reported by UNICA. Post took the highest ethanol production figure in a given 15-day period, as reported by the institution, and extrapolated to the entire Center-South crushing season. A similar procedure was performed for Northeast production based on MAPA reports.

Sugarcane crushed for ethanol production was calculated based on the actual production breakdown for sugar/ethanol as described in previous GAIN reports. Note that on average, one metric ton of sugarcane produces 80.5 liters of ethanol.

6.2. Biodiesel

Production numbers are based on figures reported by ANP and forecasts are based on projections for diesel consumption and the results from the public auctions. Biodiesel market continues to be regulated by the government through a public auction system which sets the volume of biodiesel that should be produced and delivered to fuel distributors in a particular period.

Consumption figures are based on mineral diesel consumption and the mandatory mixture of biodiesel (B2, B3, B4, B5) in mineral diesel set by Brazilian legislation.

Trade figures were based on the Brazilian Secretariat of Foreign Trade (SECEX), as reported below:

- From 2006 through 2011 - NCM 3824.90.29 – Other industrial fatty acid derivatives, mixtures and preparations containing fatty alcohols or carboxylic acids or their derivatives.
- As of 2012 – NCM 3826.00.00 – biodiesel and their blends.

The number of biorefineries and production capacity are based on ANP reports. Feedstock use for biodiesel consumption is based on the following conversion rates:

- 0.875 metric ton of biodiesel = 1,000 liters of biodiesel
- 1 metric ton of biodiesel = 1.03 metric ton of soybean oil
- 1 metric ton of biodiesel = 1.00 metric ton of cottonseed oil
- Extraction rate for soybean oil = 0.1919
- Extraction rate for cottonseed oil = 0.1649
- 1 kg of animal fat = 1.064 liters of biodiesel

6.3. Exchange Rate

Exchange Rate (R$/US$1.00 - official rate, last day of period)							
Month	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
January	2.12	1.76	2.32	1.87	1.67	1.74	1.99
February	2.12	1.68	2.38	1.81	1.66	1.71	1.98
March	2.05	1.75	2.25	1.78	1.62	1.82	2.01
April	2.03	1.69	2.18	1.77	1.57	1.89	2.00
May	1.93	1.63	1.97	1.81	1.57	2.02	2.13
June	1.93	1.64	1.95	1.80	1.57	2.02	2.22
July	1.88	1.57	1.87	1.75	1.56	2.05	2.29
August 1/	1.96	1.63	1.88	1.75	1.59	2.04	2.40
September	1.84	1.92	1.78	1.69	1.85	2.03	
October	1.74	2.12	1.74	1.70	1.69	2.03	
November	1.78	2.33	1.75	1.71	1.81	2.10	
December	1.77	2.34	1.74	1.66	1.88	2.04	
Source : Gazeta Mercantil and BACEN (as of October 2006) 1/ August 2013 refers to August 27.							