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Prepared By: Kenneth Joseph

Approved By: Benjamin Boroughs

Report Highlights:

Argentine biofuel production in 2021 continues to suffer from the negative effects of the COVID-19 pandemic which has reduced fuel demand, a prolonged domestic economic recession, and recent changes in policy. Bioethanol production is forecast at 980 million liters, which except for 2020, is the lowest volume since 2016. Biodiesel production in 2021 is projected at 1.54 billion liters, which except for 2020, is the lowest since 2010, when a blend mandate was first put in place. Exports are forecast at 1.1 billion liters, similar to 2019, prior to COVID-19. The EU continues to be the only market where Argentine biodiesel is being shipped and sales to additional markets are not anticipated due to the large price spread between diesel and soybean oil and import duties at some destinations. In July 2021, the Argentine Congress passed Law 27640, which will provide the government with the flexibility to reduce biofuel blend rates to as low as 9 percent for bioethanol and 3 percent for biodiesel.

I. Executive Summary

Argentina's economy is expected to grow 6 percent in 2021 after falling 9.9 percent in 2020 due to the combined effects of a multi-year recession exacerbated by the COVID-19 pandemic. Though Argentina's vaccination rate trails its neighbors Chile and Uruguay, more than 55% of Argentines have received their first vaccine dose and economic life and fuel consumption is beginning to return to normal. In recognition of the improving health conditions, local, provincial, and national authorities have begun relaxing movement restrictions. In 2021 gasoline consumption is projected to increase 25 percent and diesel 5.6 percent, both matching the levels of 2016.

In mid-July 2021, the Argentine Congress passed Law 27640, a new biofuels law to replace the original Biofuels Law 26093/2006 which expired in May 2021. This new law, which will expire in December 2030, was enacted on August 4, 2021, but the implementing regulation is pending. The new law will reduce the mandated biodiesel blend rate to 5 percent (from 10 percent under the old legislation) and will give the Secretariat of Energy the authority to lower the blend rate to a minimum of 3 percent, if it determines that economic conditions dictate a reduction in fuel prices. In the case of bioethanol, the new law mandates a blend rate of 12 percent, with the volume divided evenly between sugarcane and corn feedstocks, which is the same as the old legislation. However, the Energy Secretariat will now have the authority to reduce the volume coming from corn ethanol by up to half if necessary. The ruling coalition largely supported passage of the new law with the justification that in a time of high crop commodity prices, reducing biofuel consumption could lower fuel prices. Biofuels advocates (with the exception of the sugarcane industry) opposed the new law arguing that it runs contrary to Argentina's climate change commitments and that it will result in the closure of plants, higher production costs, and will limit future investment in the sector.

Bioethanol for Fuel Use:

Fuel ethanol consumption in 2021 is projected at 980 million liters, 28 percent higher than in 2020 as a result of larger expected gasoline sales and a high blend rate in line with the past 4-5 years. The local economy is expected to recover somewhat in 2021 from a significant decline in 2020 as a result of an ongoing recession combined with some of the world's tightest COVID-19 restrictions.

The recently passed Biofuels Law 27640 maintains a minimum ethanol blend rate of 12 percent but enables the Energy Secretariat to adjust the blend rate downward, although not lower than 9 percent (6 percent from sugarcane and 3 percent from corn). The sugarcane sector supported the new law, which basically left the position of the sector unchanged from the previous Biofuels Law 26093/2006 and its resulting decrees. In contrast, the corn ethanol sector opposed the new law as now authorities can cut its volume up to half. Key issues will be decided by the issuance of new implementing regulations which are still pending. Nonetheless, Post's forecast assumes the 2021 mandate continues to be supplied equally by the corn and sugarcane ethanol sectors.

Argentina has at least 22 bioethanol plants operating in 2021, with a production capacity of 1.64 billion liters. The capacity use will be close to 60 percent, higher than in 2020, as a result of

larger gasoline sales. The sugarcane sector has 12 dehydrators and 16 distilleries. The corn sector has 5 medium to large scale plants and 5-10 very small plants that are used intermittently. Argentina is one of the world's three most important corn exporters and normally produces excess sugarcane which is either used for ethanol production or for exports of sugar.

Domestic use resulting from the government's biofuel mandate is the main driver of bioethanol production as exports are quite limited and sporadic. Argentina regularly imports and exports ethanol for industrial use, although it is often difficult to determine the final intended use of exported ethanol. In 2020 Argentina exported roughly 30 million liters of ethanol. While the Energy Secretariat can authorize imports of ethanol to be used under the mandate, the new biofuels law continues to protect the domestic ethanol industry as it dictates that bioethanol used to comply with the mandate must be produced in Argentine plants with locally produced feedstocks.

Biodiesel:

2021 will be one of the local biodiesel industry's worst years since its creation in 2007. Production is projected at 1.54 billion liters and idle capacity is estimated at 65 percent, the second lowest figures for the last 11 years, with only 2020 having worse performance. Despite exports practically recovering to pre-pandemic levels, production to meet the official blend mandate is expected to only reach 500 million liters, well less than half the pre-pandemic use and the lowest since the start of the program, with an average blend rate of only 4 percent. The main reasons for this are a lack of enforcement of the existing mandates, changing policies that reduced blend rates in the first 3 months of the year, delays in updating official prices to match increased production costs, low diesel consumption due to the economic recession, and the implementation of the new Biofuels Law 27640 in the last part of 2021 which will reduce the official blend rate from 10 percent to 5 or even 3 percent. Production in 2020 was the lowest since 2009, with the poorest capacity use rate since biodiesel production began in the country. Voluntary biodiesel consumption outside the mandate is negligible.

The new biofuels law will continue to protect the domestic biodiesel industry from import competition as it dictates that biodiesel used to meet the blending mandate must be produced in Argentine plants using domestically produced feedstocks. Like ethanol, the Energy Secretariat can issue special import authorizations to allow imported biodiesel to comply with the mandate, however this is not anticipated, and biodiesel imports are not expected due to large idle domestic production capacity. Exports of biodiesel are not directly addressed by the new Biofuels Law 27640. While the local blending mandate will be met by biodiesel supplied by small to medium sized operators, domestic and international grain companies own the larger, more efficient, and vertically integrated plants used to produce biodiesel for export.

There are 33 biodiesel plants in production in Argentina in 2021, with a total capacity of 4.43 billion liters. Argentina almost exclusively uses soybean oil as feedstock. With the reduction in the domestic blend rate, and export opportunities limited, the country most likely will have larger volumes of soybean oil available for export than were available in recent years. However, due to the aforementioned factors that have already reduced the effective blend rate this year, the

implementation of the new law will not result in a sudden reduction in the volume of biodiesel produced or increase in soybean oil production.

Exports in 2021 are forecast at 1.1 billion liters, a 63 percent increase from the low level seen in 2020, as a result of a vigorous European demand and competitive Argentine biodiesel prices. The EU continues to be the only market where Argentine biodiesel is shipped, pursuant to an annual quota of 1.36 billion liters at a minimum import price. Shipments in 2021 were all destined to the Netherlands for use there and in other countries. Exports to the US and Peru remain unlikely due to high import duties. Exports to discretionary markets are not expected as current world diesel prices are below those of soybean oil.

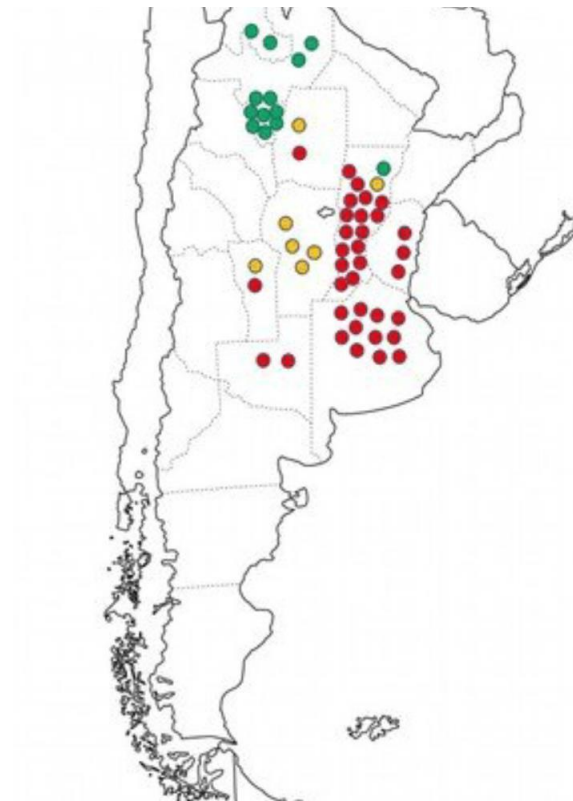
II. Policy and Programs

New Biofuels Law 27640 - July 2021

On July 16, 2021, the Argentine Congress passed the law 27640 entitled “Regulation and Promotion Regime for the Production and Sustainable Use of Biofuels” which replaces the original Biofuels Law 26093 of 2006, which expired in May 2021. The new law, which still needs regulations be promulgated, will expire on December 31, 2030, and has the possibility of being extended 5 more years. Key points include:

- The mandated bioethanol blend rate with gasoline is a minimum of 12 percent, with a potential reduction to 9 percent. While in normal years, the bioethanol market is intended to split evenly between sugarcane and corn feedstocks, in the case where high commodity prices are deemed to negatively affecting fuel prices, all reductions in blending will come from bioethanol produced from corn. The new minimum would dictate that 6 percent of the gasoline market be given to bioethanol derived from sugarcane and 3 percent from corn-derived bioethanol.
- The Law considers bioethanol and biodiesel the biofuel produced in plants in Argentina using locally produced feedstock of agricultural origin or organic waste.
- The mandated biodiesel blend rate with diesel is a minimum of 5 percent, but could be reduced to 3 percent when prices of feedstock increase in such a way that is deemed to distort fuel prices.
- Biofuels receive tax breaks in the form of lower value added tax, income taxes, diesel import tax, hydric infrastructure tax, the tax on liquid fuels and the tax on carbon dioxide which are applied on fossil fuels.
- The Secretariat of Energy will be authority with the power to regulate and control biofuels (it will determine official prices, quality, volumes, blend rates and sanctions for non-compliance)
- Companies producing or distilling fossil fuels cannot own nor participate in companies producing biofuels
- The Secretariat of Energy could allow, if market conditions permit, the substitution of imported fossil fuel with local biofuels.
- The Secretariat of Energy will set and establish conditions for entities to consume internally produced biofuels, such as those used by bus companies, truck transportation or farm machinery and equipment companies.

The following map shows the areas where the different biofuels plants are located in Argentina, based on the feedstock they use:



- *Sugarcane bioethanol plants*
- *Corn ethanol plants*
- *Biodiesel plants*

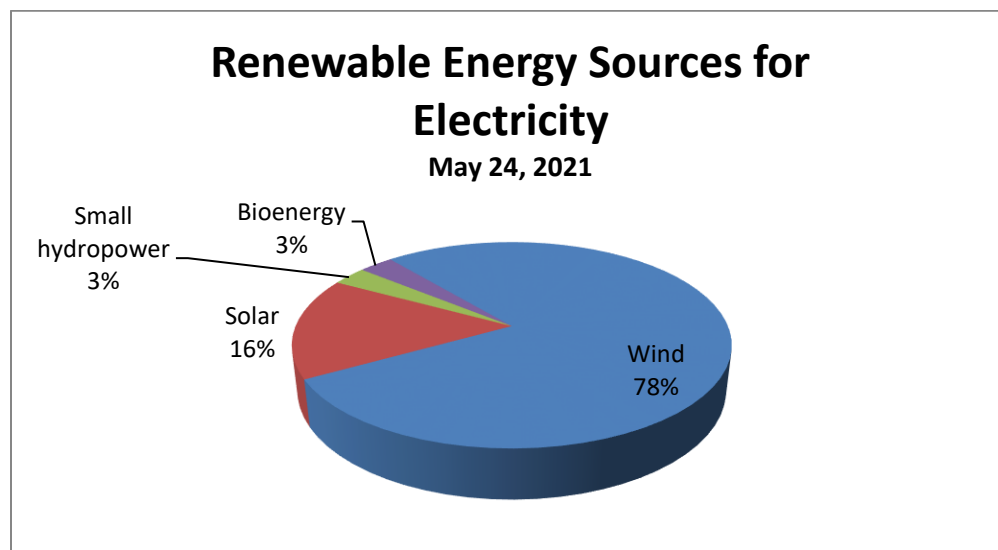
Source: FAS Buenos Aires and Clarin Rural

Renewable Energy, Greenhouse Gas (GHG) Emissions and Other Environmental Issues

Based on the Emissions Gap Report (UNEP, 2016), Argentina accounted for 0.7% of global GHG emissions in 2014. President Alberto Fernandez has instructed the government to work on a National Plan of Adaptation and Mitigation to Climate Change, to be presented at the UN Climate Change Conference in November 2021, Glasgow, Scotland. Argentina will propose an additional reduction from its Nationally Determined Contribution (NDC) presented in 2016, lowering it from 483 to 349 MtCO₂e by 2030. The main tools to reach this goal are the expansion of renewable energies (by 2030 at least 30 percent of the total energy matrix will have

to be from renewable sources), financing, lower subsidies to fossil fuels, expanded protected areas, and improved efficiency in industry, transportation and construction.

In 2015 Argentina passed [Law 27191/2015](#), the National Support for the Use of Renewable Sources of Energy, which requires that by the end of 2021 at least 16 percent of Argentina's total electricity consumption originates from renewable sources and, by 2025, increases to at least 20 percent. In 2020, it accounted for 10 percent while in May 24, 2021 it reached 24 percent, the highest on record due to the combination of a peak in production and low electricity demand. However, most local analysts are skeptical that the 2021 threshold will be fulfilled due primarily to the lack of financing, low rates of new investment and the country's weak economic situation.



Source: FAS Buenos Aires with Argentine Government Data – excludes large hydropower

Renewable energy has attracted investment of more than \$5 billion in the past 5-7 years, in part thanks to the implementation of the Plan RenovAR, which facilitated the commercial production of power from wind, solar and biomass. Argentina is developing wind power and solar power in many areas, but with a focus on wind in southern Patagonia and solar in the northwest and west of the country.

In addition, the Ministry of Agriculture has a program called Probiomasa designed to encourage clean energy production through renewable energy tenders for small and medium sized bioenergy operations of biogas and biomass. This program receives technical and administrative assistance from the FAO (Food and Agriculture Organization/UN). This program is projected to end in December 2021 but a second round could replace it and be extended for a few more years. Its main focus will be on energy produced from agricultural crops, forest, and industrial waste.

The Biofuels Law 26093/2006, which mandated the initial obligatory mix of a five percent blend of ethanol in gasoline and five percent blend of biodiesel in diesel in 2010, was also an important part of the country's efforts to reduce GHG emissions. This goal was largely met on schedule for biodiesel but lagged for three years for ethanol. The Biofuels Law expired in May 2021 and was replaced by the new biofuels Law.

In January 2008, Congress passed [Law 26334/2007](#), which promoted the production of bioethanol from sugarcane. This law allowed sugar mills to participate under the biofuel promotion regime, maintaining the basic norms and regulations of the biofuels law.

The promotion of biofuels is also ongoing at the provincial level. The Province of Santa Fe, where 80 percent of the nation's biodiesel is produced, passed Law 14,010 in October 2020 which promotes the use of biofuels (biodiesel, bioethanol, pure and mixes). It encourages biofuel usage in the farm sector, transportation, logistics, governmental fleets, heat and power, and bunker use. The law still lacks many implementing regulations. Since 2019, the largest city in Santa Fe Province, Rosario, has run approximately 1,000 city buses on B100 with encouraging results. The Province of Cordoba, where most bioethanol from corn is produced, passed Law 10,721 in November 2020 to encourage the production and consumption of biofuels and bioenergy. As in Santa Fe, it promotes the use of bioethanol and biodiesel produced in small on-farm plants and also supports the large-scale use of biofuels in industry, transportation, and official vehicles. Several similar bills have been proposed in the Province of Buenos Aires, but so far they have not passed the provincial legislature.

At the national level, some ministers of the new Fernandez government have expressed interest in using electric motors and compressed natural gas (CNG) in public transportation. Increased CNG usage would align with government efforts to expand investment and production of the Vaca Muerta, one of the world's largest non-conventional oil and gas reservoirs. President Fernandez has publicly expressed his commitment to the development of Vaca Muerta and has shown his support through policies to encourage the continuity of new investment. The government has lately also signaled an interest in developing a green hydrogen fuel industry.

Argentina does not have specific environmental or social/economic sustainability criteria for biofuels. However, as the country is a major exporter of biodiesel, the criteria and regulations of other markets are closely monitored for export compliance. This is the case for the EU's second Renewable Energy Directive (REDII) and US Environmental Protection Agency (EPA) rulemaking. CARBIO, the Argentine Chamber of Biodiesel, produced a voluntary certification scheme and biodiesel exports are accompanied by certificates granted by the International Sustainability and Carbon Certification system (ISCC) or the French 2BS biomass biofuel voluntary sustainability scheme.

Mandates, Official Prices and Taxes Since 2007

A) Blend Mandates

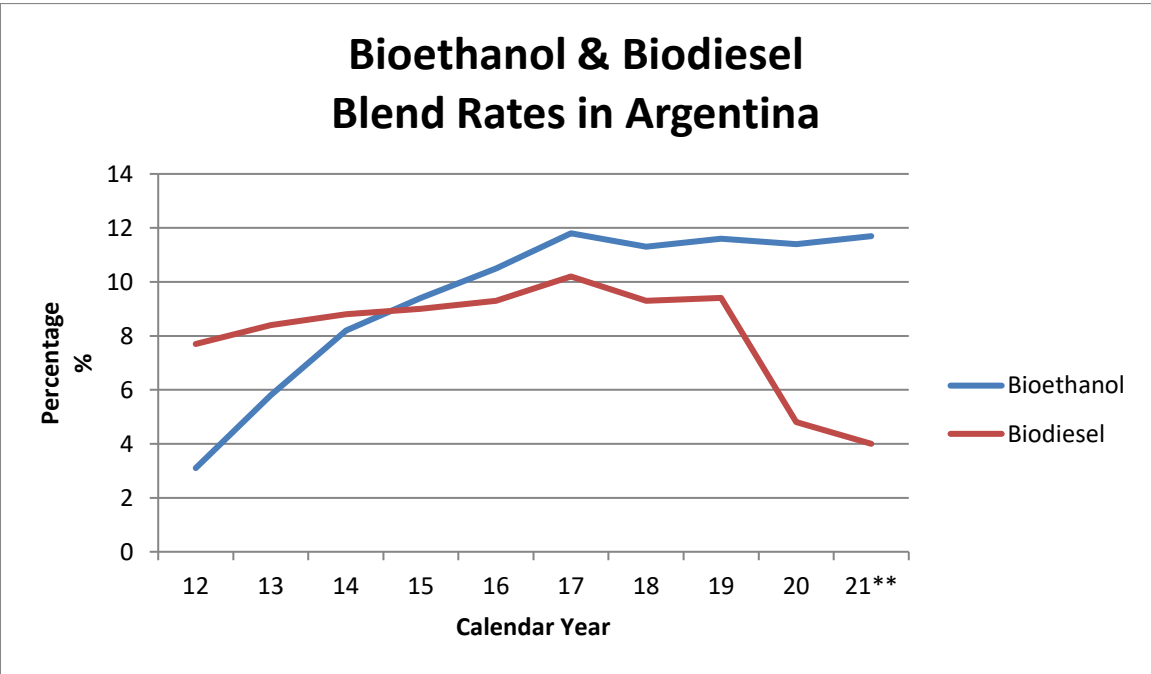
The new Biofuels Law 27640 passed in July 2021, maintains a 12 percent rate for bioethanol and the even split between corn and sugarcane, but gives the Energy Secretariat to reduce the blend rate to 9% if economically necessary, and all reductions are to be taken from the share provided by corn ethanol. For biodiesel, the blend rate is reduced from 10% to 5% with additional flexibility provided to reduce the blend rate to 3% if deemed necessary.

In the past, Argentina has had variety of blend rates based on prevailing laws and regulations which are described below. The prior Biofuels Law (26093/2006) which recently expired, had mandated a blend rate of 12 percent for bioethanol (evenly split between corn and sugarcane derived ethanol) and 10 percent of biodiesel.

In January 2021, the Secretariat of Energy, through Resolution 1/2021, dictated that the blend rates for biodiesel for the following months were: 5 percent in January, 6.7 percent in February, 8.4 percent in March, returning to 10 percent in April. The justification for this measure was to minimize at the pump the higher price of diesel.

In April 2016, Resolution 37 raised the minimum blend to 12 percent bioethanol and 10 percent biodiesel. In the case of bioethanol, the additional 2 percentage points had to be supplied by the sugar industry. Shortly afterwards, the grain and the sugar industries were required to divide equally the total supply of bioethanol to gasoline distributors.

In January 2010, with the first Biofuels Law in place, Argentina mandated 5 percent bioethanol in gasoline and 5 percent biodiesel in diesel. This ethanol mandate was increased to 9 percent in January 2014 and 10 percent in February 2014. At the same time, a 10 percent biodiesel blend requirement was added for power generation plants technically able to use a biodiesel blend but it was never enforced and so far very little has been used in this sector. The new biofuels law does not specify if power generation plants will have to use biodiesel. Most contacts expect this to be clarified in the implementing regulations.



Source: FAS Buenos Aires
** 2021 Projection

B) Official Prices

The new biofuels law passed in July 2021 gives the Secretariat of Energy the authority to determine official prices under the mandate which blenders have to pay biofuels producers, taking into consideration input costs and a given profit. There are no implementing regulations published yet.

Since the implementation of the original biofuels mandate in 2010, the formulas established for setting official prices of bioethanol and biodiesel under the mandate have undergone several changes. Further, in many periods, the government fixed prices which did not follow established policies at the time. Please refer to past annual reporting for past history on biofuel price setting.

The official price of biofuels was not published between January-October 2020, which required industry to use the December 2019 price for any transactions. After an agreement between the different market participants the official biodiesel blend rate was lowered. The government published new and increased official prices for January 2021 through May 2021. In July 2021 the government published new official prices, as well as for June 2021, which remained unchanged from the previous month.

Table: Official Prices for Suagarcane Bioethanol, Corn Bioethanol and Biodiesel

Month/Year	Sugarcane Pesos/Lt	Sugarcane USD/Lt	Corn Pesos/Lt	Corn USD/Lt	Biodiesel Pesos/Lt	Biodiesel USD/Lt
Jul 2021	55.66	0.57*	55.66	0.57*	99.12	1.00*
Jun 2021	51.13	0.53	51.13	0.53	81.91	0.84
May 2021	51.13	0.53	51.13	0.53	81.91	0.85
Apr 2021	49.60	0.52	49.60	0.52	79.91	0.84
Mar 2021	48.70	0.52	48.70	0.52	79.63	0.85
Feb 2021	47.80	0.52	47.80	0.52	76.89	0.84
Jan 2021	43.6	0.49	43.6	0.49	68.41	0.76
June 2020	29.80	0.42	29.80	0.42	39.05	0.55
June 2019	24.07	0.57	21.80	0.52	26.98	0.64
June 2018	18.00	0.63	15.16	0.53	17.25	0.60
June 2017	16.07	0.96	12.94	0.77	12.33	0.74
June 2016	12.77	0.84	11.87	0.78	10.42	0.69
June 2015	8.98	0.99	7.03	0.77	6.17	0.68
June 2014	8.61	1.06	8.61	1.06	6.54	0.80

Source: FAS Buenos Aires with data from the Argentine Under Secretariat for Fuels

* Estimated

C) Taxes

The recently passed Biofuels Law 27640 will continue with a similar tax treatment for biofuels as was in place prior to the expiration of the original biofuels law 26093/2006. In December 2017, the Argentine Congress passed the Tax Reform [Law 27430/2017](#), which among many changes, modified the tax structure of fuels and, for the first time, imposed a carbon tax on fossil fuels. Since March 2018, fuels have been subject to two taxes (compared to four previously): a tax on liquid fuels and a tax on carbon dioxide (with the objective of discouraging fossil fuels use and encouraging renewable energies). Biofuels, either pure or in fuel mix, were exempted.

Financial Supports for Producers and Consumers

Argentina does not provide direct incentives to biofuel producers. However, support is provided through other measures, such as tax rebates and reductions. Biofuels Law 26093/2006 provided tax incentives to encourage biodiesel and bioethanol production via the biofuels promotion regime for domestic use but, with a few exceptions, most companies were not able to take advantage of them.

One measure that supports biodiesel exports and/or biodiesel consumption in Argentina is the currently nominal 2 percent differential export tax on biodiesel relative to soybean oil. The effective differential is larger than 2 percent and is explained in the section below. The tax differences between the two commodities have fluctuated widely since the passage of the original Biofuels Law.

Import Policy Including Duties/Export Taxes and Levies

Pursuant to the recently passed Biofuels Law, only biofuels manufactured by Argentine producers may be used in filling the official mandate – which effectively prohibits biofuel imports by fuel blenders to meet the mandate mix – unless authorized by the Secretariat of Energy.

In October 2020, through Decree 790, the Argentine government modified the export tax scheme establishing that as of January 2021, the nominal export tax on biodiesel be 29 percent (22.48 percent effective tax) and 31 percent for soybean oil. The effective rate for biodiesel is lower because it enjoys a reduction granted to most manufactured products that is not provided to soybean oil and raw agricultural commodities.

Table: Recent Export Tax Changes on Biodiesel, Soybean Oil, and Soybean

MONTH	BIODIESEL % Export Tax*	SOY OIL % Export Tax	SOYBEANS % Export Tax
January 2021(Decree 790/20)	29.0 (22.5)*	31.0	33.0
March 2020	30.0 (23.08)	33.0	33.0

**Biodiesel export tax nominal terms, effective rate in parenthesis*

Source: Argentine Government

Table: Import/Export Taxes and Rebate Rates for Ethanol and Biodiesel (July 2021)

Product	Import Duty Extra Mercosur %	Import Duty Intra Mercosur %	Export Tax %	Export Rebate %
Ethanol (2207.10 & 2207.20)	20.0	0.0	4.5	1.25
Biodiesel, <B30- 100 (3826.00)	14.0	0.0	29	0.0
Biodiesel, B1-B30 (2710.20)	0.0	0.0	12	0.0

Note: Applicable HTS codes in parenthesis

Research Initiatives/Alternative Energy Policies

There are few entities/organizations in Argentina involved in biofuels and non-conventional energy research. INTA, the National Institute of Agricultural Technology, is the leading research body in this field. The Institute is member of Babet-Real5, a European Union funded program, which focuses on the research of second-generation ethanol on small scale plants. Argentina's research focused on the use of sugarcane as feedstock. INTA has also been researching biodiesel, bioethanol and biogas technology and on carbon and water footprints and energy balances. The Estacion Experimental Obispo Colombres, located in Tucuman province (the main sugar province in Argentina) has several lines of research under their bioenergy program, with a strong focus on the sugarcane/sugar industry. Lastly, Y-Tec is the research arm of the state-owned oil company YPF which controls more than 60 percent of the domestic fuels market. Y-Tec is collaboration between YPF and Conicet, the national science and technology agency. Y-Tec's focus is energy research, including renewable energy and sustainability. One of the large biodiesel plants in Rosario has invested in research and production of high-quality biodiesel derived from sewage. The company recently developed a second-generation biodiesel through a process called RAUPE (Renewable Advanced Unique Premium Energy), with the support of the Ministry of Science and a public university. A small volume of this special biodiesel was exported last year to the EU and Brazil.

Trade Agreements

In late June 2019 after 20 years of negotiations, the European Union and Mercosur reached a trade agreement that appears to allow duty free exportation from Mercosur countries of about 570 million liters of ethanol for industrial use and 250 million liters of ethanol for fuel use at a nominal import tariff rate and not the EU's high MFN duty rates for undenatured and denatured ethanol. Implementation would take place gradually over 6 years. Mercosur members will negotiate the quota distribution, with Brazil expected to take the largest portion, followed by Argentina and Paraguay. For biodiesel, the local industry expects that the agreement reached in early 2019, by which Argentina exports biodiesel to the EU under a quota and at a minimum price, will remain over the next four years. However, two years after the agreement was signed, procedural steps needed for implementation appear to be moving slowly, according to publicly available reporting. New obstacles, especially related to environmental concerns in the EU about deforestation in Brazil have slowed the process.

COVID-19

Policy and programs on biofuels were not explicitly altered as part of the government's response to the COVID-19. The overall decrease in 2020 and 2021 of bioethanol and biodiesel production and consumption is the result of reduced demand for fuels due to stay-at-home orders that reduced mobility as well as the significant economic downfall in 2020. Partial recovery is expected in 2021. Gasoline pool sales in 2021 are forecast at 8.4 billion liters, similar to the level of 2015-2016 with a blend rate expected to remain high at 11.7 percent. Diesel sales in 2021 are forecast at 12.6 billion liters also similar to that of 2015-2016. However, the blend with biodiesel in 2020 and 2021 is expected to be about half of what it was in the period 2015-2019 which ranged between 9-10 percent. This was the result of a lack of compliance with the

official mandate and delays in updating the official price which is discouraging producers from delivering fuel. While reduced demand is negatively affecting the biofuels sector, its structural problems, mentioned above, existed prior to COVID-19, and are related to the different governments' views of biofuels and fuel market policy and the country's general economic situation.

Impacting Fuel Pool Size through Incentives/Disincentives Targeting Demand

Other than the policies mentioned earlier in the report, the government does not take additional action to build demand for biofuels. In fact, as described the recently passed biofuels law will reduce local demand for biofuels in the name of reducing fuel costs for consumers. Switching fuel to higher ethanol or biodiesel blends, E100 or B100 or electricity remains very limited.

For now, there are no new initiatives to incorporate energy efficiency standards in new vehicles and machinery. The introduction of hybrid or electric cars so far is negligible, though there are some minor tax incentives in place. Argentina is not considering adopting a flex fuel market as exists in Brazil, despite Argentina being an important manufacturer and exporter of flex fuel cars for the Mercosur region. Diesel demand will grow at higher rates when Argentina's economy stabilizes as there are limited alternative modes of transport to trucking in the commercial sector. Freight railroad capacity is slowly expanding, primarily in tracks going north and west from Buenos Aires and the ports near Rosario.

At the Leaders' Climate Summit on Earth Day last April, President Alberto Fernandez, announced that Argentina would begin to focus on the production, consumption and exports of green hydrogen. So far though, limited progress has been made and contacts indicate that more concrete policy is needed to encourage the necessary investment.

Argentina has been working in the past years to regain energy self-sufficiency by increasing domestic production of oil and gas and power generation from new renewable energy plants. However, it has not yet taken significant steps to improve energy efficiency standards for light and heavy-duty vehicle fleets. In 2021, Argentina is forecast to use 1 billion liters of diesel for power generation, 150 million liters greater than in 2020. Biodiesel is practically not used in this sector.

By the end of 2020, Argentina had 14.6 million vehicles with an average age of almost 12 years. Roughly, 82 percent were cars and the balance trucks and buses. Among the total, almost 74 percent were gasoline powered, 25 percent were diesel, and the remaining operated on compressed natural gas (most of which can also use gasoline). A mere 4,600 hybrid cars and 110 electric cars were in use in Argentina constrained by limited availability of recharging stations and higher purchase prices.

III. Fuel Ethanol

Ethanol Used as Fuel (Million Liters)										
Calendar Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021f
Beginning Stocks	0	0	0	0	0	0	0	0	0	0
Fuel Begin Stocks	36	48	45	53	64	44	72	126	136	181
Production										
Fuel Production	250	472	671	815	890	1,105	1,113	1,073	809	980
Imports										
Fuel Imports	0	0	0	0	0	0	5	0	0	0
Exports										
Fuel Exports	0	0	0	0	0	0	0	0	0	0
Consumption										
Fuel Consumption	238	475	663	804	910	1,077	1,064	1,063	764	980
Ending Stocks										
Fuel Ending Stocks	48	45	53	64	44	72	126	136	181	181
Refineries Producing Fuel Ethanol (Million Liters)										
Number of Refineries	9	11	12	14	14	14	17	22	22	22
Nameplate Capacity	600	680	880	950	950	1,200	1,300	1,440	1,555	1,640
Capacity Use (%)	41.7%	69.4%	76.3%	85.8%	93.7%	92.1%	85.6%	74.5%	52.0%	59.8%
Co-product Production (1,000 MT)										
DDGS (wet-dry)*	15	125	280	360	370	415	470	450	345	390
Feedstock Use for Fuel Ethanol (1,000 MT)										
Corn**	49	400	890	1,150	1,175	1,325	1,500	1,450	1,020	1,225
Molasses***	935	1,240	1,220	1,365	1,708	2,250	2,150	2,110	1,565	1,910
Market Penetration (Million Liters)										
Fuel Ethanol Use	238	475	663	804	910	1,077	1,064	1,063	764	980
Gasoline Pool 1/	7,774	8,158	8,066	8,520	8,629	9,137	9,453	9,176	6,698	8,400
Blend Rate (%)	3.1%	5.8%	8.2%	9.4%	10.5%	11.8%	11.3%	11.6%	11.4%	11.7%

Note: 1/ Includes all biocomponents (biofuels) like ethanol and ETBE as well as MTBE if used.

f = forecast

Source: Private and Secretariat of Energy data

* On a dry basis, although some plants sell in different proportions wet distiller's grains

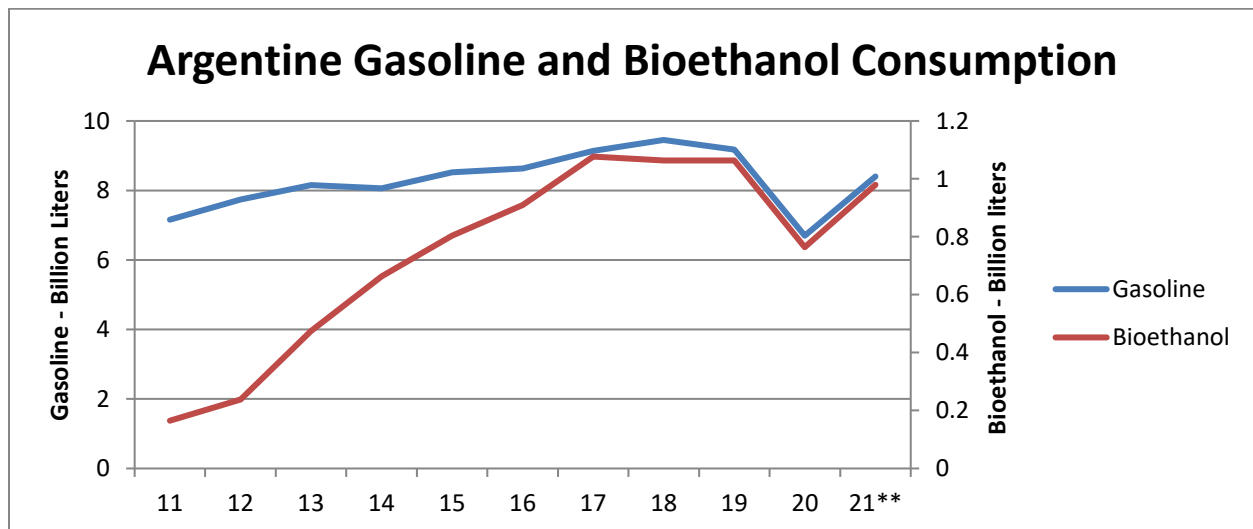
** 1 MT of corn yields 417 liters of ethanol

*** Sugar mills mostly use molasses but also can use sugarcane or convert sugar. To simplify, we assume only molasses is used with a conversion rate of 1 MT of molasses yields 246 liters.

Consumption

Consumption of bioethanol in 2021 is projected up at 980 million liters, a 28 percent rebound from last year's low pandemic-induced level. Still, this would be the lowest volume since 2017, closely following gasoline sales as the blend ratio is expected to be 11.7 percent, similar to the past four years. After falling 9.9 percent in 2020, Argentina's GDP in 2021 is expected to recover 6.3 percent. The local economy continues to face headwinds, with private analysts projecting annual inflation of 48 percent for the rest of 2021. The new biofuels law gives the government more flexibility to manage the blend rate with a minimum of 9 percent (6 percent from sugarcane and 3 percent from corn). Based on official data, oil companies purchased 336 million liters of bioethanol in the first four months of 2021, of which 48 percent was supplied by the sugarcane sector and the balance from the corn sector.

The following chart shows Argentine gasoline and bioethanol consumption during the period 2011-2020 and the projection for 2021:



** Post forecast

Bioethanol is all ethanol used as fuel. Gasoline pool includes all blended ethanol.

Source: FAS with Secretariat of Energy and International Energy Agency

Contacts indicate that the local automobile industry and oil companies are comfortable with the current mandated blend rate of 12 percent as it has been in place several years now and there were no problems with engines and gasoline quality improved. However they oppose higher blend rates. In particular oil companies do not want to lose additional market share against biofuels.

Production

Bioethanol production for 2021 is estimated at 980 million liters, 170 million liters higher than in 2020. This is as a result of expected larger gasoline sales after last year's drop in consumption due to the economic decline precipitated by COVID-19 pandemic and public health measures taken by the Argentine government, including a blend rate with gasoline is projected to remain high, similar to the range seen over the past 4 years which varied between

11.3-11.8 percent. The sugarcane and corn industries are expected to produce equal volumes of bioethanol this year.

In the past several years, the bioethanol sector suffered many unexpected rule and policy changes. The most challenging issue has been the revision delays in the official price, which in many cases was not updated for several months at a time in Argentina's highly inflationary economy. The price setting formula was also modified on several occasions. The recently passed Biofuels Law 27640 was supported by the sugarcane sector which was able to lock in its market share until 2030. In contrast, the corn ethanol sector will bear the brunt of all future reductions in blend rate should that occur, with reductions in the volume of corn ethanol blended by as much as 50% relative to the prior mandate. The details of future implementing regulations that will be issued under the new law will be critical to the future of the corn ethanol sector.

The main drivers of bioethanol production are the official blending mandate for the domestic market and the size of that market as bioethanol exports are quite limited given Argentina's small exportable surplus, logistical limitations and a very competitive global bioethanol market. Local analysts believe that the new biofuels law will limit future major investment in the sector. Further, depending on how the government administers quotas, blending and official prices, industry contacts fear that a few processors may be forced to operate just a few months a year. This would be especially true in the corn ethanol sector which has 2 large scale operators which recently expanded capacity, anticipating larger gasoline consumption and an increase in the official blend rate which did not occur.

In 2021, Argentina has 22 bioethanol plants operating, with a total production capacity estimated at 1.64 billion liters. Based on the projected production, the capacity use this year will be close to 60 percent, higher than in 2020, as a result of larger demand despite a small increase in capacity. In the sugarcane sector there are 15 sugar mills in Tucuman, 3 in Jujuy and 2 in Salta province. In total they operate 12 dehydrators and 16 distilleries. Mills normally produce ethanol during the sugarcane harvest (May-October) and continue to produce a few more months once it is over. They normally keep stocks to deliver ethanol during the first months of the year until the new harvest begins. These plants utilize molasses/sugarcane as feedstock and their ethanol production varies depending primarily on sugarcane availability, and the price of bioethanol vis-à-vis the price of sugar for export. There are 5 medium to large scale bioethanol plants which use corn as feedstock and 5-10 very small ones, most of which are owned by large farmers who combine them with cattle production. Argentina is one of the world's three most important corn exporters, with record production and exports forecast in marketing year 2021-22. The availability of feedstock should not be an issue.

Based on industry sources, the current official price of bioethanol (set prior to passage of the new biofuels law) barely covers the cost of production for plants using corn as world prices are high. Returns in the sugarcane sector are better. There is a wide dispersion of profitability among producers depending on when investments were made.

Corn ethanol plants produce dry and wet distiller's grains. Although it varies, based on market conditions, roughly half is sold in each form. These companies have contracts to deliver distiller's grains, CO₂ and corn oil which in some cases are exported. Wet distiller's grains are

normally distributed in an area no larger than 100 kilometers from the plants, while dry product is sold more widely and small volumes are exported to neighboring countries. The main consumers are feedlots, dairies, and poultry producers.

Trade

Argentina has always imported and exported ethanol for industrial use, although it is difficult to determine the final use of ethanol exports. Both past and present Biofuels Laws dictate that bioethanol used to fulfill the blending mandate must be produced in plants established in the country and therefore, imports of ethanol for fuel have to be specially authorized by the Secretariat of Energy.

No fuel ethanol imports are expected in 2021 as Argentina will have an oversupply of feedstocks (especially corn) and processing capacity to meet the mandate plus some exports. Argentina normally imports ethanol for industrial use and some beverage ethanol. Most of the product is un-denatured (hydrous) shipped under HTS 2207.10, but denatured ethanol is also imported (HTS 2207.20), generally in very small volumes. Argentine imports of ethanol totaled 2.6 million liters in 2020, the lowest since 2015. The vast majority was sourced from Bolivia and Brazil.

IV. Biodiesel

Biodiesel (Million Liters)										
Calendar Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021f
Beginning Stocks	20	55	24	44	59	52	102	27	28	98
Production	2,800	2,270	2,935	2,060	3,020	3,260	2,760	2,440	1,315	1,540
Imports	0	0	0	0	0	0	0	0	0	0
Exports	1,770	1,296	1,815	895	1,847	1,875	1,585	1,147	675	1,100
Consumption	995	1,005	1,100	1,150	1,180	1,335	1,250	1,292	570	500
Ending Stocks	55	24	44	59	52	102	27	28	98	38
Production Capacity (Million Liters)										
Number of Biorefineries	33	36	38	38	38	37	36	36	33	33
Nameplate Capacity	4,000	4,550	5,200	5,200	5,400	5,000	5,000	5,000	4,430	4,430
Capacity Use (%)	70.0%	49.9%	56.4%	39.6%	55.9%	65.2%	55.2%	48.8%	29.7%	34.8%
Feedstock Use (1,000 MT)										
soybean oil	2,460	2,000	2,600	1,820	2,670	2,870	2,430	2,150	1,160	1,360
Market Penetration (Million Liters)										
Biodiesel, on-road use	995	1,005	1,100	1,150	1,180	1,335	1,250	1,292	570	500
On-road, Agriculture, Construction & Rail 1/	12,959	12,025	12,440	12,823	12,644	13,112	13,394	13,730	11,930	12,600
Blend Rate (%)	7.7%	8.4%	8.8%	9.0%	9.3%	10.2%	9.3%	9.4%	4.8%	4.0%
Diesel Pool, total 1/	14,776	14,615	14,234	15,053	15,025	14,512	14,269	14,133	12,783	13,600

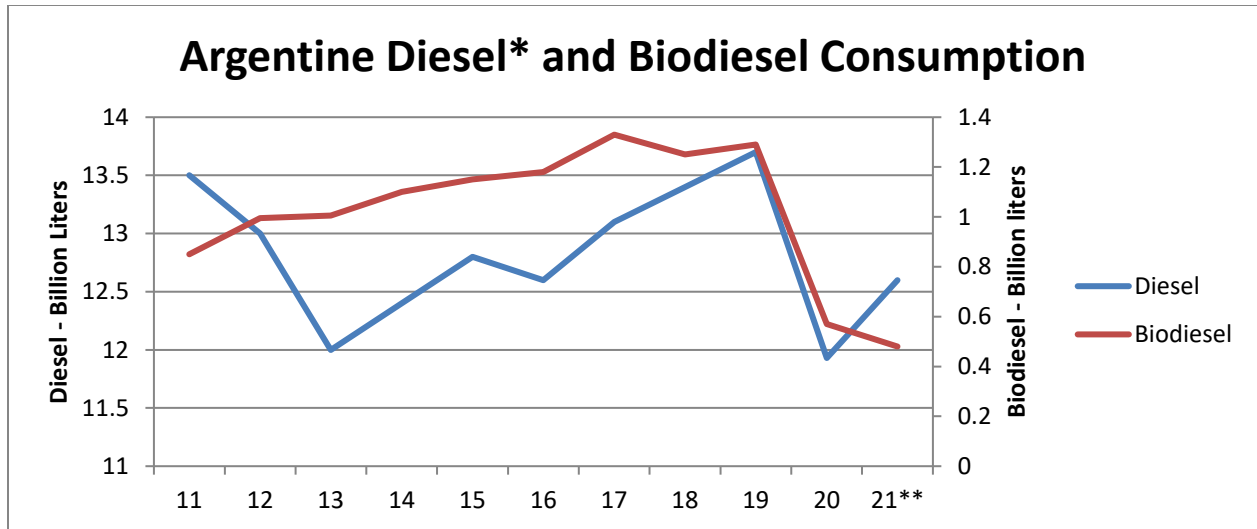
Note 1/ Fuel pools are defined as fossil fuels plus all "bio-components" (biofuels) blended with fossil diesel.

f = forecast

Source: Private estimate based on official data from Secretariat of Energy

Consumption

Biodiesel consumption for 2021 is projected at 500 million liters, the lowest volume since the first Biofuels Law was put in place in 2010. The four main reasons are: 1) Resolution 1/2021 published by the Secretariat of Energy in January 2021 which reduced the blend rate below the established 10 percent in the first three months of the year, 2) official biodiesel prices which did not reflect higher world soybean oil prices, 3) low diesel consumption due to the economic recession in Argentina, and 4) the coming implementation of the new biofuels law which is expected to lower the biodiesel mandate to 5 percent in the last part of 2021.



* All Surface Transportation

** Post forecast

Source: FAS with Energy Secretariat and International Energy Agency

The biodiesel blend rate in 2021 is estimated at 4 percent. Consumption in the first half of 2021 is estimated at 220 million liters, with an average blend rate between 3-4 percent. Contacts indicate that sales of biodiesel in May and June were close to 23 million liters each, suggesting only a 2 percent blend. With high soybean oil prices and several months where official prices were not updated, producer margins were negative forcing several small and medium companies to stop delivering biodiesel. Sales in the domestic market in the last part of 2021 are expected to increase as most market participants believe the implementation of the new law will bring some more certainty and better official prices of biodiesel than the past several months.

The consumption of on-road, agriculture, construction and rail diesel (including biodiesel) in 2021 is forecast at 12.6 billion liters, higher than in 2020 but still well below 2019 pre-pandemic levels and similar to the volume of 2016. The country continues to be affected by a long economic recession magnified by the negative effects of the COVID-19 pandemic. Private economists project GDP growth of 6.3 percent and inflation at 48 percent for 2021.

The biodiesel blend rate during the period 2015-2019 ranged between 9-10 percent. In 2020 it dropped to 4.8 percent due to COVID-19 pandemic and the lack of updates to the official price for almost the whole year. With the recent passage of the new biofuels law, which still lacks the implementing regulation, the mandate mix for biodiesel will be 5 percent, though it could drop as low as 3 percent if the authorities determine it is needed in order to reduce diesel prices. The blend rate in place in May 2021 when the original biofuels law expired was 10 percent.

Biodiesel sales outside the mandate are tied to some provincial public transportation programs that promote the use of biodiesel at different blends, including B100, like in city of Rosario which has almost 1,000 public buses running on B100. These additional sales occur primarily in the Province of Santa Fe, where most of the country's biodiesel is produced. Volume is difficult to establish, but it ranges between 20-50 million liters a year.

Production

Biodiesel production for 2021 is forecast at 1.54 billion liters, up somewhat from the previous year due to stronger exports but still well below the 2019 pre-pandemic level and the second lowest level since 2010. Most market participants believe that the volume directed to the domestic market could continue to decline since the Energy Secretariat now has the authority to reduce the blend rate to 3 percent. The new blending range of 3-5 percent represents a cut of 50-70 percent from the prior blend mandate. Exports of biodiesel in 2021 are forecast at 1.1 billion liters, 425 million liters more than in 2020, offsetting partially the loss in the domestic market.

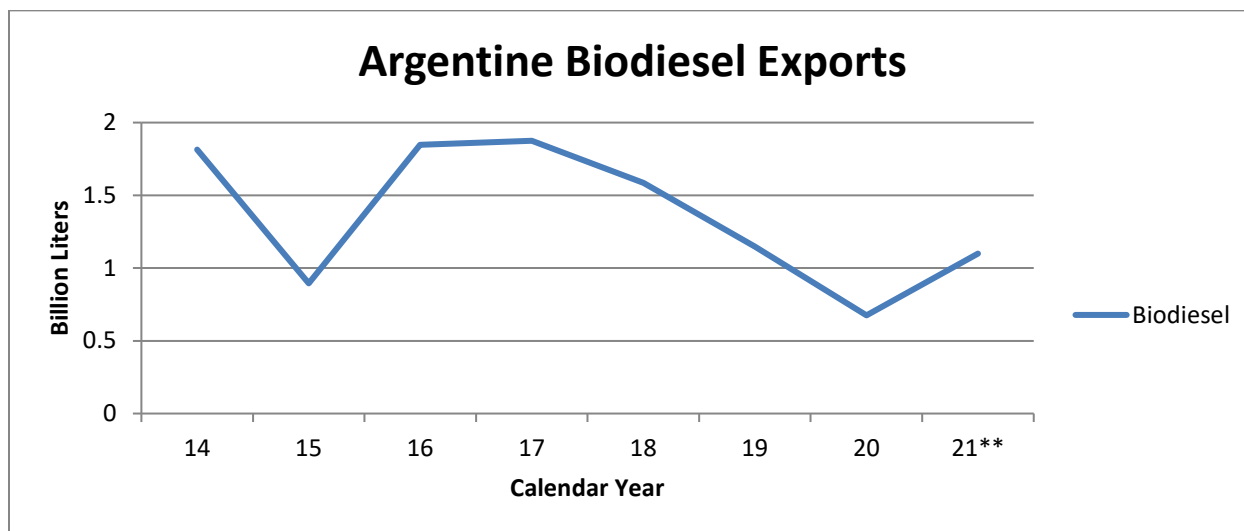
Argentina's biodiesel industry has 33 plants in operation in 2021, with a production capacity of 4.43 billion liters per year, practically unchanged from 2020. No new investments are expected in the industry which has enormous idle capacity, projected at 65 percent in 2021, the second highest in the past ten years. The largest ten plants focus almost exclusively on exports and have been operating at low capacity in recent years. They account for two-thirds of the country's total production capacity. Smaller plants focus on supplying the local official blend mandate and before 2020 they produced at high capacity. Their plant capacity ranges between 12-110 million liters per year. However, once the new biofuels law is implemented, their capacity use is expected to be significantly lower than the average of the past decade. Some analysts predict that several plants will close because they are unable to compete in the export market and will not be able to sell enough in the domestic market to continue operating.

Argentina is one of the world's largest soybean producers and exporters, and the largest soybean oil and meal exporter. Soybean oil is practically the only feedstock utilized by the local biodiesel industry. Most of the large biodiesel export plants are owned by the large vegetable oil crushers that export more than 90 percent of their production. Large external biodiesel demand helps reduce soybean oil supplies and support its price, but the future cut in the official mandate is expected to release 600-700,000 tons of soybean oil to the market relative to recent years. However, due to the lack of enforcement of the biodiesel blend mandate early in 2020, mid-year 2021 implementation of the new Biofuels Law 27640 will not result in a sudden change in soybean oil supply.

Trade

Biodiesel exports in 2021 are forecast at 1.1 billion liters, a similar volume to 2019, before the COVID-19 pandemic. Projections earlier this year were not as optimistic, but diesel demand in the EU, Argentina's primary export market, has outstripped projections and Argentine biodiesel export prices have been competitive in recent months. Some traders indicate that if biodiesel prices were to increase \$30-40 more per ton over the next few weeks, Argentina could ship enough to fill the annual quota of 1.36 billion liters. Argentine biodiesel exports normally slowdown in the last third of the year due to the cold weather in the northern European countries which use almost exclusively rapeseed oil biodiesel and renewable HDRD (aka. HVO) due to their superior cold-weather properties produced in the EU. Some exports to southern European countries like Spain or Italy could eventually be possible where winters are milder.

Exports in January-August 15, 2021, are estimated at 950 million liters. Exports are shipped entirely from ports near Rosario and, so far, were all directed to the Netherlands. Of the biodiesel exports in the first half of 2021, 79 percent were shipped by 5 large international grain companies and the remainder by 2 local grain companies. With the exception of 2020, 2021 would be the lowest volume of biodiesel exports since 2016. Exports of biodiesel to discretionary markets in Africa and elsewhere are not anticipated due to the large spread between diesel and soybean oil prices.



** Post forecast

Source: FAS Buenos Aires with TDM database

The European Union continues to be the main and practically exclusive market for Argentine biodiesel because the United States and Peru, once important markets, remain closed to Argentine biodiesel due to high retaliatory tariffs. In February 2019, the European Commission and Argentina agreed to an annual duty-free quota for biodiesel of 1.36 billion liters at a minimum import price based on Argentina's official FOB soybean oil price plus production costs and freight. Eight local biodiesel producers are authorized for export. Contacts indicate that Carbio, the Argentine Biofuels Chamber, distributes the annual quota among its members based on capacity and past export performance.

In May 2020, the US Department of Commerce completed its review of a request from the Argentine government and its biodiesel industry for changed circumstances based on a reduction in the differential export tax between soybean oil and biodiesel and the elimination of the differential export tax of 3 percentage points between soybean byproducts and soybeans. The US government subsequently announced its decision of no significant changes and reconfirmed the antidumping duty, at an average of 75 percent, and the countervailing duty, at an average of 72 percent. As a result, Argentina is not expected to export biodiesel to the United States until these duties expire in 2023 and as long as they are not extended at similarly high rates. Press reports indicate that the Argentine government officials hope to negotiate with the new administration of President Biden to resume biodiesel exports, which peaked at 1.68 billion liters valued at \$1.14 billion dollars in 2016.

Peru began importing Argentine biodiesel in 2012 to help meet its blend mandate. However, in 2016, Peru set anti-dumping and anti-subsidy duties on Argentine biodiesel imports which curtailed exports. In late 2018, Argentina filed a complaint at the WTO. Exports were suspended in February 2018 and most likely will not resume in 2021.

As in past years, biodiesel imports are not expected due to huge idle capacity and the need for a special authorization required from the Secretariat of Energy. The biofuels law mandates that biodiesel feedstock must be sourced from local processors.

V. Advanced Biofuels

There is no production of hydrogenation-derived Renewable Diesel (HDRD) or Sustainable Aviation Fuel (SAF) in Argentina. In both cases there has been some talks about possible projects, but most contacts indicate that given the lack of policy support and the country's economic condition such investment will not occur in the near term.

A large biodiesel plant in Rosario is starting to produce high quality biodiesel derived from sewage. It developed a second-generation biodiesel through a process called RAUPE (Renewable Advanced Unique Premium Energy) together with the Ministry of Science and a public university. This is the only commercial development known to date of advanced biofuels in Argentina.

Attachments:

No Attachments