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Biofuels Annual

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Report Highlights:
Argentine bioethanol production for 2017 is projected to increase to a record 1.04 billion liters as a result of growing demand reflecting a stronger local economy and a full year with the new increased blending mix of 12 percent. From now on, the supply of bioethanol has to be divided in half between the sugar industry and the grain ethanol sector. As in past years, there is no trade in ethanol. Biodiesel production for 2017 is forecast to increase to 3.1 billion liters, a new record. This is a result of the combination of a record domestic demand and a rebound of exports. Argentina does not import biodiesel, but it is a major world exporter. The United States is expected to be the number one destination in 2016 and 2017, followed by Peru. Exports to the EU, impacted by anti-dumping duties in 2013, could slowly resume in 2017 with a favorable dispute settlement outcome for Argentina.

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I. Executive Summary

Since the beginning of 2007, Argentina has had in place a Biofuels Law which mandates gasoline to be mixed with bioethanol and diesel with biodiesel beginning in 2010. The original mandates were 5 percent each, but after several modifications, gasoline is currently at 12 percent and diesel at 10 percent. Bioethanol is supplied in halves by the sugar industry which primarily uses molasses and sugarcane as feedstocks, and the grain bioethanol industry which uses almost exclusively corn as feedstock. Biodiesel is produced by large processors that utilize mostly fully integrated vegetable oil crushing plants. While small and medium plants which are not integrated, buy vegetable oil from the larger plants. Practically all the biodiesel in Argentina is produced from soybean oil. Argentina is one of the world's top three soybean producers and the number one exporter of soybean meal and oil. Bioethanol is not exported and will likely not be through 2017 as there is still room to suffice growing domestic demand. More investment in production capacity will be necessary to increase mandates significantly as is being discussed, and especially so given the projected rise in gasoline use. Biodiesel exports supported most of the industry's growth until peaking in 2011. Currently, the main market is the United States, followed by Peru. The EU, once the number one market, has been mostly closed for a couple of years, yet there are good prospects for exports to resume in 2017 with a favorable dispute settlement outcome for Argentina in the WTO.

I. Argentine Policy and Programs

Since 2007, Argentina has in place a regulatory framework to promote the production and use of biofuels. The main objectives of this framework are to diversify the supply of energy, to foster environmental conservation, and to promote the development of rural areas (primarily nontraditional production areas), especially for the benefit of small and medium sized agricultural producers. The framework focuses on conventional biofuels, and Argentina has a large biodiesel industry based on soybean oil and a growing ethanol industry based on sugarcane and more recently grains. Current policy does not directly support second generation or advanced biofuels. However, there are a few government, private sector and university programs researching these types of feedstocks and technology.

In April 2006, the Argentine Congress passed Law 26,093, which regulates and promotes the production and sustainable use of biofuels. This law mandated the use of biofuels beginning in 2010, with an obligatory mix of five percent blend of ethanol in gasoline and five percent blend of biodiesel in diesel. This goal was largely met for biodiesel but fell far short for ethanol. Under this law, companies that produce biofuels have three options: 1) to produce for the domestic market, taking advantage of various tax incentives; 2) to produce for self-consumption, with similar advantages as option 1; and 3) to produce for the export market, in which case the companies are ineligible for the tax incentives. In February 2007, the Executive Branch, through

Decree 109, published the regulations for implementing the above law. Salient points of the Argentine biofuel law (and regulations) are:

Chapter I - Creates incentives for production and use of biofuels in the domestic market with a duration of 15 years (beginning on the date of the enactment of the law). It establishes that the Secretariat of Energy will be the controlling authority. The oversight of tax breaks will be under the control of the Ministry of Economy. Some of the responsibilities of the controlling authority, in general, are to establish quality levels, security conditions, registration of participating companies, approval of projects that benefit from incentives, and the percentage blend of biodiesel with diesel and ethanol with gasoline for the domestic market. Every year the Secretariat of Energy will establish the volumes of biofuels needed to comply with the law, determine and modify the percentage blends, set prices of biofuels for the domestic market, establish volumes, terms and conditions for those producing for their own consumption, and approve exports.

Chapter II - provides details concerning the incentives of the biofuels promotional regime for domestic use. To be eligible for incentives, companies have to operate in Argentina and be dedicated exclusively to biofuel production, with the majority of the company's equity in the hands of the government (i.e. government at either the national, provincial, or municipal levels) or agricultural producers (and producers' cooperatives). Companies have to operate under the above regulations and specifications, and will be assigned a percentage of the total tax break granted by the Government of Argentina (GOA) --the law gives priority to small and medium enterprises, farmers, and entities that operate in nontraditional production areas. Biofuels governed by this promotional regime will be exempt from three specific taxes applied to fossil fuels. In addition, biofuel producers for the domestic market will enjoy tax breaks and other advantages (e.g. anticipated reimbursement of the value added tax or accelerated depreciation on capital investment). Eventually, Chapter II leaves open the possibility for producers to receive direct subsidies.

Policy/Regulatory Developments Since 2007

In January 2008, Congress passed Law 26,334, which promoted the production of bioethanol from sugarcane. This law allowed sugar mills to participate under the biofuel promotional regime, maintaining the basic norms and regulations of the biofuel law. It also promoted exports of surplus ethanol.

In August 2012, the GOA made important changes to the biodiesel policy by reducing the official domestic price leaving aside the original formula (which took into account production costs) to calculate the price, which is announced every month.

In December 2012 the GOA announced a new price scheme for biodiesel for the local mandate, based on the size of the plants. It set a higher price for biodiesel processors of up to 20,000 tons/year, a lower price for processors of up to 100,000 tons a year and an even lower price for large companies (most big exporters) with production over 100,000 tons/year. In September 2013 the government created a new category of large plants called "nonintegrated" (which need to purchase the feedstock from third parties). These prices have fluctuated since the implementation of the program, while prices through June 2016 were US$790 per ton (AR$11,849 per ton) for small plants, US$780 per ton (AR$11,706 per ton) for medium plants, US$702 per ton (AR$10,532 per ton) for large "nonintegrated" plants, and US$611 per ton (AR$9,160 per ton) for large companies.

In December 2013 the GOA announced that the mandatory biodiesel blend would be increased to nine

percent in January 2014 and to ten percent in February 2014. In this announcement it also included, for the first time, a ten percent blend to use in heating power plants. The Secretariat of Energy, through Resolution 44/2014 increased the blend mandate for ethanol to a minimum of ten percent by December 2014. None of these goals were met. In 2015, the effective average bioethanol blending mix was 9.4 percent and 8.4 for biodiesel.

In mid-2014, Congress passed Law 23996 suspending until the end of 2015 a 19 percent tax on local biodiesel sold at the pump and a 22 percent tax on biodiesel to subsidize power generation. The idea was that this suspension will last until the countervailing duties applied by the EU to Argentine biodiesel are removed. Through Decree 630 these exemptions were extended until December 31, 2016.

In September 2014, through Resolution 44/14, the Secretariat of Energy created a differentiated price for ethanol depending on the feedstock used (until then, there was only one price). Therefore, through the publication of new price formulas, grain ethanol was priced lower than that of sugarcane ethanol. In December 2014 the first differentiated price was published. In June 2016 the official price for grain ethanol was US$791 per ton (AR$11,872) and US$852 per ton (AR$12,774) for sugarcane ethanol.

In December 2015 new President Macri took office after a tight election against the official candidate of the government which ruled the country in the past 12 years. As promised in the campaign, the government got rid of the capital controls with an immediate devaluation of the peso of about 40-45 percent against the US dollar. It also eliminated export taxes on all crop commodities (corn went from 20 percent to zero), except for the soybean complex which were reduced by 5 percentage points (beans dropped from 35 percent to 30 percent, and oil and meal from 32 percent to 27 percent).

In April 2016, Resolution 37 of the Ministry of Energy established that gasoline had to be mixed at a minimum with 12 percent bioethanol and diesel mixed with a minimum 10 percent biodiesel. In the case of bioethanol, the additional increase of 2 percentage points has to be supplied by the sugar industry. From now on the grain industry and the sugar industry will have to split in halves the total supply of bioethanol to local gasoline distributors. Some comments of government officials indicate that the mandates for biodiesel and bioethanol could be increased to 20 percent in a “few years’ time”. The Ministry of Energy is working together with car manufacturers and the National Institute of Industrial Technology to analyze the feasibility of reaching such levels of blending.

In June 2016 the GOA announced an increase of the export tax on biodiesel to 5.04 percent (from 3.96 percent in May). A factor which contributed to the expansion of the local biodiesel industry since its beginnings has been the differential export tax on biodiesel vis-à-vis soybean oil. Soybean oil exports are currently taxed 27 percent while biodiesel exports are taxed 5.04 percent. Since 2012, the GOA has in place a “flexible export tax system” for biodiesel. In the last 12 months the government has modified the export tax on a monthly basis. The local industry claims that due to the nature of their business they need the export tax to remain fixed at least for 6 month increments.

Environmental Considerations

There are no specific official environmental or social/economic sustainability criteria for biofuels in Argentina. However, being a major exporter of biodiesel, the GOA closely monitors other countries’ criteria and regulations in order to avoid restrictions on Argentine exports.

The EU established through its Climate and Energy Package that biodiesel from soybean oil does not meet the minimum GHG emissions savings level. Argentina challenged this decision. The GOA presented a study prepared by its Agricultural Research Institute (INTA), in which it takes into account the extensive adoption of no-till cropping, the short distance from the farms to crushing facilities, refining and port facilities, and its modern and efficient industries. CARBIO, the Argentine Chamber of Biodiesel, has presented to the EU a voluntary certification scheme addressing all their requirements. So far, none of the two have been officially recognized by the EU, but while markets were open, exports were accompanied by certificates demonstrating land use and GHG emissions.

In the case of the United States, in mid- 2009, the GOA presented comments to the Environmental Protection Agency's (EPA) Regulation of Fuels and Fuel Additives, and the changes to the U.S. Renewable Fuel Standards (RFS). It showed that Argentine soybean-based biodiesel reduced GHG emissions far more than the established 22 percent. EPA's rulemaking currently establishes that soybean-based biodiesel meets the 50 percent reduction in GHG emissions required to qualify for the biomass-based diesel category, but foreign supplies must still prove that land used to supply biofuel feedstock was cultivated prior to 2007 and that a robust monitoring and tracking system is in place to insure no direct land use change. In September 2012, the Argentine biodiesel chamber (CARBIO) consortium presented EPA a certification scheme demonstrating that Argentina could export biodiesel made of soybeans produced in land which was not cultivated or cleared after 2007 and hence be eligible to generate RINs and meet obligations (mandates) under the RFS. In late January 2015, EPA approved CARBIO's certification scheme. However, there were seven local large biodiesel export plants registered with EPA well before CARBIO's approval. So far none is exporting under CARBIO's umbrella and they all use individual recordkeeping. Already in 2013 one of these plants exported a small volume which generated RINs. Efforts aimed at de-authorizing the CARBO certification scheme while the seven large plants remain eligible to generate RINs will not adversely impact Argentine biodiesel shipments to the United States.

Research Initiatives/Alternative Energy Policies

Under Law 26,190 of 2006, named National Support for the Use of Renewable Energy Sources, and its regulatory framework established in 2009, the GOA created program Genren (Renewable Generation). Its objectives were to produce 895 Mega Watts (MW) in a sustainable manner, reducing emissions of carbon dioxide and other GHG, diversifying Argentina's energy matrix, while promoting regional economies throughout the country. The Law established that eight percent of the country's electricity consumption be supplied by renewable energy sources (including wind, biofuels, biomass, photovoltaic, solar and small hydro power projects) by 2016. However, this goal has yet not been reached. Through mid-2016 only 2 percent of the country's total electricity consumption is generated sustainably. In 2010 the GOA announced a second stage Genren II, for 1200 MW, exclusively for wind energy. In September 2015 Congress passed Law 27,191, modifying Law 26,190. The new law establishes that by the end of 2017 eight percent of the electricity consumed in the country has to be originated from renewable sources and by 2025 it has to account for 20 percent. There is currently a lot of interest of local and foreign investors in expanding, especially, the production of energy through wind and sun.

The Ministry of Agriculture, through the research agency INTA, conducts and coordinates most of the research in biofuels in Argentina. The National Bioenergy Program goals are to ensure the supply of sources of bioenergy in support of sustainable development, national energy security, the reduction of poverty, the attenuation of climate change and environmental equilibrium. There are three specific objectives: 1)

identification and characterization of the potential of different crops, waste and byproducts to produce energy, 2) the study and development of non-traditional crops with energy potential, and 3) the development of second generation biofuels, through the identification of new enzymes to degrade cellulose. INTA is currently working on several projects which involve the production of different feedstocks and also the industrialization and processes to obtain biofuels. Recent examples of these are: "Biodiesel for Self-consumption"; "Anaerobic Digestion in the Agro Industrial Sector"; "Second Generation Bioethanol"; "Evaluations of Sorghum for the Use in Bioethanol"; "Adaptability and Potentiality of Topinambur"; and "The use of Agro Industrial and Urban Waste".

The Ministry of Agriculture and the Secretariat of Energy manage a project called Probiomasa, with the objective of producing electric and thermal energy using biomass feedstock from the agricultural and forestry sectors, and urban waste. With several projects in 12 different provinces, the program provides funding support for foundations and bases to launch targeted projects. Through February 2016, there were more than 130 projects, of which approximately 60 were already operating and 13 were under construction.

There are also provincial entities, public and private universities, and the private sector working on different projects. Some of these programs focus on jatropha, algae, castor oil plant, canola, sweet sorghum and miscanthus. Research is primarily focused on feedstocks which can be produced in areas not suited for crop production and which do not compete with food production. A few programs are working on cellulosic biofuels, based on sugar cane, sugar beets, harvest residues, sweet sorghum, and switch grass. There are also a few industries and municipalities developing biogas facilities to use waste and reduce the cost of energy they consume. There are also some small operations which recycle used vegetable oil.

Since 2009 Argentina is a member of the Global Bioenergy Partnership (GBEP) which promotes bioenergy for sustainable development. The government received financial support from the IDB and coordinated public/private studies of 24 sustainability indicators for bioenergy. The results were published in November 2015.

I. Gasoline and Diesel Markets

Fuel Use Table

Fuel Use History (Million Liters)											
Calendar Year	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Gasoline Total	3,698	4,260	4,970	5,520	5,760	6,240	6,970	7,470	8,160	8,080	8,510
Diesel Total	12,240	13,026	14,487	14,568	13,735	15,451	16,232	15,345	16,340	15,214	15,910
On-road											10,020
Agriculture											3,200
Construction & Mining											
Shipping & Rail											490
Industry	0	96	627	718	975	1,671	2,022	1,817	2,590	1,794	2,200
Heating											
Jet Fuel Total											
Total Fuel	15.93	17.28	19.45	20.08	19.49	21.69	23.20	22.81	24.50	23.29	24.42

Markets	8	6	7	8	5	1	2	5	0	4	0

Fuel Use Projections (Million Liters)											
Calendar Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Gasoline Total	8,300	8,700	9,150	9,600	10,100	10,600	11,100	11,700	12,250	12,900	13,500
Diesel Total	15,920	16,850	17,660	18,600	19,530	20,460	21,500	22,550	23,700	24,850	26,120
On-road											
Agriculture											
Construction & Mining											
Shipping & Rail											
Industry											
Heating											
Jet Fuel Total											
Total Fuel Markets	24,220	25,550	26,810	28,200	29,630	31,060	32,600	34,250	35,950	37,750	39,620

Source: History (private sector based on data from Secretary of Energy; Projection (Post based on private and official sectors)

In 2015, Argentina consumed 15.9 billion liters of diesel, of which 2.2 billion liters were used to generate electricity, and 8.5 billion liters of gasoline. The country was energy self-sufficient until several years ago. The combination of declining oil and gas production coupled with growing demand forces the country to import gas, gasoline, and diesel. Large car sales in the past several years, plus a strong recovery of the agricultural sector are expected to secure steady diesel and gasoline demand from 2017 and beyond as the local economy is expected to rebound strongly.

As for 2016, the demand of gasoline is expected to drop marginally, while demand of diesel could remain unchanged while economy reacts through strong adjustments and a recession. There are no flex fuel cars sold in the country and only one automaker imports a hybrid model, sold at a very expensive price. However, the use of flex fuel cars in the near future should not be discarded. In 2010, Argentina discovered a huge shale oil and shale gas field, named Vaca Muerta. This non-conventional energy source in the province of Neuquen is the third largest of its kind in the world. However, until it goes into production (a minimum of five years and several billion dollars of investment needed), most analysts project Argentina expanding its energy imports. Sources report that lower world oil prices are expected to slow down investment in this area.

IV.Ethanol

Ethanol Used as Fuel (Million Liters)										
Calendar Year	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Beginning Stocks										
Fuel Begin Stocks	0	0	20	25	28	38	35	43	54	44
Production										

Fuel Production	0	23	125	173	250	472	671	815	880	1,040
Imports										
Fuel Imports	0	0	0	0	0	0	0	0	0	0
Exports										
Fuel Exports	0	0	0	0	0	0	0	0	0	0
Consumption										
Fuel Consumption	0	3	120	170	240	475	663	804	890	1,040
Ending Stocks										
Fuel Ending Stocks	0	20	25	28	38	35	43	54	44	44
Production Capacity										
Number of Refineries	0	3	9	9	11	12	14	14	17	17
Nameplate Capacity	0	120	215	355	600	680	880	950	1,250	1,250
Capacity Use (%)	0	19%	58%	49%	42%	69%	76%	86%	70%	83%
Co-product Production (1,000 MT)										
Distill Grain Sol Dry Eq	0	0	0	0	18	130	285	370	340	400
Feedstock Use for Fuel (1,000 MT)										
Grains (corn)	0	0	0	0	58	420	920	1,200	1,100	1,300
Molasses/Juice	0	90	470	650	880	1,170	1,150	1,300	1,700	2,000
Market Penetration (Million Liters)										
Fuel Ethanol	0	3	120	170	240	475	663	804	890	1,040
Gasoline	5,520	5,760	6,240	6,970	7,470	8,160	8,080	8,510	8,300	8,700
Blend Rate (%)	0.0%	0.1%	1.9%	2.4%	3.2%	5.8%	8.2%	9.4%	10.7%	12.0%

Production

Ethanol production for 2017 is forecast to increase to a record 1.04 billion liters. This is a result of the recent increase in the domestic blend mandate from a minimum of 10 to 12 percent in gasoline and greater fuel demand. Of total ethanol production in 2017, half should originate from sugar supplies and the other half from grain supplies. The new government supports the bioethanol industry and believes this sector can be part of the solution to increase domestic fuel supply and help limit the large volume of imported fuel which is very costly to the country. Contacts indicate that the government is seriously analyzing the launching of flex fuel cars in the next few years. The local car industry already produces these types of cars for export to the Brazilian market. However, the logistics and adjustments of supplying E100 at the pump is expected to take several years and costs are significant.

There are nine local sugar mills located in the north western provinces which have quota to supply under the mandate. Mills use mostly molasses but also can use directly sugarcane, depending on the convenience and returns of their different businesses. Sugar is the main focus of the large mills, but due to recent low world sugar prices and good domestic ethanol prices they have lately focused more in expanding the ethanol business. The recent increase of 2 percentage points of the mandate was given exclusively to the sugar industry. By doing this, the government helped them to reduce part of the large sugar stocks they were holding and allows mills to increase their share of an increasingly profitable business. There are three sugar mills expected to begin supplying ethanol under the mandate quota in 2016 which did not participate previously. These companies are in Tucuman province and in the first stage they are expected to use a third company to dehydrate the ethanol.

The other half of bioethanol supplies for the domestic mandate has to be supplied by the grain ethanol industry. There are five plants distributed in the main corn area in the center of the country. Although most plants can use different feedstocks, they use almost exclusively corn which happens to be the most efficient under current market conditions. Argentina produces and exports significant volumes of sorghum, but so far

its use for bioethanol production has been insignificant. There are a few projects of small plants based on corn to produce ethanol for self-consumption (integrated to feedlots) and small plants to generate electricity for self-consumption and/or connect to the grid. As in the sugarcane ethanol sector, the corn ethanol industry continues to be profitable.

The country's production capacity of bioethanol is expected to increase to 1.25 billion liters in 2016, once the three sugar mills begin to supply ethanol for the mandate. The original nine sugar mills have a production capacity of bioethanol of approximately 450-500 million liters a year. The five plants which utilize grain as feedstock have a production capacity of approximately 550 million liters a year. The latter plants supplied 59 percent of the country's bioethanol in 2015. The first of the grain ethanol plants were inaugurated in 2012, and the most recently in late 2014. Argentina also produces some 130 million liters of alcohol for industrial and potable use (not included in the ethanol table) for its domestic market. Most production is made by sugar mills, but there is a plant which inaugurated in 2012 in Cordoba which utilizes grains and has a production capacity of 50 million liters a year. The main use of this alcohol is for beverages, pharmaceutical, cleaning, cosmetics, and paints.

Almost all grain processing plants dry the distillers grains (DDGS). However, a few plants cannot dry their total volume so they sell part as wet distiller's grain to nearby feedlots or dairies. DDGS are currently sold domestically to feed mills, feed additive companies and large dairies or feedlots which are far from bioethanol plants but still prefer to use them. Three of the plants are currently exporting DDGS to neighboring Chile, Uruguay and to South East Asia. Sugar mills continue to make improvements in reducing the negative impact of the vinasse, a byproduct of the distilleries, which is a significant environmental problem which sugar mills are resolving as the GOA continues to exert significant pressure.

Since December 2015, when the new government took office and eliminated the export tax on corn and other agricultural products, local bioethanol processors now purchase corn locally at similar prices to those of the world market. The advantage of purchasing corn at a 20 percent discount does not longer exist. Local corn prices have increased 150 percent (in peso terms) since late 2015, while the official price of grain bioethanol only by 55 percent. Despite this difference, the industry still enjoys positive returns. In the case of bioethanol produced from sugarcane, it allows mills to diversify their production and have an alternative depending on the size of the crop and the level of world sugar prices. Argentina is self-sufficient in sugar and normally has a significant volume of sugar surplus to export. The current sugarcane harvest began in June, with a large carry in from the previous season and expectations of a large production. However, world sugar prices have begun to lately increase and could help the industry to improve its difficult economic and financial situation.

Argentina is the world's third largest corn exporter, averaging around 18-22 million tons in the past 3-4 years. Domestic consumption ranges between 9-10 million tons a year, with the poultry, feedlot, and dairy industries as the main consumers. The local grain ethanol industry, which is expected to consume roughly 1.3 million tons of corn in 2017, has lots of room to continue expanding as corn production in Argentina is expected to increase significantly during this crop season and hereafter as result of the government's new policies for the sector. Sorghum exports are also important, with volumes ranging between 1.5-2.0 million tons a year.

Consumption

Argentine consumption of bioethanol for 2017 is forecast to increase to 1.04 billion liters, a new record. This is the result of a full year with the new 12 percent mandate mix (increased in April 2016) and an expected growth in gasoline demand due to an anticipated rebound in the local economy. The mandate mix for 2016 is estimated to total approximately 10.7 percent as the first 4 months operated at 10.5 percent. Industry contacts expect to reach the full 12 percent mix rate by August-September this year. The mandate rate in 2015 was 9.4 percent. Since the implementation of the biofuels law in 2010, bioethanol domestic consumption has grown every year.

Industry contacts indicate that the government is working on adapting gasoline specifications and higher quality standards which will allow, eventually, a higher content of bioethanol. Car manufacturers are not very supportive of an increase of the mandate blend due to potential problems with engines and the extension of warrantees. The local association of grain ethanol indicates that they have done studies which show that gasoline can be blended with 20 percent ethanol without affecting engines. The case of neighboring countries Brazil and Paraguay are good cases that support blends of 25-27 percent of ethanol.

The country is still working on becoming more fuel efficient. Engines have no limitations on minimum mileage efficiency, there are no flex fuel cars sold in the country and hybrid and electrical cars are practically nonexistent and do not have import duty advantages. Most cars run on gasoline. However, for some time, Argentina has had an extensive fleet of vehicles which run on liquefied petroleum gas. More than 2 million cars out of 10 million run on this fuel (which primarily substitutes gasoline). There are several passenger railway lines, with some running on electricity and some on diesel. Cargo lines all run on diesel.

Argentina has a huge trucking system which has replaced a decaying railway system. The country is extensive and boasting a large agricultural sector demands large volumes of diesel to produce and move cargo and passengers. The GOA is continuing to revamp some metropolitan railway tracks and more recently, key cargo tracks in agricultural areas in the interior of the country to make freight more efficient and less costly.

Trade

Exports of bioethanol from Argentina are not expected in the near nor medium future. Argentina still has a significant potential to increase its domestic consumption which enjoys official support that guarantees a profitable business. Bioethanol domestic prices under the mandate are normally higher than world prices. Also greater investment in expanding capacity would be needed to support exports.

Once the biofuel mandate was in place in early 2010, Argentine ethyl alcohol exports dropped significantly as most production surplus was redirected to supply the local bioethanol mandate which was more profitable. Before the mandate, Argentina exported 60-80 million liters of ethyl alcohol (not for fuel use) a year. Exports in 2015 totaled 22 million liters, with Chile and France being the main destination.

Ethanol imports from Mercosur countries (including Brazil) are duty free, and from countries outside the block pay 20 percent. Exports are taxed five percent, but receive a 4.05 percent rebate.

Ending Stocks

Bioethanol ending stocks for 2017 are forecast at 44 million liters. Stocks are mainly in the hands of the local

sugar industry which produces ethanol in the last semester of the year, which then is distributed throughout the following months until the new sugar crop begins in May. The local grain bioethanol industry can have by the end of the year some 10 million liters waiting to be distributed immediately as demand at that time of the year is large.

V. Biodiesel

Biodiesel (Million Liters)										
Calendar Year	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Beginning Stocks	10	40	75	20	20	55	5	20	35	25
Production	830	1,360	2,070	2,760	2,800	2,260	2,935	2,060	2,690	3,100
Imports	0	0	0	0	0	0	0	0	0	0
Exports	780	1,305	1,545	1,910	1,770	1,305	1,820	895	1,500	1,700
Consumption	20	20	580	850	995	1,005	1,100	1,150	1,200	1,400
Ending Stocks	40	75	20	20	55	5	20	35	25	25
BalanceCheck	0	0	0	0	0	0	0	0	0	0
Production Capacity										
Number of Biorefineries	18	22	24	27	33	36	38	38	38	38
Nameplate Capacity	1,500	2,300	2,800	3,300	4,000	4,550	5,200	5,200	5,400	5,400
Capacity Use (%)	55.3%	59.1%	73.9%	83.6%	70.0%	49.7%	56.4%	39.6%	49.8%	57.4%
Feedstock Use for Fuel (1,000 MT)										
Soybean oil	750	1,230	1,870	2,500	2,530	2,050	2,660	1,860	2,440	2,800
Market Penetration (Million Liters)										
Biodiesel, on-road+Agriculture	20	20	580	850	995	1,005	1,100	1,150	1,200	1,400
Diesel, on-road+Agriculture	13,830	12,740	13,775	14,210	13,530	13,750	13,420	13,710	13,720	14,500
Blend Rate (%)	0.1%	0.2%	4.2%	6.0%	7.4%	7.3%	8.2%	8.4%	8.7%	9.7%
Diesel, total use	14,568	13,735	15,451	16,232	15,345	16,340	15,214	15,910	15,920	16,850

Production

Production of biodiesel in Argentina in 2017 is forecast to increase to 3.1 billion liters, a new record. The final production volume is tied to the country's domestic use and exports since there are no imports. Exports depend strongly on other countries' biofuels and trade policies. Biodiesel production for the domestic mandate is expected to continue its ascending trend of the past years. Most contacts believe that the US will continue to import significant volumes of biodiesel to meet increased mandates. They also believe that the Peruvian market will continue to be open while exports to the EU will probably resume timidly during 2017. Production in 2016 is estimated at 2.69 billion liters, a substantial increase from the previous year thanks, primarily, to growing exports to the US.

Practically all biodiesel produced in Argentina is made from soybean oil. The biodiesel business began in 2007 when large local vegetable oil crushing plants saw the opportunity to add value to the oil and export it as biodiesel to the EU. Argentina is one of the world's three largest soybean producers and the top exporter of soybean meal and oil. There is an insignificant volume of biodiesel produced from used cooking oil encouraged by several municipalities and some private operations.

Since its beginning, local biodiesel operations have invested over US$1.5 billion. The current production capacity is approximately 5.4 billion liters and it is expected to remain the same in 2017. Due to the

difficulties of the past several years in exporting, investment in expanding has been minimal. The use of capacity during 2010-2012 ranged between 70-84 percent. However, the combination of limitations to export to the EU market and a significant growth in capacity during 2013-2015 made the used capacity drop to 40-55 percent. Used capacity in 2017 is forecast at 57 percent, the highest since 2012. While most small plants are operating almost at full capacity to supply the local mandate, there are a few large plants which have shut down or are only working a few days a month. New investment is directed primarily to small plants.

There are 38 biodiesel plants in Argentina with capacity of up to 700 million liters per year. The largest ten companies account for over 70 percent of the country´s capacity. Most of these companies are international and local traders which already had large vegetable oilseed crushing facilities in the country. They account for practically all exports. The balance is distributed among 28 smaller companies, with plants with a capacity ranging between 12-110 million liters per year. This group supplies most of the local mandate. These plants typically need to buy the feedstock from third parties and have higher production costs than the large plants, most of which are fully integrated.

The local biodiesel industry had a difficult 2015 due to small exports and a low domestic official price. The used capacity was 40 percent, the lowest since the industry began operating. Currently the sector of small and medium companies is in a good situation as the official price is currently profitable for them. The large exporting companies area also enjoying positive returns. However, the used capacity for 2016 and 2017 is expected to continue to be low, ranging between 50-57 percent. Most of the big plants are owned by large corporations which have been operating in the local grain sector for many years and do not have biodiesel as their core business. Several of these plants were built during the first days of the biodiesel industry and have already recovered the investment.

Consumption

Argentine biodiesel consumption for 2017 is forecast to reach a record 1.4 billion liters. The local economy is going through significant adjustments implemented by the new government and an economic recession. Most economists believe that there will be a strong rebound in 2017, with lower inflation, strong investment and a stronger agricultural sector. Post projects a significant growth in diesel consumption and the current B10 for on-road transport and agriculture will be maintained at least through 2017 with some additional use in agriculture. Post expects only very small volumes of biodiesel will be used in the industrial sector through 2017 to generate electricity.

There are some rumors indicating that the mandate could be increased in the near future to 11 or even 12 percent. Also some express that the mandate for public transportation, trucking and agriculture should be increased to 20 percent. In late 2013 the government announced that diesel for heat and power generation would be mixed with 10 percent biodiesel. This requirement has been delayed (but not forgotten) as there have been some technical limitations which are being worked on. In July 2016, the state company that administers the wholesale electricity market finished a test in a heat and power plant that was very successful and more tests will follow shortly. There are many different technologies and equipment involved in this sector, as well as a diversity of biodiesel qualities. This sector (“industry” in the fuel table) consumes approximately 2.0-2.5 billion liters of diesel per year. Local biodiesel producers estimate that some 50-100 million liters of biodiesel could be used in the generation of electricity in 2017, but Post has not included this in the biodiesel balance.

There is no official data on diesel consumption per end user in Argentina. However, contacts estimate that in 2015, cars demanded 2.0 billion liters, freight trucking 6.7 billion liters, public transportation 1.32 billion liters, the agricultural sector 3.2 billion liters, and the shipping industry 490 million liters. Except for the latter, all the other end users consume diesel mixed at the official blend.

The country is still working on becoming more fuel efficient. Engines have no limitations on minimum fuel mileage efficiency, there are no flex fuel cars sold in the country and hybrid and electrical cars are practically nonexistent and do not have import duty advantages. Argentina has an extensive fleet of vehicles which run on liquefied petroleum gas since long ago. More than 2 million cars out of 10 million run on this fuel. There are several railway lines of passengers with some running on electricity and some on diesel. Cargo lines all run on diesel.

Car manufacturers and oil companies prefer not to increase the blends due to liability concerns, logistical problems, and higher costs. The Argentine chamber of biodiesel has come up with successful results after testing a diesel engine running on 10 and 20 percent biodiesel blends. Most contacts indicate that mandate blends will continue to be set by the GOA depending on its needs. If it requires increasing beyond current blends the local industry will have to adapt.

Trade

Argentine biodiesel exports for 2017 are forecast at 1.7 billion liters. This would be the highest volume since 2014 and only 200 million liters shy of the 2011 record when most shipments went to the EU. Local traders expect most exports to continue flowing to the United States to meet growing mandates and much smaller volumes to Peru. However, exports to Peru will depend on the resolution of a dispute over subsidies and antidumping of Argentine biodiesel in Peru. Most local contacts are not optimistic on any significant resumption of biodiesel exports to the EU in 2017. In the best case scenario, brokers believe exports could total 100-200 million liters. Exports of Argentine biodiesel are currently profitable supported by a weaker currency and access to the US market where the blender's credit and RINs add value to shipments.

As in 2015 and 2016, Argentine biodiesel exports in 2017 will be mainly focused on the US biodiesel market which benefit from RINs under the RFS and the blenders credit under the IRS tax code. Local brokers forecast exports between 1.4-1.5 billion liters next year, the key assumption being that the blender's credit is not changed to a US producer's only credit. Exports to the US in 2016 are expected to total 1.3 billion liters. In early 2015, EPA approved a certification scheme presented by the Argentine Biodiesel Chamber (Carbio) demonstrating that it complied with EPA's environmental regulations and qualified under the U.S. Renewable Fuel Standards program. Biodiesel exports have to be segregated and traced back to the farm, demonstrating that the feedstock (soybeans in this case) used to make biodiesel was produced on land not cultivated or cleared after 2007 (the year EISA 2007 was enacted). However, local exporters are not using this certification scheme as there are seven processors which are registered individually with EPA and use an individual record keeping system. EPA segregation requirements add an estimated cost of US$30-40 per ton of biodiesel. This includes a price premium paid to farmers producing "EPA soybeans", the cost of segregations and controlling the whole chain until export, the time consumed in the whole process, etc. Different companies have different problems. The most common are limited supply of traced soybeans, smaller-than-needed biodiesel storage capacity, and logistical complications.

Sources report that foreign (namely US) demand for biodiesel is rising this year and possibly next year as Argentine suppliers capitalize on developments in the US biofuels market, in particular expanding US federal mandates for biomass-based diesel (BBD) and other (non-cellulosic) advanced biofuel, strong D 4 RIN values, the US blenders tax credit, and a sharply devalued peso. At present, about 23 percent of the U.S. fuel supply is diesel used in heavy-duty trucks, buses, construction and farm equipment, and heating oil. However, domestically processed biodiesel in the United States faces imported price-competitive biodiesel and renewable diesel that is more price competitive. According to Bloomberg, biodiesel derived from soybean oil costs US$3.71 a gallon, but imported biodiesel coming through the Gulf of Mexico port costs US$3.07 with Argentine supplies up to 30 cents cheaper than that. This presents a significant opportunity for Argentina to gain greater market share. In 2015, Argentina was the largest foreign supplier of biodiesel to the US market and accounted for 35 percent of total US biodiesel and renewable diesel imports. [1]

In the past three years, Peru has been a very steady market for Argentine biodiesel, and emerged as the second largest market in 2015 following the loss of sales to Europe and loss of discretionary sales supported by the price competiveness of lower cost biodiesel and very high oil prices just prior to the oil price collapse. Peru as imported roughly 300 million liters a year to supply its official mandate, most of which was supplied by Argentina. However, in August 2014 the Peruvian Institute of Defense of Competition and Intellectual Property Protection (INDECOPI) opened an investigation on imports of alleged Argentine subsidized biodiesel. Peruvian biodiesel plants have been idled due to the influx of cheaper foreign suppliers, and this investigation was requested by the largest Peruvian biodiesel processor. To date Peru has set anti-subsidy duties per company ranging between US$15-30 per ton of biodiesel. Regarding the antidumping case, Peruvian authorities continue to analyze and work on it. It is unclear what the result will be, but if a countervailing duty is imposed it is expected to affect Argentine exports significantly. To date, Argentina continues to export biodiesel to Peru.

In November 2013 the EU implemented an average countervailing duty of 24.6 percent on Argentine biodiesel due to alleged dumping (provisional anti-dumping duties were established in May 2013). In practice, this meant the closing of that market. Argentina appealed such measure before the WTO. In March 2016 the WTO ruled mostly in favor of Argentina's position, indicating that the EU had wrongly calculated the tariffs. In late May each country appealed the panel's ruling, and the appellate body has 90 days to issue its report. The sector believes that the EU will have to eliminate or drastically reduce the imposed tariffs. On the other hand, on May 2016, Spain eliminated a blockage to imported biodiesel which had come into effect two years ago and affected directly Argentina's exports. This is very important as Spain was the number one market for Argentine biodiesel exports in the EU and will be able to resume exports to this market once the antidumping issue is resolved. Nonetheless, local brokers believe that exports to the EU will restart slowly in 2017 at volumes far smaller than in the past.

Argentine biodiesel is very competitive as a result of large production scale with the latest technology, the use of no-till and biotechnology seed, and having the soybean production area very close to the industry and ports. This, and the revaluation of the Argentine peso, is the key sources of Argentina's biodiesel competitiveness. To some extent, although how much is hotly debated, Argentina biodiesel exports are also supported by the differential exports tax which is lower on biodiesel than it is for its feedstock (soybean oil).Argentine biodiesel exports are currently (through June 2016) taxed 5.04 percent. The GOA sets the level of the tax every month. Import duties are 14 percent. The export tax on soybeans is 30 percent and soybean oil is 27 percent.

Stocks

Argentine biodiesel ending stocks for 2017 are forecast at 25 million liters. Local plants do not produce biodiesel for stocks, due to the instability of the product. Normally stocks are volumes waiting to be shipped right away.

VI. Advanced Biofuels

There is no production so far. However, there are a few government, private sector and university programs researching these types of feedstocks and technology.

VII. Biomass for Heat and Power

Sugar mills in Argentina generate part of their energy needs from bagasse. Four sugar mills have new and high efficiency generation boilers which allow them to cogenerate energy for their own needs and to sell to the local energy grid. The total capacity of these plants is approximately 100 MW. Other mills have similar plans, but investment is coming very slow. There are several projects to produce electricity from woody mass in Corrientes and Misiones provinces. There are also some projects to produce energy from residential waste and livestock and oil crushing facilities. Cordoba province recently inaugurated a biogas plant using the fermentation of corn silage with cattle and hog manure. This plant will produce one megawatt per hour of electrical power which will be used to feed an ethanol plant and sell to the grid. These plants are expected to be built in several parts of the region.

[1] http://www.bloomberg.com/news/articles/2016-06-21/big-soy-crop-no-help-for-u-s-biofuel-makers-overrun-by-imports