

Required Report: Required - Public Distribution

Date: June 10, 2023

Report Number: CO2023-0013

Report Name: Biofuels Annual

Country: Colombia

Post: Bogota

Report Category: Biofuels

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Report Highlights:

In 2023, ethanol production is forecast to recover to 380 million liters due to better weather conditions. In 2022, ethanol production decreased as adverse weather conditions and high sugar prices led to local producers prioritizing sugar production. Biodiesel production is forecast to continue growing in 2023 to 780 million liters. Colombia's economy is projected to grow at a slower pace in 2023, which with increasing gasoline prices due to the gradual removal of government subsidy, will restrict more substantial growth in fuel consumption. Fuel ethanol imports are forecast at 80 million liters assuming the ethanol blend mandate continues to increase in the second half of the year. U.S. ethanol exports entering Colombia continue to face a countervailing duty of \$0.066/kg (\$0.052 per liter), originally put in place in May 2020 and extended for 5 years after the expiry review final result in March 2023. No biodiesel trade is expected in 2023. The biodiesel blend mandate will continue at B10.

Section I. Executive Summary

Colombia's biofuels strategy is rooted in two key laws: Law 693 of 2001 for ethanol and Law 939 of 2004 for biodiesel. The Colombian government tightly controls the Colombian fuel market. The Ministry of Mines and Energy (MME) has the authority to establish biofuel blend mandates, regulate fuel and biofuel prices, and set technical regulations on biofuel standards. Despite President Petro's statements that Colombia should move to clean energy sources, and reduce its consumption of fossil fuels, Post does not expect any significant modifications to Colombia's biofuels policy.

In 2023, Colombia's gasoline and diesel consumption are estimated to increase slightly per the country's economic projected growth. Marginally larger fossil fuel demand, along with better weather conditions that will materialize in the second half of 2023, will boost raw material production for ethanol and biodiesel. Colombia's sugarcane-based ethanol production and palm oil-based biodiesel production are estimated to increase to 380 million liters and 780 million liters, respectively. While adverse weather conditions in 2022 affected sugarcane production, it was beneficial for palm-oil production.

Since 2005, when Colombia's implementation of its biofuel blend mandate started, multiple changes have been implemented. Since 2021, the Colombian government has decreased its biofuel blend mandate from ten percent ethanol (E10) to lower levels, fluctuating between four to six percent ethanol (E4-E6). Most recently, the MME issued a draft regulation allowing voluntary blend mandates between 0 and 7 percent. Based on projected ethanol production, ethanol imports, and gasoline consumption, the average ethanol blend in the country will be at 5.7 percent in 2023. Biodiesel production and diesel consumption data suggest that the average biodiesel blend rate in Colombia will be at 10.0 percent in 2023 and thus relatively stable as it has remained for most of the past decade.

If the ethanol blend mandate increases in the second half of 2022, and favorable market conditions – such as international prices, exchange rate, and local administered price – remain, fuel ethanol imports are estimated to increase to 80 million. The countervailing duty (CVD) on U.S. ethanol imports into Colombia that was imposed in 2020, was extended for five years in 2023 after a Colombian government expiry review that concluded in March 2023, which has had an impact on ethanol imports. The biodiesel market is open to imports, subject to compliance with quality standards and obtaining MME authorization. However, no biodiesel trade occurs since prices are not competitive enough.

As Colombia continues to navigate its energy transition, the biofuels sector will undoubtedly play a pivotal role in shaping Colombia's energy diversification strategy, rural economic development, and environmental sustainability goals.

Section II. Policy and Programs

Colombia's biofuel strategy originated from two laws ([Law 693 of 2001](#) for ethanol and [Law 939 of 2004](#) for biodiesel). These laws aim to strengthen the rural economy by introducing additional revenue streams for the sugarcane and palm oil industries. Furthermore, the strategy seeks to diversify Colombia's energy sources, curtailing dependence on fossil fuels, and mitigating greenhouse gas emissions, thereby aligning with the country's environmental commitments. The Ministry of Mines and Energy (MME) is the principal regulatory authority overseeing Colombia's biofuels policies, with a primary focus on prices and blend mandates. MME works with other ministries to design policies related to biofuels; [Decree 2328 of 2008](#) established an interagency commission on biofuels which includes the ministries of agriculture, environment, mines and energy, transportation, and commerce, and the national planning department. Colombia manages its biofuels market using a system of mandates, tax relief, environmental regulations, and price controls. Tax incentives have been in place since 2002, but the implementation of Colombia's mandates have changed over time and are not applied evenly throughout the country.

The new Colombian government, led by Gustavo Petro, took office on August 7, 2022 and has publicly stated Colombia should move to cleaner and greener energy sources. However, Petro's [National Development Plan \(NDP\)](#), which was signed on May 19, 2023, establishes government priorities and contains no significant modifications to Colombia's biofuels policy, except for Article 244 which includes the Ministry of Finance as a decision maker along with the Ministries of Mines and Energy, Agriculture, and Environment to establish biofuel blend mandates. The NDP also does not propose new incentives for renewable energy, and even proposes that non-conventional renewable generation plants that are located in areas with the highest average annual solar radiation (greater than 5 kWh/m²/day) and the highest average wind speed (greater than 4 m/s at 10m altitude) pay 6 percent of gross energy sales, up from 1 percent.

Renewable Energy and Greenhouse Gas (GHG) Emissions Policy

Colombia remains a regional leader on climate change ambition and seeks to play a pivotal role in advocating for carbon market and financing solutions that incorporate the unique needs of developing and climate-vulnerable countries. Since 2012, Colombia has been working on a Low-Carbon Development Strategy to identify and prioritize mitigation measures in different economic sectors.

Colombia's [Energy Transition Law](#), enacted in July 2021, established the government's commitment toward achieving its climate change objectives and achieving a net-zero national energy matrix. This law established green hydrogen and blue hydrogen as non-conventional renewable sources and maintains and extends existing tax incentives for projects generating energy from non-conventional renewable sources. Article 20 of this law establishes that the MME might encourage energy research and development that comes from organic sources (animal or vegetable origin), allowing Colombia to promote biofuels in the national energy mix and promote their consumption in the distribution chain of

liquid fuels. According to a government policy document called CONPES 4075 of 2022, in 2023, the MME will set a roadmap to consolidate the use of first-generation biofuels.

On December 22, 2021, former President Ivan Duque signed the [Climate Action Law](#) which institutionalizes Colombia’s Nationally Determined Contribution target of reducing GHG emissions by 51 percent from business-as-usual projections by 2030, defines measures to achieve carbon neutrality by 2050, and outlines steps to build climate resilience. This law contains nearly 200 specific actions, including achieving net zero deforestation by 2030, increasing the number of electric vehicles in circulation to at least 600,000 in 2030 (In 2022, Colombia had 21,579 electric vehicles and hybrid electric vehicles¹), reducing GHG emissions from agricultural activities, increasing the absorption of GHG through the promotion of agro-energy crops, and using biomass to produce biofuels and bioenergy.

The quality standards for ethanol used as fuel (i.e., water content, acidity, and conductivity) were established through resolution 789, issued in May 2016 and implemented in May 2018. Through resolution 182142 of 2007, MME issued the technical and safety requirements for the production, distribution, and import of biofuels used in diesel engines. The quality standards for biodiesel and fossil fuels were updated through resolution 40103 of 2021.

The Ministry of Environment and Sustainable Development published Resolution 1962, effective since December 29, 2017, that established a maximum carbon intensity value associated with the GHG inventory of denatured anhydrous ethanol fuel. The Colombian sugar-ethanol industry committed to reach a 20 percent reduction of GHG emissions since base year 2016. According to the Ministry of Environment, a 20 percent reduction by 2021 means that the calculations for the biofuel index quotient would set a value of 780 kg of CO2e/cubic meter (equal to 42.3 gCO2e/MJ) fuel ethanol.

Biofuel Blend Mandates

Backsliding on blend mandates across the nation when domestic feedstock supply is inadequate has led to stagnation in the Colombian ethanol market. Table 1 illustrates the changes in biofuels blend mandates since 2016.

Table 1: Average biofuel blend mandates in Colombia

Year	Ethanol	Biodiesel
2016	E8	B8 - B10
2017	E6 - E8	B9 - B10
2018	E10	B10
2019	E10	B12 - B6 - B8 - B10
2020	E10	B10

¹ [2022 Yearbook of the Automotive Sector](#), National Association of Sustainable Mobility (ANDEMOS), 2023.

2021	E10 - E4 - E7 - E4	B12 - B10
2022	E6	B11 - B10
2023	E4 - E5 - E4	B10

* 2023 only includes the biofuel blend mandates for the first half of the year.

Source: Ministry of Mines and Energy and National Biofuels Producers Association

The government has removed the biofuel blend mandates for periods of time due to a shortage of domestic production, even though imports could have supported sustained higher use. In March 2018, the Colombian government set the ethanol blend mandate at E10 and then in September 2019, the government set a biodiesel mandate of B12. These mandates, the highest ever established, were introduced to reduce levels of pollution in major metropolitan cities, contribute to Colombia's climate change commitments, and incentivize local production. These mandates applied to all areas except for three departments bordering Venezuela.

Since mid-2017, Colombia maintained the ethanol blend mandate between E8 and E10 in most of the country due to increasing ethanol imports and steady local production. However, on March 31, 2021, the Colombian government issued an emergency resolution to decrease the ethanol blend mandate from E10 to E4 starting on April 1, 2021. Since then, the ethanol blend mandate has not returned to E10, despite earlier timelines for returning to higher blends. These measures attributed the blend mandate change to inclement weather that impacted domestic production and increasing U.S. ethanol prices that discouraged imports, although Colombia also maintained their countervailing duty on imports of U.S. ethanol. The current effective measure, which was issued October 31, 2022, establishes an ethanol blend mandate that will remain at E4 from July to November 2023, then increase to E6 in December, E8 in January 2023, and finally E10 in February 2024. However, on May 30, 2023, MME issued a new draft resolution, allowing one-day for public comments, that establishes temporary measures that allow voluntary ethanol blend mandates between 0 and 7 percent nationwide (except for the department of Nariño and Cauca). Although this draft measure opens the door for higher ethanol rates, it also continues an inconsistent policy with respect to blend rate decisions.

Despite increasing the biodiesel blend mandate to B12 in September 2019, after only 20 days, Colombia decreased it again due to lower domestic production of palm oil. A resolution established that the biodiesel blend mandate would decrease to B2 by the end of September 2019 and gradually increase again to B10 in December 2019. On April 9, 2021, the Colombian government issued a resolution to increase the biodiesel blend mandate from B10 to B12 starting in April 2021 throughout most of the country. However, on December 29, 2021, the biodiesel blend mandate decreased to B11 in January 2022 and to B10 in March 2022. Since then, the biodiesel blend mandate has remained at 10 percent.

The Ministry of Mines and Energy has issued some regulations to promote biodiesel use in other sectors such as the mining and marine sectors. Through resolution [40188 of 2019](#), the MME established a 5 percent biodiesel rate for transportation cars used for mining activities. MME's [resolution 40111 of](#)

[2021](#) established a voluntary rate up to 2 percent of biodiesel to blend with marine diesel from April 2021. There is also a pilot program regulated through [resolution 40178 of 2020](#) that allows higher than 20 percent (B20) voluntary blend rates for biodiesel use in cargo transportation vehicles. It is estimated that nearly 1,200 trucks are part of this program implemented primarily in Antioquia department and other central region departments of Colombia.

Tax Policy

Since 2002, to promote biofuel use and production, the government eliminated the value-added tax (VAT) for biofuels and exempted them from a global carbon tax on fossil fuels. In addition, ethanol blended with gasoline is exempt from local surcharge fees. The most recent tax reform (2022) amended the national carbon tax to include coal, which was not previously included in the 2016 tax reform, which applied to all other fossil fuels. The rate for each unit of fuel depends on the emission of greenhouse gases of each type of fuel and its volume or weight. Table 2 illustrates the current tax rates on fossil fuels and biofuels.

Table 2: Current fuel and biofuel tax rates in Colombia (in Colombian pesos)

Tax	Gasoline	Diesel	Biofuels	Regulation
Global tax	\$663.16 per gallon on regular gasoline (~USD \$0.15)	\$634.74 per gallon (~USD \$0.14)	Exempt	Art. 167,168,173 - Law 1607 of 2012 Art. 218,219,220 - Law 1819 of 2016
Value added tax (VAT)	19 percent	19 percent	Exempt	Art. 183 - Law 1819 of 2016 Art. 477 - Estatuto Tributario (Biofuels exempt)
Carbon tax	\$169 per gallon (~USD \$0.04)	\$191 per gallon (~USD \$0.04)	Exempt	Dec. 926 of 2017 Art. 221, 222, 223 - Law 1819 of 2016
Local surcharge fee	25 percent of the reference price. Reference price for May 2023: \$7,279.42 per gallon (~USD \$1.60)	6 percent of the reference price. Reference price for May 2023: \$4568.42 per gallon (~USD \$1.01)	Exempt on ethanol blended with gasoline. There is no surcharge tax relief on biodiesel	Art. 117 to 121 - Law 488 of 1998
<i>Note: Values are in Colombian pesos (COP). Specific tariffs are valid for 2023 and updated on annual basis. Exchange rate used 1USD=4,540 COP, average exchange rate in May 2023</i>				

Source: Colombian Oil and Gas Information System ([SIMEC](#)), MME

Regulated Biofuel Prices

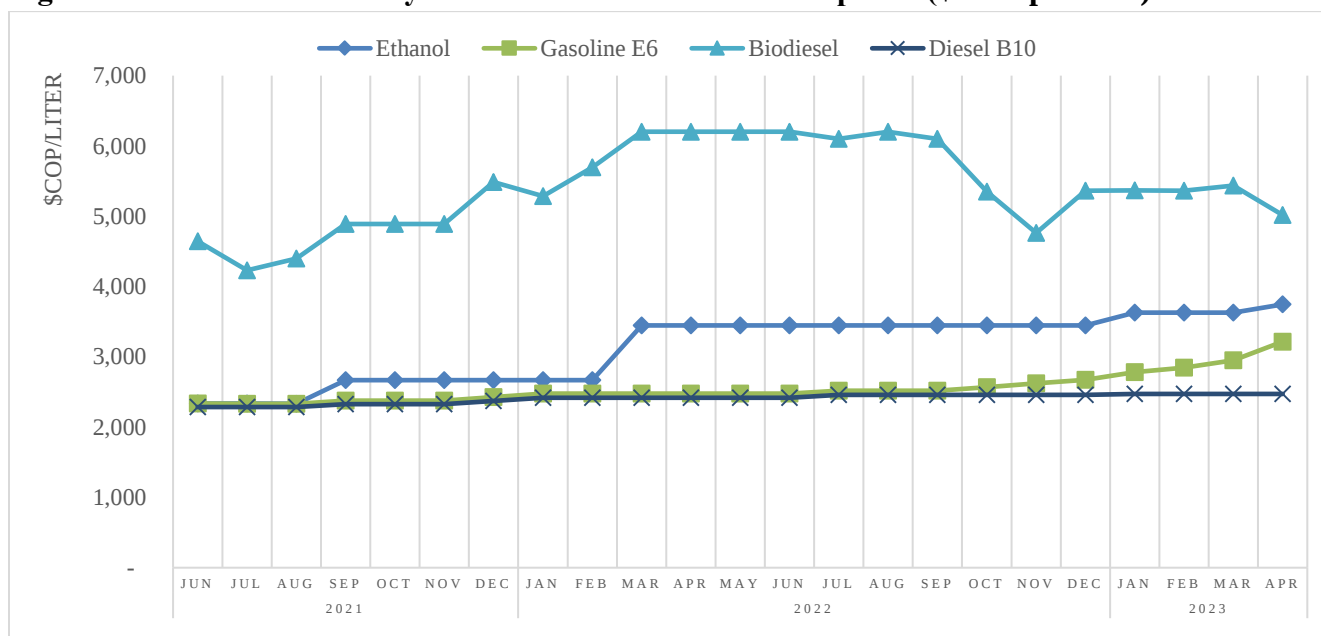
The MME periodically sets the price for gasoline and diesel at wholesale markets. These prices include the price that fuel distributors or blenders must pay to domestic producers of biofuels and are usually calculated based on a formula previously defined by MME resolutions. Reference fuel prices change across the country depending on the transportation and distribution costs of each region.

The fuel ethanol price methodology is established through MME's resolution 180643 of 2012. The formula indicates ethanol price should be the higher of the following two calculations: the opportunity cost of using refined sugar to produce ethanol (the international price equivalence for refined sugar at the London market) and the international price for gasoline adjusted by technical factors (increased octane and reduction on sulfur content). According to this resolution, the ceiling value is the price of gasoline in Bogota, Colombia's capital. However, given rising sugar and ethanol prices, in August 2021 the MME issued a resolution to temporarily eliminate the ceiling price of ethanol. This measure was taken to incentivize local production and imports permitting the ethanol blend mandate at lower levels. According to the MME, current ethanol prices are being established based on the import parity price of ethanol at the Houston or Chicago markets. If the ethanol price were calculated using the opportunity cost formula, it would be at \$19,753 Colombian pesos (COP) per gallon (\$1.15 per liter), 39.3 percent higher than the current administered price of \$14,178 COP per gallon (\$0.82 per liter), given high international sugar prices.

The biodiesel price methodology is established through MME's resolution 40400 of 2019. The biodiesel price is based on the import parity price of biodiesel. For biodiesel there is also a ceiling and floor price that depends on palm-oil prices.

The most recent MME mandated price for a liter of ethanol is approximately \$0.82 (\$3.12 per gallon), an 8.7 percent increase from the same period last year. For biodiesel, the most recent MME mandated price per liter is about \$1.10 (\$4.18 per gallon), a 19.1 percent decrease year-over-year. Figure 1 illustrates fossil fuel prices with certain biofuel blends as a reference and biofuel administered prices.

Figure 1: Colombia's monthly fuel and biofuel administered prices (\$COP per liter)



Source: Ministry of Mines and Energy and National Biofuels Producers Association.

In 2007, the Colombian government established the Fund for Stabilization of Fuel Prices (FEPC) to limit international fuel price fluctuations in the Colombian market. Therefore, increasing international fuel prices did not pass onto consumers in recent years. However, driven by high oil prices, Colombia's fuel subsidy fund is operating with a significant deficit resulting in the Petro administration's decision to gradually increase prices at the pump for gasoline since September 2022. Diesel prices remain subsidized as the government is cautious in raising these prices due to high inflation rates since most of the cargo within Colombia is transported by trucks.

Import Policy

Under the U.S. Colombia Trade Promotion Agreement (CTPA), Colombia's import duties covering HS 2207.10 (i.e., un-denatured ethanol) were immediately eliminated when the agreement entered into force in 2012. In the case of HS 2207.20 (i.e., denatured ethanol), the 15 percent base rate duty was removed in five equal annual stages beginning in 2012. Since 2016, U.S. denatured ethanol, which is the one fuel ethanol falls under, has zero duty under the CTPA.

In January 2019, Colombia's Ministry of Commerce, Industry and Tourism (MINCIT) initiated a countervailing duties (CVD) investigation on U.S. ethanol at the behest of the National Biofuels Producers Association (Fedebiocombustibles). On May 7, 2020, MINCIT issued a final ruling in its CVD investigation of U.S. ethanol, placing a \$0.06646/kg duty (or \$0.0526 per liter) on imports of ethanol from the United States until May 7, 2022. However, on May 4, 2022, MINCIT determined that another Fedebiocombustibles petition to review the existing CVD against U.S. ethanol imports had merit to justify launching a formal review.

On January 13, 2023, MINCIT issued its Essential Facts report of the expiry review, which argued that there is evidence of continued subsidies for U.S. ethanol, but no clear evidence that the current CVD improved the local ethanol industry's economic performance. The report calculated a recommended CVD of \$0.035/kg. However, on March 15, 2023, MINCIT ignored its own Essential Facts report and issued a final ruling in its CVD expiry review investigation of U.S. ethanol, extending the original investigation's \$0.066/kg (or \$0.0526 per liter) duty on imported U.S. ethanol for the next five years.

Regulations established that all biofuel importers must have MME authorization. As of April 2023, there are seven MME-authorized ethanol importers in Colombia.

There is no specific biodiesel import policy. The Colombian market is open to biodiesel imports without any regulatory restrictions, except for the compliance with quality standards and the MME authorization to be an importer. There is only one authorized biodiesel importer.

Section III. Fuel Ethanol

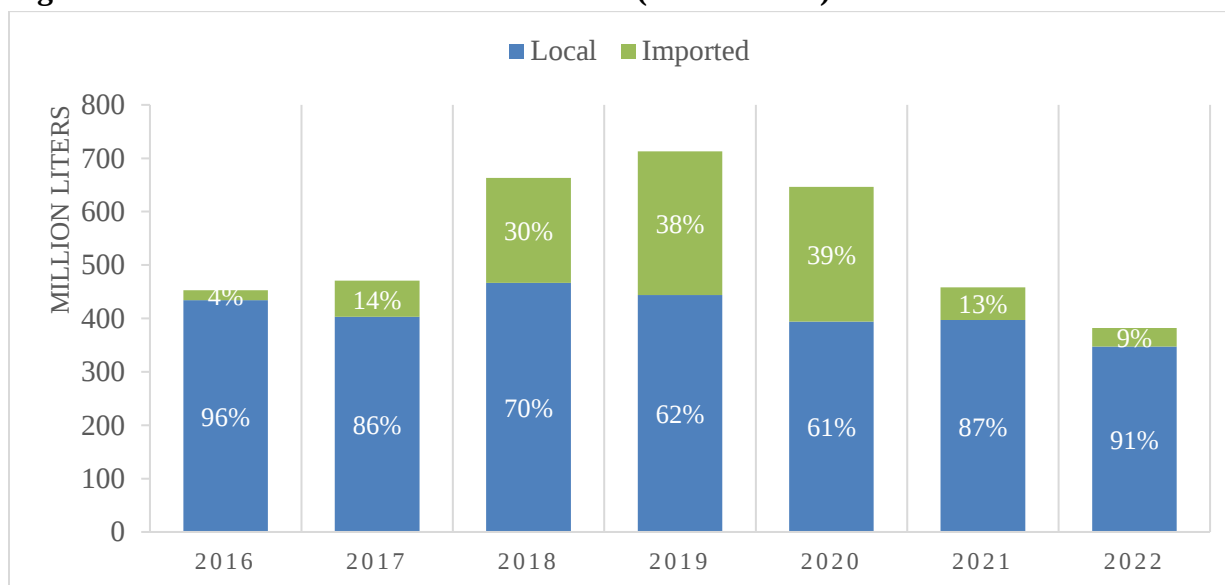
Consumption

In 2023, Colombia's fuel ethanol consumption is forecast to increase 18.0 percent year-over-year to 460 million liters, assuming a more stable ethanol blend mandate and recovery of ethanol production and imports. In 2022, despite increased gasoline demand, fuel ethanol consumption decreased 8.2 percent from the previous year estimate of 425 million liters to 390 million liters as the Colombian government did not reimpose ethanol blend levels as planned, ethanol production was lower, and ethanol imports decreased more than expected due to market conditions and the continued CVD on U.S. ethanol.

In 2022, gasoline demand increased as Colombia's economy grew strongly at 7.5 percent. In 2023, the Colombian Petroleum Association forecasts gasoline demand to grow by 3 percent while the International Energy Agency projections, updated in the April 2023 Oil Market Report, estimates a 3 percent contraction. FAS Bogota estimates the gasoline pool will increase 1.5 percent in 2023 following Colombia's GDP projected growth. According to the Organization for Economic Cooperation and Development (OECD), Colombia's economy is projected to grow 1.2 percent in 2023.

Colombia's ethanol blend rate estimate decreased to 4.9 percent in 2022 as a result of low domestic production and reduced imports. In 2023, the blend rate is forecast to increase to 5.7 percent. Figure 2 illustrates Colombia's annual demand for fuel ethanol and the market share of locally-produced versus imported.

Figure 2: Colombia's annual ethanol demand (million liters)



Source: Biofuels Producers Association and Trade Data Monitor.

Production

In 2023, Colombian ethanol production is forecast to increase 8.6 percent compared to Post's revised estimate for the previous year, given the end of La Niña weather phenomena and the beginning of El Niño phenomena, which is forecast to start by the second half of 2023. El Niño will bring warmer weather and less precipitation that might be beneficial for sugarcane crops.

In 2022, Post's revised ethanol production is down 2.8 percent from 360 to 350 million liters as excessive rains and cloudiness continued in the main sugar cane producing regions. With adverse weather conditions and high sugar prices, sugar producers preferred to prioritize sugar production over ethanol.

Currently, seven ethanol distilleries, with a production capacity of 660 million liters using sugarcane as the feedstock, supply Colombia's ethanol production. Of the 14 sugar mills in Colombia, six own ethanol refineries. These ethanol plants have an annual capacity of 540 million liters and are located near the city of Cali in Colombia's southwest region. The plants in this region can produce almost year-round, except for a period of 30 to 40 days when the plants close operations due to technical maintenance.

One additional ethanol facility, Bioenergy, not linked to the sugar industry, is in the eastern plains of Meta department. This distillery is sourcing sugarcane from 20,000 hectares established near the area. In this region, climate conditions only allow sugarcane harvesting during eight months of the year. In 2020, Bioenergy started a liquidation process due to a lack of liquidity. However, a new company took ownership and obtained resources to continue operating.

Trade

In 2023, Colombian fuel ethanol imports are forecast to increase to 80 million liters. Although the CVD on U.S. ethanol continues, imports will recover given lower international prices, Colombian peso appreciation, and increases in the local ethanol administered price. The United States is expected to continue as the main supplier.

In 2022, fuel ethanol imports decreased to 35 million liters as high international prices, a strong U.S. dollar, CVD duties in place, and lower ethanol blend mandates discouraged imports. Most imported ethanol is used to supply the Colombian north coast. Due to geographic and logistical issues, it is costly and inefficient for Colombia's domestic ethanol industry to supply to the northern region. When international prices are favorable, importers may purchase larger quantities to supply more cities in the center of Colombia. Domestic ethanol production is the predominate supplier to the southern and central regions.

Stocks

Colombia does not have programs to encourage storage or long-term stocks of biofuels. However, gasoline and diesel fuel regulations require stocks to adequately supply the market with 10 days of total fuel demand. In 2023, ending stocks are estimated at 15 million liters which represents 13 days of total biofuel demand at nearly 6 percent blend levels assuming Colombia will move to higher voluntary blend mandates.

Table 3: Colombia's Production, Supply and Distribution for Ethanol

Ethanol Used as Fuel and Other Industrial Chemicals (Million Liters)										
Calendar Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023f
Beginning Stocks	15	11	10	10	13	15	20	40	20	15
Fuel Begin Stocks	15	11	10	10	13	15	20	40	20	15
Production	406	456	434	393	470	450	395	397	350	380
Fuel Production	406	456	434	393	470	450	395	397	350	380
Imports	98	108	108	160	265	275	260	65	38	100
Fuel Imports	18	7	23	75	201	265	255	60	35	80
Exports	0	0	0	0	0	0	0	0	0	0
Fuel Exports	0	0	0	0	0	0	0	0	0	0
Consumption	508	566	542	550	733	720	635	482	393	480
Fuel Consumption	428	464	457	465	669	710	630	477	390	460
Ending Stocks	11	10	10	13	15	20	40	20	15	15
Fuel Ending Stocks	11	10	10	13	15	20	40	20	15	15
Refineries Producing Fuel Ethanol (Million Liters)										
Number of Refineries	5	6	6	7	7	7	6	7	7	7
Nameplate Capacity	412	465	540	600	660	660	540	660	660	660
Capacity Use (%)	98.7%	98.2%	80.4%	65.5%	71.2%	68.2%	73.1%	60.2%	53.0%	57.6%
Co-product Production (1,000 MT)										
Bagasse	1,371	1,540	1,464	1,326	1,586	1,518	1,333	1,339	1,181	1,282
Feedstock Use for Fuel Ethanol (1,000 MT)										
Sugarcane	4,897	5,499	5,229	4,735	5,663	5,422	4,759	4,783	4,217	4,578
Market Penetration (Million Liters)										
Fuel Ethanol Use	428	464	457	465	669	710	630	477	390	460

Gasoline Pool (1)	5,509	6,161	6,810	6,891	7,147	7,725	6,380	7,669	8,020	8,141
Blend Rate (%)	7.8%	7.5%	6.7%	6.7%	9.4%	9.2%	9.9%	6.2%	4.9%	5.7%

(1) Gasoline pool data was sourced from the IEA April 2023 Oil Market Report outlook.

Note: 2023 figures are FAS Bogota forecast

Conversions: 1 MT sugarcane = 83 liters ethanol; Bagasse: 28 MT/100 MT of sugarcane

Section IV. Biodiesel

Consumption

In 2023, Colombia's biodiesel consumption is estimated to marginally increase to 783 million liters driven by good levels of domestic production and a stable blend mandate. Colombian biodiesel consumption is entirely dependent on local production to meet the government blend mandate. Given current market dynamics, Colombia's biodiesel blend rate is estimated at 10.0 percent in 2023. It is estimated that approximately 95 percent of biodiesel production is destined for on-road use for the transportation sector.

In 2022, fuel demand continued to recover because of Colombia's economic growth (GDP growth was 7.5 percent). Considering that the Colombian Petroleum Association forecasts diesel demand to grow by 3 percent in 2023, while the International Energy Agency projections, updated on the April 2023 Oil Market Report, estimates a 2 percent contraction, FAS Bogota estimates diesel pool growth at 1.5 percent in 2023 following Colombia's GDP projected growth. According to the Organization for Economic Cooperation and Development (OECD), Colombia's economy is projected to grow 1.2 percent in 2023.

Production

In 2023, Colombian biodiesel production is estimated to slightly increase to 780 million liters as palm oil production is expected to maintain good levels given better weather conditions. Colombia's biodiesel production can satisfy a demand of B10 to the country. In 2022, palm oil production increased more than expected leading to biodiesel production of 779 million liters. Palm oil production increased because of higher productivity due to better fertilization practices once palm oil prices started to increase, and greater and better distribution of rainfall in the palm oil producing regions.

There are 12 operational biodiesel plants in Colombia (up from eight plants in 2016) using palm oil as the feedstock, and one of them produces small quantities of biodiesel from used cooking oil. Six out of the 12 plants are located in Colombia's north coast departments, while the remaining six are located in Meta (2), Santander (2), Cundinamarca (1), and Antioquia (1).

Trade

Colombia neither imports nor exports biodiesel. Even though there is an authorized biodiesel importer since July 2017, to date, there have been no biodiesel imports registered under the codes HS 382600 (i.e., biodiesel-diesel blends above B30 by volume to pure B100 biodiesel) or HS 271020 (i.e.,

petroleum oils containing up to 30 percent biodiesel by volume). Prices have not been attractive to import.

The biodiesel industry operates with some unused production capacity and aspires to export with facilities running at full capacity. However, prospects are dim for palm oil-based biodiesel from Colombia with little opportunity for sales in the two largest biodiesel markets – Europe and the United States, due to regulatory and environmental restrictions. Palm oil biodiesel is not approved for use to meet obligations under the U.S. Renewable Fuel Standard (RFS) and thus Colombian biodiesel cannot access Renewable Identification Numbers (RINs).

Stocks

Gasoline and diesel fuel regulations require stocks to adequately supply the market at 10 days of total fuel demand. In 2023, biodiesel ending stocks are estimated at 25 million liters if the B10 mandate remains and the diesel pool grows as expected.

Table 4: Colombia's Production, Supply and Distribution for Biodiesel

Biodiesel (Million Liters)										
Calendar Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023f
Beginning Stocks	14	15	15	16	16	18	18	21	25	24
Production	590	595	576	583	627	605	583	720	779	780
Imports	0	0	0	0	0	0	0	0	0	0
Exports	0	0	0	0	0	0	0	0	0	0
Consumption	589	595	575	583	625	605	580	716	780	783
Ending Stocks	15	15	16	16	18	18	21	25	24	21
Production Capacity (Million Liters)										
Number of Biorefineries	6	6	8	8	12	12	12	12	12	12
Nameplate Capacity	590	590	590	700	900	900	900	900	900	900
Capacity Use (%)	100.0%	100.8%	97.6%	83.3%	69.6%	67.3%	64.7%	80.0%	86.5%	86.7%
Feedstock Use (1,000 MT)										
Crude Palm Oil	543	547	530	514	553	531	510	632	686	687
Used Cooking Oil	0	0	22	25	26	30	30	35	35	35
Market Penetration (Million Liters)										
Biodiesel, on-road use	589	595	575	583	625	605	551	680	741	752
Diesel Pool, on-road use	6,071	6,296	6,315	6,183	6,282	6,422	5,686	6,596	7,387	7,498
Blend Rate (%)	9.7%	9.4%	9.1%	9.4%	9.9%	9.4%	9.7%	10.3%	10.0%	10.0%
Diesel Pool, total (2)	8,615	8,447	8,541	7,318	7,936	8,023	7,600	8,005	8,200	8,323

(1) Diesel pool, on-road use is an estimate based on information from the MME and the IEA Oil Market Report Outlook.

(2) Total diesel pool data was sourced from the IEA June 2022 Oil Market Report outlook. Note: 2022 figures are FAS Bogota forecast
Conversions: 1 MT CPO = 1,087 liters biodiesel; 1 MT UCO = 1,060 liters biodiesel

Section V. Advanced Biofuels

Although there are some research projects on advanced biofuels in Colombia, there is no production to date.

Section VI. Notes on Statistical Data

The source of production data for biofuels is Fedebiocombustibles, which receives information from the Colombian National Association of Sugar Producers (Asocaña) for ethanol and the National Federation of Palm Oil Growers (Fedepalma) for palm oil and biodiesel. The Colombian Customs Authority (DIAN) and Trade Data Monitor are the primary sources for trade data. The fuel consumption estimates are sourced from the International Energy Agency projections updated on the April 2023 Oil Market Report. Stocks are unknown and estimated by an average of 10-day fuel supply according to fuel regulations. In 2023, biofuel consumption is based on fuel pool projections and assumed blend rates.

Attachments:

No Attachments