

USDA Foreign Agricultural Service

GAIN Report

Global Agricultural Information Network

THIS REPORT CONTAINS ASSESSMENTS OF COMMODITY AND TRADE ISSUES MADE BY
USDA STAFF AND NOT NECESSARILY STATEMENTS OF OFFICIAL U.S. GOVERNMENT
POLICY

Required Report - public distribution

Date: 8/21/2012

GAIN Report Number: BR12013

Brazil

Biofuels Annual

Annual Report 2012

Approved By:

Fred Giles, Director
Agricultural Trade Office, Sao Paulo

Prepared By:

Sergio Barros, Agricultural Specialist,
Agricultural Trade Office, Sao Paulo

Report Highlights:

This report updates the Brazilian ethanol and biodiesel policies and programs described in the Biofuels Annual report from 2011 (BR110013) and provides production, supply and demand estimates and forecasts for 2012 and 2013, respectively.

Post:

Sao Paulo ATO

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

For the past two crops, small North-Northeast sugarcane growers (approximately 20,000 farmers) were eligible for the Regional Producer Subsidy in the amount of R\$ 5.00 per metric ton of sugarcane up to 10,000 metric tons. The subsidy was given to balance the cost of the production differential between Center South and the Northeast mills. The Brazilian Congress has not yet decided yet if the producers will be eligible for the subsidy during the upcoming season.

2.1.2. Ethanol use mandate

In October 2011, the percentage of ethanol blended to gasoline dropped from 25 to 20 percent, due to lower availability of the product, a consequence of the drop in the size of the sugarcane crop. The aforementioned percentage should remain unchanged at least until the beginning of the 2013/14 sugarcane crop. 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 2011.

Taxes Applied to Ethanol, Flex-Fuel and Gasoline Vehicles						
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

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

CIDE (Contribution for Intervention in Economic Domain) funds raised via this federal fuel tax 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 derivatives prices or distribution. CIDE for gasoline was set at zero as of mid-June 2012 to support Petrobras, the Brazilian oil company, whereas it has been fixed at zero for ethanol since May 2004. Therefore, the GoB does not provide preferential treatment for ethanol under CIDE as it had prior to June 2012.

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. PIS/COFINS for ethanol have also remained unchanged at R\$0.12/liter (R\$0.048/liter on producers and R\$0.072/liter on distributors).

At the state level, there are different tax regimes for the ICMS - State tax for circulation of goods and services. 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 December 2011, the GoB published Provisional Measure # 554 creating a R\$2.5 billion credit line with subsidized interest rates to support ethanol storage. Maximum financing per year is limited to R\$500 million. Industry contacts report that due to the strict credit requirements to access the money, funds have been virtually untouched.

In January 2012, BNDES announced a credit line of R\$4 billion (approximately US\$ 2billion) available until December 31, 2012, called Prorenova, to finance the renewal and/or expansion of approximately 2.5 million acres (1 million hectares) of sugarcane fields (see BR12003 for further information). The program was included as part of the 2012/13 Crop Plan released in mid-June by the Ministry of Agriculture, Livestock and Supply. Industry continue to limit participation due to the strict credit requirements to access the money.

2.1.5. 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.

As a consequence of ANP's regulatory role in the sector, the agency began to monitor the marketing trade

of hydrous 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, 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.

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. According to industry contacts, a proposal to increase the biodiesel bend to up to 10 percent in 2020 is under review by President Dilma Rousseff.

2.2.2. Tax Incentives

The current tax system allows biodiesel producers using soybeans as raw material to take advantage of the presumed credit. The system allows the payment of taxes due when selling the product instead of paying them when purchasing the raw material. Industry contacts report that in practice, the presumed credit puts soybean incentives on equal footing with other raw materials (see table below).

Federal Taxes for Biodiesel and Mineral Diesel (R\$/m3)					
Fuel	Biodiesel B100				Diesel
Producer Type	Family Agriculture (PRONAF)		All Others		
Region	North, Northeast & Semi-Arid Zones	All Others	North, Northeast & Semi-Arid Zones	All Others	
Feedstock	Any	Palm Oil or Castor Oil	Palm Oil or Castor Oil		
PIS/PASEP	0.00	12.29	27.03	31.75	82.20
COFINS	0.00	54.46	124.47	146.20	379.30

Source: Brazilian Government

2.2.3. Biodiesel Stocks

Legislation mandates storage capacity for Petrobras and Refap at approximately 100,000 liters (one month of domestic consumption), well below the average monthly consumption in Brazil (225,000 liters). No changes have been made to the legislation. There is no enforcement of the legislation as current stock levels are sufficient to guarantee a steady flow of biodiesel in the entire chain.

2.2.4. 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 2011 was 272.3 million metric tons petroleum equivalent (tpe), a 1.3 percent increase compared to 2010 (268.8 million tpe). The table below shows Brazil's Brazilian energy supply, according to MME.

Brazil Energy Supply (million TPE)				Variation	Share
Type/Year	2009	2010	2011	2011/2010	2011
Non-Renewable Energy	128.726	147.569	152.187	3.1%	55.9%
Petroleum and derivatives	92.263	101.714	105.200	3.4%	38.6%
Natural Gas	21.329	27.536	27.601	0.2%	10.1%
Mineral Coal and derivatives	11.706	14.462	15.243	5.4%	5.6%
Uranium (U3O8) and derivatives	3.428	3.857	4.143	7.4%	1.5%
Renewable Energy	114.953	121.203	120.160	-0.9%	44.1%
Hydraulic and Electric Energy	37.036	37.663	39.943	6.1%	14.7%
Log Wood and Vegetal Coal	24.610	25.998	26.333	1.3%	9.7%
<i>Sugarcane derivatives</i>	43.971	47.102	42.779	-9.2%	15.7%
<i>Other Renewable sources 1/</i>	9.336	10.440	11.105	6.4%	4.1%
Total Energy Supply	243.679	268.771	272.348	1.3%	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 44.1 percent of the energy matrix from renewable sources in 2011 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 2011 was 228.7 million tpe, a 2.4 increase compared to 2010 (223.4 million tpe), due to higher industrial activity. Industrial use (88.4 million tpe) and transportation (74.2 million tpe) represent the largest shares of energy use with 38.6 and 32.4 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 75 percent of total supply.

Electric Energy Supply Matrix (TWh)			
Source	2010	2011	11/10
Energia Não Renovável	75.320	64.186	-14.8%
Natural Gas	36.476	26.242	-28.1%
Petroleum Derivatives	16.065	14.401	-10.4%
Nuclear	14.523	15.659	7.8%
Mineral Coal	8.256	7.883	-4.5%
Energia Renovável	476.384	507.116	6.5%
Hydroelectric	403.290	428.571	6.3%

3. Ethanol

Conventional bioethanol is defined as first generation ethanol derived from sugars and starches used to transport fuels as a substitute for fossil fuels. Bioethanol is an alcohol made by fermenting the sugar components of plant materials such as corn and wheat starch, sugarcane, sugarbeet, sorghum, and cassava.

3.1. Brazil Bioethanol Production, Supply and Demand (PS&D) Table

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 2008 through 2013. 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	2008	2009	2010	2011	2012	2013
Begin Stocks	4,829	5,783	4,048	5,916	6,891	6,362
Production	27,140	26,105	27,965	22,893	22,721	25,500
Advanced Only	0	0	0	0	0	0
Imports	0	4	76	1,136	500	700
Fuel	0	0	74	1,100	480	690
Other Uses	0	4	1	36	20	10
Total Supply	31,969	31,893	32,089	29,945	30,112	32,562
Exports	5,124	3,296	1,906	1,964	1,850	1,900
Fuel	3,044	1,118	562	1,083	1000	1000
Other Uses	2,080	2,179	1,344	881	850	900
Consumption	21,062	24,548	24,267	21,090	21,900	23,800
Fuel	19,584	22,823	22,162	19,290	20,000	21,700
Other Uses	1,478	1,725	2,105	1,800	1,900	2,100
Ending Stocks	5,783	4,048	5,916	6,891	6,362	6,862

Production Capacity (Conventional)						
No. of Biorefineries	407	426	436	440	440	442
Capacity	38,300	35,600	41,360	42,800	42,800	42,800
Capacity Use (%)	70.9%	73.3%	67.6%	53.5%	53.1%	59.0%
Production Capacity (Advanced)						
No. of Biorefineries	0	0	0	0	0	0
Capacity	0	0	0	0	0	0
Capacity Use (%)	0	0	0	0	0	0
Co-Product Production - Conventional (1,000 MT)						
Product X	0	0	0	0	0	0
Feedstock Use - Conventional (1,000 MT)						
Sugarcane	335,188	346,070	342,254	293,807	285,750	322,607
Fuel	291,242	294,316	300,048	259,399	251,165	284,653
Other Uses	43,946	51,754	42,207	34,408	34,585	37,954
Feedstock Use - Advanced (1,000 MT)						
Feedstock A	0	0	0	0	0	0

Source: Prepared by ATO/Sao Paulo based on MAPA, SECEX, Datagro, ANP, UNICA and industry sources. Numbers for 2012 and 2013 are projections.

Ethanol - Conventional and Advanced Fuels (million liters)						
CY	2008	2009	2010	2011	2012	2013
Beginning Stocks	4,468	5,422	3,683	5,549	6,488	5,939
Production	23,582	22,201	24,516	20,212	19,971	22,500
Advanced Only	0	0	0	0	0	0
Imports	0	0	74	1,100	480	690
Exports	3,044	1,118	562	1,083	1,000	1,000
Consumption	19,584	22,823	22,162	19,290	20,000	21,700
Ending Stocks	5,422	3,683	5,549	6,488	5,939	6,429
Production Capacity (Conventional Fuel)						
No. of Biorefineries	407	426	436	440	440	442
Capacity	33,279	30,276	36,260	37,788	37,620	37,765
Capacity Use (%)	70.9%	73.3%	67.6%	53.5%	53.1%	59.0%
Production Capacity (Advanced)						
No. of Biorefineries	0	0	0	0	0	0
Capacity	0	0	0	0	0	0
Capacity Use (%)	0	0	0	0	0	0
Co-Product Production - Conventional (1,000 MT)						
Product X	0	0	0	0	0	0
Feedstock Use - Conventional (1,000 MT)						
Sugarcane	291,242	294,316	300,048	259,399	251,165	284,653
Feedstock Use - Advanced (1,000 MT)						
Feedstock A	0	0	0	0	0	0

Source: Prepared by ATO/Sao Paulo based on the "Bioethanol Production, Supply and Demand - All Uses" table. Numbers for 2012 and 2013 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 2012/13 Brazilian sugarcane production at 565 million metric tons (mmt), up 4 mmt from MY 2011/12. The production estimate for the Center-South (CS) region remains unchanged at 500 mmt of sugarcane, a 1 percent increase relative the previous crop (493 mmt), due to expected low agricultural yields as a result of the aging of the sugarcane fields and below average rainfall during the January-March 2012 period. ATO/Sao Paulo forecasts the North-Northeast (NNE) production for MY 2012/13 at 65 mmt, similar to 2011/12 (68 mmt).

Total sucrose (total reducing sugar, TRS) content destined for sugar and ethanol production during MY 2012/13 is estimated at 48.63 and 51.37 percent, respectively, as opposed to 48.07 and 51.93 percent, respectively for MY 2011/12. Sugar-ethanol mills are expected to continuously divert sugarcane crushing to sugar production due to steady strong demand for the product in foreign markets. In addition, the sector should supply enough anhydrous ethanol to the Brazilian market to guarantee the 20 percent blend to gasoline.

It is still too early to project MY 2013/14 production figures. More precise numbers should be available in the first quarter of 2013 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 2013/14 at 600 mmt, a 6 percent increase compared to the current crop, assuming that the CS will recover from lower agricultural yields projected for the current crop.

ATO projects the 2013 total bioethanol production at 25.5 billion liters, up 12 percent from the 2012 estimate (22.7 billion liters). Ethanol for fuel production is forecast at 22.5 billion liters for 2013, a 2.5 billion liters increase over 2012 (19.97 billion liters).

UNICA has made a long-term projection for sugarcane and ethanol production in Brazil. According to the association, sugarcane production projections are 886 million and 1.2 billion metric tons for MY 2015/16 and 2020/21, respectively, to supply the sugar domestic market, keep the current share in the sugar world market, supply ethanol for 50 percent of the projected vehicle fleet and supply the required volumes set by the U.S. Renewable Fuels Standard by 2020.

B. Industrial Capacity

No changes have been made to the total industrial capacity for sugarcane crushing which is estimated at approximately 3.2 mmt of sugarcane/day for center-south sugar-ethanol plants and 400,000 mmt/day for northeast plants. Therefore, Brazil's installed crushing capacity is approximately 3.6 mmt/day.

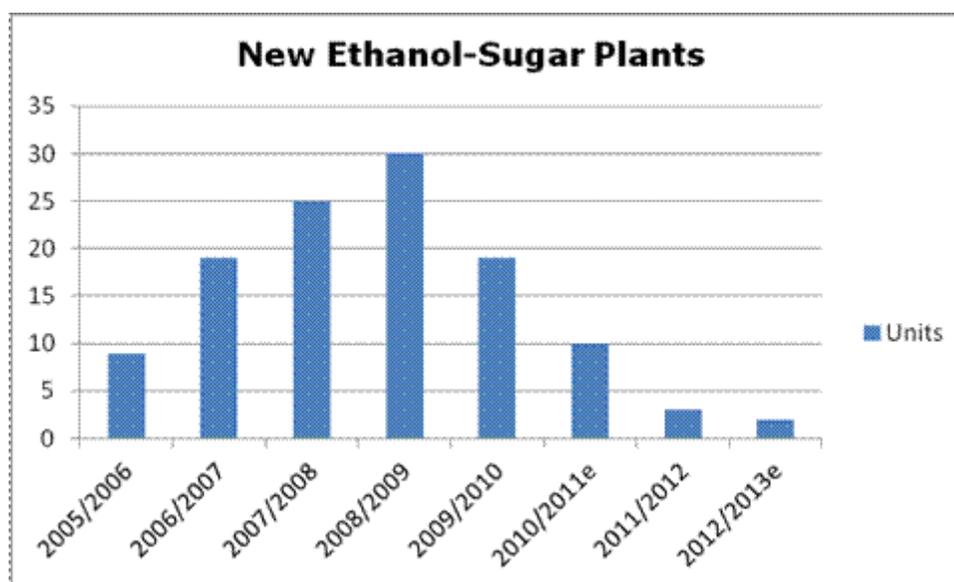
Ethanol production capacity for 2013 is forecast at 42.8 billion liters, similar to 2011 and 2012. Ethanol installed industrial capacity depends on yearly decisions made by individual plants to produce sugar and/or

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 and Credit

The graph below shows revised data for the evolution of new ethanol-sugar plants as of MY 2005/06 as reported by UNICA. UNICA estimates only two new plants for 2012/13, due to low investments in greenfield projects. The current overcapacity in sugarcane crushing, obstacles to obtain credit for investments and the need to renew old sugarcane fields have discouraged new plant investments. Total number of sugar-ethanol mills in 2012 is estimated at 440 units, whereas total operating units for 2013 are projected at 442.



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 2012/13) for the April-June 2012 period is

R\$0.5020 kg of TRS, or approximately R\$64.35 ton of sugarcane. CONSECANA reports that the average sugarcane price for the state of Sao Paulo for the 2011/12 crop is R\$0.5018 per kg of TRS, or R\$70.34 per ton of sugarcane.

According to industry sources, sugarcane represents between 60 to 70 percent of the cost of producing ethanol. Current production cost is estimated at R\$0.95 to R\$1.00/liter for hydrous ethanol and R\$1.05 to R\$1.10/liter for anhydrous ethanol (ROE = US\$1.00/R\$2.00). The aforementioned numbers vary according to the efficiency of the plant.

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. Prices remain competitive even during the harvest season, as a consequence of tight availability of the product.

Fuel Anhydrous Ethanol Prices: State of São Paulo (R\$/000 liters).					
Month	2008	2009	2010	2011	2012
January	786.22	873.30	1,285.40	1,233.20	1,270.30
February	808.08	860.30	1,297.60	1,293.10	1,184.60
March	831.50	744.50	974.60	1,596.60	1,278.80
April	789.40	697.00	908.40	2,375.00	1,259.70
May	821.50	676.40	839.20	1,380.70	1,294.30
June	787.00	692.80	827.30	1,244.60	1,234.00
July 1/	873.20	803.78	924.20	1,298.90	1,298.20
August	858.50	820.70	961.90	1,352.80	
September	891.20	912.90	1,040.20	1,384.20	
October	902.20	1,086.40	1,173.20	1,378.50	
November	897.00	1,093.80	1,185.20	1,377.30	
December	880.60	1,131.60	1,201.80	1,359.20	

Source: USP/ESALQ/CEPEA. July 1/ refers to July 09-13.

Fuel Hydrous Ethanol Prices: State of São Paulo (R\$/000 liters).					
Month	2008	2009	2010	2011	2012
January	697.18	781.40	1,171.20	1,109.40	1,159.00
February	714.70	777.60	1,095.80	1,176.10	1,119.80
March	754.56	656.80	825.20	1,421.90	1,204.40
April	715.60	621.30	799.70	1,387.50	1,191.40
May	697.10	585.22	724.30	1,005.90	1,140.10
June	665.30	606.60	720.30	1,113.70	1,082.80
July 1/	718.10	710.20	797.90	1,136.80	1,056.10
August	719.30	726.50	835.70	1,193.00	
September	749.60	791.40	896.20	1,204.60	
October	715.70	935.10	977.70	1,229.70	
November	726.40	941.90	1,001.00	1,277.00	
December	737.70	1,000.40	1,075.10	1,250.10	

Source: USP/ESALQ/CEPEA. July 1/ refers to July 09-13.

3.3. Consumption

Brazil remains an important user of ethanol for fuel consumption. Total domestic demand for ethanol for calendar year 2013 is forecast at 23.8 billion liters, an 8 percent increase over 2012 (21.9 billion liters), based on likely higher supply, more attractive ethanol prices at the pump compared to 2012 and the continued steady sales of flex-fuel vehicles in the market. Total ethanol consumption for use as fuel is estimated at 21.7 billion liters for 2013. Ethanol consumption for other uses is projected at 2.1 billion liters, up 200,000 liters compared to 2012 (1.9 billion liters) due to strong demand from the chemical industry.

The size of the Brazilian light vehicle fleet was roughly estimated at 27.7 million units in 2011 and pure hydrous ethanol and flex fuel powered vehicles represent together approximately over 50 percent of the total fleet. Industry projections report that the share of flex fuel vehicles is likely to reach over 80 percent by 2019.

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 80 percent of total monthly vehicle sales.

Licensing of Ethanol Powered Vehicles (pure ethanol & flex fuel units)						
2006	2007	2008	2009	2010	2011	2012 / 1
1,432,197	2,003,197	2,329,331	2,652,368	2,876,223	2,848,122	1,402,693
Source: National Association of Vehicle Manufacturers (ANFAVEA) 1/ January-June						
Note: flex fuel vehicles were introduced in March 2003.						

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).

Limited supply of ethanol during the January-April 2012 period has favored gasoline consumption in several Brazilian states, as reported in the tables below, thus reducing ethanol demand. Gasoline prices continued attractive in June 2012, a traditional crushing period during the sugarcane harvest in the center-south.

Gasoline and Ethanol Prices in Selected States (average price, R\$/liter)									
		Gasoline				Ethanol			
		2009	2010	2011	2012	2009	2010	2011	2012
Sao Paulo State	Jan	2.393	2.477	2.487	2.649	1.312	1.807	1.733	1.888
	Feb	2.398	2.509	2.490	2.641	1.331	1.831	1.765	1.818
	Jun	2.349	2.399	2.665	2.636	1.168	1.274	1.704	1.805
	Aug	2.351	2.412	2.663		1.231	1.387	1.814	
Sao Paulo City	Jan	2.391	2.475	2.482	2.647	1.312	1.810	1.733	1.874
	Feb	2.396	2.508	2.486	2.630	1.327	1.835	1.766	1.801
	Jun	2.346	2.395	2.680	2.630	1.180	1.274	1.716	1.786

	Aug	2.348	2.408	2.673		1.230	1.382	1.820	
Minas Gerais	Jan	2.381	2.489	2.537	2.824	1.611	1.965	1.902	2.208
	Feb	2.374	2.509	2.584	2.817	1.623	2.077	1.956	2.166
	Jun	2.326	2.412	2.823	2.806	1.501	1.678	2.075	2.142
	Aug	2.361	2.621	2.817		1.564	1.710	2.126	
Belo Horizonte (MG Capital)	Jan	2.331	2.431	2.499	2.761	1.597	1.926	1.886	2.172
	Feb	2.329	2.458	2.547	2.746	1.612	2.064	1.938	2.128
	Jun	2.282	2.379	2.778	2.741	1.487	1.661	2.087	2.127
	Aug	2.313	2.381	2.781		1.547	1.683	2.113	
Rio Janeiro State	Jan	2.537	2.641	2.654	2.850	1.685	2.044	2.022	2.266
	Feb	2.535	2.663	2.663	2.846	1.695	2.104	2.053	2.257
	Jun	2.524	2.613	2.892	2.854	1.588	1.703	2.200	2.256
	Aug	2.526	2.598	2.854		1.604	1.718	2.212	
Rio Janeiro Capital	Jan	2.534	2.640	2.651	2.818	1.680	2.050	2.025	2.257
	Feb	2.531	2.660	2.661	2.810	1.692	2.106	2.057	2.236
	Jun	2.521	2.611	2.865	2.821	1.579	1.695	2.165	2.253
	Aug	2.523	2.595	2.824		1.598	1.713	2.191	
Porto Alegre (RS Capital)	Jan	2.538	2.568	2.534	2.738	1.746	2.257	2.103	2.372
	Feb	2.538	2.592	2.552	2.689	1.765	2.335	2.157	2.348
	Jun	2.419	2.488	2.722	2.657	1.550	1.765	2.180	2.390
	Aug	2.577	2.560	2.632		1.765	1.836	2.237	
Goiania (GO Capital)	Jan	2.565	2.654	2.667	2.831	1.581	1.838	1.822	1.959
	Feb	2.564	2.655	2.697	2.782	1.581	1.897	1.891	1.899
	Jun	2.562	2.304	2.830	2.672	1.483	1.227	1.782	1.856
	Aug	2.556	2.384	2.838		1.411	1.347	1.837	
Fortaleza (CE Capital)	Jan	2.388	2.530	2.644	2.551	1.615	1.909	1.871	2.076
	Feb	2.533	2.530	2.647	2.660	1.747	2.013	1.944	2.077
	Jun	2.363	2.663	2.688	2.564	1.671	1.807	2.029	2.163
	Aug	2.575	2.645	2.661		1.768	1.772	2.161	

Source: Petroleum, Natural Gas and Biofuels National Agency (ANP).

Ratio Ethanol/Gasoline Prices					
		2009	2010	2011	2012
Sao Paulo	Jan	55%	73%	70%	71%
	Feb	56%	73%	71%	69%
	Jun	50%	53%	64%	68%
	Aug	52%	58%	68%	
Sao Paulo	Jan	55%	73%	70%	71%
	Feb	55%	73%	71%	68%
	Jun	50%	53%	64%	68%
	Aug	52%	57%	68%	
Minas Gerais	Jan	68%	79%	75%	78%
	Feb	68%	83%	76%	77%
	Jun	65%	70%	74%	76%
	Aug	66%	65%	75%	

Belo Horizonte	Jan	69%	79%	75%	79%
	Feb	69%	84%	76%	77%
	Jun	65%	70%	75%	78%
	Aug	67%	71%	76%	
Rio Janeiro	Jan	66%	77%	76%	80%
	Feb	67%	79%	77%	79%
	Jun	63%	65%	76%	79%
	Aug	63%	66%	78%	
Rio de Janeiro	Jan	66%	78%	76%	80%
	Feb	67%	79%	77%	80%
	Jun	63%	65%	76%	80%
	Aug	63%	66%	78%	
Porto Alegre	Jan	69%	88%	83%	87%
	Feb	70%	90%	85%	87%
	Jun	64%	71%	80%	90%
	Aug	68%	72%	85%	
Goiania	Jan	62%	69%	68%	69%
	Feb	62%	71%	70%	68%
	Jun	58%	53%	63%	69%
	Aug	55%	57%	65%	
Fortaleza	Jan	68%	75%	71%	81%
	Feb	69%	80%	73%	78%
	Jun	71%	68%	75%	84%
	Aug	69%	67%	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)						
	2007	2008	2009	2010	2011	2012 1/
Diesel *	41,558	44,764	44,298	49,239	52,264	17,067
Gasoline C**	24,325	25,175	25,409	29,844	35,491	12,530
Hydrated Ethanol	9,367	13,290	16,471	15,074	10,899	3,046
Source: ANP. * Diesel includes Bx Biodiesel as of 2008. ** Gasoline C includes 20-25 % of anhydrous ethanol. 1/ 2012 refers to January-April.						

3.4. Trade

A. Exports

Brazilian total ethanol exports for 2013 are forecast at 1.9 billion liters, similar to 2012 (1.85 billion liters). Total fuel ethanol exports are estimated at 1 billion liters for both 2012 and 2013. The tables below show ethanol exports (NCM 2207.10 through 2207.20.19) for 2011 and 2012 (January-June), 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 2011			CY 2012 1/		
Country	Volume	Weight	Value	Volume	Weight	Value
USA	663,925	524,711	566,954	331,787	266,471	271,212
Japan	280,873	226,171	196,212	76,947	61,753	55,415
South Korea	300,045	242,467	201,083	37,885	30,618	25,931
Jamaica	137,589	110,904	109,416	20,594	16,654	16,496
Netherlands	95,504	77,130	66,092	18,889	15,255	14,091
China	0	0	0	14,799	11,956	9,225
Puerto Rico	20,255	16,468	17,268	14,784	12,019	12,735
Trinidad and Tobago	135,881	109,880	105,196	14,700	11,888	13,386
Nigeria	73,603	59,495	49,077	14,457	11,680	10,598
Others	256,342	206,818	180,479	50,172	40,481	39,172
Total	1,964,017	1,574,045	1,491,778	595,014	478,775	468,262
Source : Brazilian Foreign Trade Secretariat (SECEX)						
Note : Numbers may not add due to rounding 1/Jan- Jun.						

B. Imports

Brazilian total ethanol imports for 2013 are projected 0.7 billion liters, almost exclusively for fuel use, up 200 million liters from 2012. The tables below show ethanol imports (NCM 2207.10 through 2207.20.19) for 2011 and 2012 (January-June), 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 2011			CY 2012 1/		
Country	Volume	Weight	Value	Volume	Weight	Value
USA	1,099,692	870,601	790,773	481,287	379,099	331,992
Jamaica	285	252	948	273	260	872
Barbados	88	73	115	113	96	138
Germany	61	71	661	16	14	244
Mexico	10	7	47	3	3	21
Spain	11	6,708	4,457	1	1	5
Italy	9	7	45	1	1	1
France	1,674	1,321	1,266	1	2	35
Netherlands	17	13,398	16,204	0	0	0
Trinidad and Tobago	417	345	441	0	0	0
United Kingdom	34,718	27,371	26,030	0	0	0
Others	0	0	1	26	21	45
Total	1,136,980	920,154	840,988	481,720	379,496	333,354

Source : Brazilian Foreign Trade Secretariat (SECEX)

Note : Numbers may not add due to rounding 1/Jan - Jun.

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 6.4 billion liters for 2013, up 8 percent relative to the 2012 stock level (5.9 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. 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 2006 through 2013. 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	2008	2009	2010	2011	2012	2013
Beginning Stocks	361	361	366	367	403	423
Production	3,558	3,904	3,449	2,681	2,750	3,000
Imports	0	4	1	36	20	10
Exports	2,080	2,179	1,344	881	850	900
Consumption	1,478	1,725	2,105	1,800	1,900	2,100
Ending Stocks	361	366	367	403	423	433

Production Capacity (Conventional Fuel)						
No. of Biorefineries	407	426	436	440	440	442
Capacity	5,021	5,324	5,100	5,012	5,180	5,035
Capacity Use (%)	70.9%	73.3%	67.6%	53.5%	53.1%	59.6%
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 Crystal Sugar and 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 "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	2008	2009	2010	2011	2012
January	940.00	906.40	1,297.20	1,122.50	1,350.30
February	913.10	893.70	1,348.20	1,182.10	1,248.80
March	972.60	784.00	1,044.30	1,443.10	1,297.80
April	921.70	721.60	926.20	1,424.80	1,321.20
May	920.10	733.80	880.10	1,054.70	1,331.40
June	896.60	701.60	830.60	1,078.80	1,340.70
July	955.20	810.80	925.20	1,165.90	
August	963.10	846.00	983.80	1,234.00	
September	986.90	916.80	1,047.60	1,207.10	
October	923.20	1,043.90	1,175.40	1,259.60	
November	913.60	1,100.50	1,222.40	1,296.20	
December	939.80	1,098.70	1,221.60	1,275.30	
Source: USP/ESALQ/CEPEA.					

Price for Hydrated Ethanol - Other Uses: State of São Paulo (R\$/000 liters).					
Period	2008	2009	2010	2011	2012
January	798.80	792.30	1,196.20	1,122.50	1,186.40
February	798.40	799.40	1,139.60	1,182.10	1,154.60
March	854.80	689.40	891.50	1,443.10	1,211.70
April	817.90	646.20	803.70	1,424.80	1,217.90
May	786.30	611.40	743.40	1,054.70	1,176.00
June	743.90	622.50	727.80	1,078.80	1,114.80
July	799.80	717.30	810.70	1,165.90	
August	803.00	745.70	856.10	1,234.00	
September	827.60	807.70	897.80	1,207.10	
October	778.00	942.30	1,000.60	1,259.60	
November	769.90	983.60	1,007.80	1,296.20	
December	769.70	997.10	1,074.50	1,275.30	
Source: USP/ESALQ/CEPEA.					

4. Biodiesel

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

4.1. Brazil 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 2013.

Biodiesel - Conventional & Advanced Fuels (Mil. Liters)								
Calendar Year	2006	2007	2008	2009	2010	2011	2012	2013
Production, Total	69	404	1,167	1,608	2,386	2,673	2,700	2,760
Advanced Only	0	0	0	0	0	0	0	0
Imports	4	4	5	4	9	18	0	0
Exports	4	3	1	3	8	6	0	0
Consumption	69	361	1,125	1,565	2,462	2,613	2,691	2,772
Ending Stocks	0	45	90	135	60	132	141	129
Production Capacity – Conventional								
No. of Biorefineries	7	36	62	63	66	65	68	70
Capacity (Mil. Liters)	300	1,800	3,600	4,350	5,837	6,742	7,100	7,100
Capacity Use (%)	23%	22%	32%	37%	41%	40%	38%	39%
Production Capacity – Advanced								
No. of Biorefineries	--	--	--	--	--	--	--	--
Capacity (Mil. Liters)	--	--	--	--	--	--	--	--
Capacity Use (%)	--	--	--	--	--	--	--	--
Feedstock Use - Conventional (1,000 MT)								
Soybean for Crush	252	1,475	4,255	5,866	8,704	8,893	9,398	9,427
Cottonseed for Crush	15	86	248	341	506	851	568	585
Animal Fat	9,730	57,012	164,570	226,742	336,492	401,994	402,331	414,364
Feedstock Use - Advanced (1,000 MT)								
Feedstock A	0	0	0	0	0	0	0	0

4.2. Production

A. Feedstock

Biodiesel can be produced from several raw materials such as soybeans, castor seed (*Ricinus communis*), African palm oil ("dendê"), "pinhao manso" (*Jatropha curcas*), sunflower, peanut, animal fat, 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 over 77 percent of total biodiesel feedstock, followed by animal tallow (16 percent) and

cottonseed (4 percent).

The tables below show official USDA data for soy and cotton oil production for MY 2008/09 through 2011/12, as well as a projection for MY 2012/13.

Brazil Soybeans and Products Production (000 hectares, 000 metric tons)					
	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013
Area harvested	21,700	23,500	24,200	25,000	26,500
Soybeans	57,800	69,000	75,500	65,500	78,000
Soybeans for crushing	30,778	35,700	36,733	34,900	37,700
Meal, Soybean	23,850	27,670	28,470	27,050	29,220
Oil, Soybean	5,910	6,850	7,050	6,700	7,230

Source: USDA/FAS

Brazil Cotton and Products Production (000 hectares, 000 metric tons)					
	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013
Area Harvested	843	836	1,400	1,400	1,075
Seed Cotton 1/	3,114	3,123	4,942	5,329	3,960
Lint Cotton	1,193	1,187	1,959	1,981	1,524
CottonSeed	1,930	1,977	2,750	2,900	2,650
Meal, Cottonseed	948	972	1,350	1,425	1,300
Oil, Cottonseed	318	326	454	478	437

Source: USDA/FAS 1/ Seed cotton calculated based on average lint yields.

B. Production Estimates

Biodiesel production remains regulated by the government. In 2013, total Brazil biodiesel production is forecast at 2.760 billion liters, a 2 percent increase compared to the revised forecast for 2012 (2.7 billion liters), assuming that the mandatory biodiesel mixture remains unchanged at 5 percent.

Biodiesel production in 2011 was 2.67 billion liters, as reported by ANP. Cumulative January-April 2012 production is approximately 757 million liters, or 56 percent of the auctioned volume for January-June 2012. Biodiesel production is reported below.

Brazil Biodiesel Monthly Production/Deliveries (000 liters)						
Month	2007	2008	2009	2010	2011	2012
January	17,109	76,784	90,352	147,435	186,327	193,006
February	16,933	77,085	80,224	178,049	176,783	214,607
March	22,637	63,680	131,991	214,150	233,465	196,833
April	18,773	64,350	105,458	184,897	200,381	153,052
May	26,005	75,999	103,663	202,729	220,484	--
June	27,158	102,767	141,139	204,940	231,573	--
July	26,718	107,786	154,557	207,434	249,897	--
August	43,959	109,534	167,086	231,160	247,934	--
September	46,013	132,258	160,538	219,988	233,971	--
October	53,609	126,817	156,811	199,895	237,885	--
November	56,401	118,014	166,192	207,868	237,189	--
December	49,016	112,053	150,437	187,856	216,870	--
Total	404,329	1,167,128	1,608,448	2,386,399	2,672,760	757,498

Source: ANP

ANP reports that as of May 2012, Brazil has 64 plants authorized to produce biodiesel, 10 projects with authorization to build plants and 6 new projects in the process of receiving authorization from the agency. Current authorized industrial capacity is estimated at 19.53 million liters/day or approximately 7 billion liters/year, based on a 360 day operation cycle. This represents approximately 2.6 times the mandatory biodiesel production to be blended in mineral diesel (B5) in 2012; and a 13 percent increase compared to the authorized industrial capacity for the same period in 2010 (17.32 million liters/day).

ATO/Sao Paulo projects industrial capacity for 2012 and 2013 at 68 and 70 plants, respectively, or 7.1 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. Biodiesel producers with this stamp are eligible for tax incentives as described in Section 2.2.2 – Tax incentives, better credit terms, and classification as a socially friendly company.

The tables below summarize the results of the 21st through the 25th auctions during 2011 and 2012. The 26th auction was held in early June 2012 and resulted in the total purchased quantity of 768,939 m³ at the average price of R\$2,551/m³. Additional auctions should take place in the upcoming months to guarantee supply for the last months of the year.

Biodiesel Auctions				
Auction	21st Auction 1	21st Auction 2	22nd Auction 1	22nd Auction 2
Date	02/16-18/11	02/16-18/11	05/24-26/11	05/24-26/11
Number of Suppliers	27	27	31	22
Offered Quantity (m3)	660,000		700,000	
Purchased Quantity (m3)	528,000	132,000	560,000	140,000
Opening/Reference Price (R\$/m3)	2,378.96	2,413.33	2,316.25	2,354.50
Average Price (R\$/m3) 1/	2,046.00	2,047.02	2,252.58	2,027.70
Price Discount (%)	(14.00)	(15.18)	(2.75)	(13.88)
Delivery Date	Apr-Jun/11	Apr-Jun/11	Jul-Sep/11	Jul-Sep/11
Source: ANP 1/ Price FOB, including PIS/PASEP and COFINS, excluding ICMS				

Biodiesel Auctions			
Auction	23rd Auction	24rd Auction	25rd Auction
Date	08/24-29/11	11/21-23/11	02/27-29/12
Number of Suppliers	101	91	83
Offered Quantity (m3)	700,000	650,000	700,000
Purchased Quantity (m3)	700,000	647,000	679,400
Opening/Reference Price (R\$/m3)	2,493.31	2,480.17	2,391.45
Average Price (R\$/m3) 1/	2,398.75	2,396.19	2,105.25
Price Discount (%)	(3.79)	(3.39)	(11.97)
Delivery Date	Oct-Dec/11	Jan-March/12	Apr-Jun/12
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.

According to the Brazilian Association of Vegetable Oil Industries (ABIOVE), raw materials make up approximately 80 percent of biodiesel production cost. Given that roughly 80 percent of biodiesel production still results from the use of soybean oil, the profitability of the sector is highly dependent on oilseed prices.

The tables below show the price for soybean oil in 2011 and 2012 (January-April). The average crude price in the state of Sao Paulo is R\$2,441.88/ton for January-April 2012, relatively similar compared to the same period in 2011 (R\$2,505.63/ton).

Soybean Oil, Crude - Prices (2011)						
Location	Jan	Feb	Mar	Apr	May	Jun

Chicago (US\$/ton)	1,268	1,271	1,230	1,276	1,261	1,254
Premium (US\$/ton)	9.92	8.82	-1.10	-4.08	-4.57	-1.76
Port of Paranaguá - Fob (US\$/ton)	1,278	1,280	1,229	1,272	1,256	1,252
São Paulo - (R\$/ton com ICMS 12%)	2,525	2,608	2,515	2,375	2,360	2,354

Elaborated by ABIOVE based on several sources.

Soybean Oil, Crude - Prices (2011)						
Location	Jul	Aug	Sep	Oct	Nov	Dec
Chicago (US\$/ton)	1,246	1,218	1,220	1,127	1,131	1,120
Premium (US\$/ton)	0.22	23.81	-22.05	-2.87	-0.01	-0.18
Port of Paranaguá - Fob (US\$/ton)	1,247	1,242	1,198	1,124	1,131	1,120
São Paulo - (R\$/ton com ICMS 12%)	2,270	2,315	2,510	2,445	2,335	2,285

Elaborated by ABIOVE based on several sources.

Soybean Oil, Crude - Prices (2012)						
Location	Jan	Feb	Mar	Apr	May	Jun
Chicago (US\$/ton)	1,139	1,165	1,195	1,231		
Premium (US\$/ton)	-0.21	0.04	-0.10	0.02		
Port of Paranaguá - Fob (US\$/ton)	1,139	1,165	1,195	1,231		
São Paulo - (R\$/ton com ICMS 12%)	2,360	2,343	2,460	2,605		

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 2012 and 2013 at 2.691 and 2.772 billion liters, respectively.

Biodiesel consumption for 2011 is estimated at 2.613 billion liters based on mineral diesel consumption of 52.26 billion liters and the mandatory mixture of five percent (B5) during 2011.

The table below shows the vehicle fuels consumption matrix from 2007-2012, according to ANP.

Brazil Fuel Consumption Matrix (000 m3)						
	2007	2008	2009	2010	2011	2012 1/
Diesel *	41,558	44,764	44,298	49,239	52,264	17,067

Gasoline C**	24,325	25,175	25,409	29,844	35,491	12,530
Hydrated Ethanol	9,367	13,290	16,471	15,074	10,899	3,046
Source: ANP. * Diesel includes Bx Biodiesel as of 2008. ** Gasoline C includes 20-25 % of anhydrous ethanol. 1/2012 refers to January-April.						

4.4. Trade

The following tables show biodiesel imports and exports for NCM 3824.90.29 from 2007 – 2011 in metric tons as reported by the Brazilian Secretariat of Foreign Trade (SECEX) and converted to liters. No trade has been registered under NCM 38.26.00.00 as of 2012.

Brazil Biodiesel Trade (NCM 3824.90.29, metric tons)					
	2007	2008	2009	2010	2011
Exports	2,222	1,289	2,432	7,302	5,356
Imports	3,194	4,409	3,803	7,904	15,412
Source: SECEX. 1/ Jan-May					

Brazil Biodiesel Trade (NCM 3824.90.29, 000 Liters)					
	2007	2008	2009	2010	2011
Exports	2,539	1,473	2,779	8,345	6,121
Imports	3,651	5,039	4,346	9,033	17,613
Source: ATO/Sao Paulo, based on SECEX figures and biodiesel density = 0.875 g/cm ³ 1/ Jan-May					

Export figures by country of destination and imports by origin for the years 2010 and 2011 are shown below, according to SECEX.

Brazil Biodiesel Exports by Country of Destination (Metric tons, US\$ 000 FOB)				
Country	CY 2010		CY 2011	
	Quantity	Value	Quantity	Value
Argentina	5,780	11,352	3,405	8,486
Singapore	337	781	481	1,411
USA	8	14	228	46
Chile	184	837	204	1,119
South Africa	96	234	185	532

China	231	532	178	556
Indonesia	112	145	176	228
Venezuela	40	141	162	979
Peru	87	447	116	597
Paraguay	69	299	77	398
Others	357	1,146	143	619
Total	7,302	15,929	5,356	14,971

Source : Brazilian Secretariat of Foreign Trade SECEX - NCM 3824.90.29
1/ Jan - May

Brazil Biodiesel Imports by Country of Origin (Metric Tons, US\$ 000 FOB)				
	CY 2010		CY 2011	
Country	Quantity	Value	Quantity	Value
Germany	1,974	6,178	4,631	13,754
USA	2,059	7,730	4,172	12,197
Spain	1,188	3,451	2,026	8,090
China	43	226	1,530	891
Mexico	1,708	5,300	1,350	4,689
Canada	28	143	530	1,047
Singapore	108	283	367	1,238
Denmark	189	385	155	309
Malaysia	7	39	149	651
Taiwan	2	23	139	1,086
Others	599	2,681	362	2,381
Total	7,904	26,440	15,412	46,333

Source : Brazilian Secretariat of Foreign Trade SECEX - NCM 3824.90.29 - 1/ Jan - May

4.5. Stocks

ATO/Sao Paulo forecasts biodiesel ending stocks for 2013 at 129 million liters, similar to 2012 (141 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. Post contacts project the use of advanced biofuelson on a commercial basis within five years.

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	2006	2007	2008	2009	2010	2011	2012
January	2.22	2.12	1.76	2.32	1.87	1.67	1.74
February	2.14	2.12	1.68	2.38	1.81	1.66	1.71

March	2.17	2.05	1.75	2.25	1.78	1.62	1.82
April	2.09	2.03	1.69	2.18	1.77	1.57	1.89
May	2.30	1.93	1.63	1.97	1.81	1.57	2.02
June	2.16	1.93	1.64	1.95	1.80	1.56	2.02
July	2.18	1.88	1.57	1.87	1.75	1.56	2.05
August 1/	2.14	1.96	1.63	1.88	1.75	1.59	2.02
September	2.17	1.84	1.92	1.78	1.69	1.85	--
October	2.14	1.74	2.12	1.74	1.70	1.69	--
November	2.17	1.78	2.33	1.75	1.71	1.85	--
December	2.14	1.77	2.34	1.74	1.66	1.88	--

Source : Gazeta Mercantil and BACEN (as of October 2006) 1/ August 2012 refers to August 10.