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Colombia

Biofuels Annual

Colombian Ethanol Production Well Below Capacity

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Report Highlights:
In 2010, ethanol production is estimated to drop to 280 million liters due to a dramatic reduction in the sugarcane supply caused by extreme rainfall at the end of 2010. Production is expected to recover to 300 million liters in 2011, as weather improves, with production capacity increasing 100,000 liters per day in 2011. A new ethanol project entered into production in 2010 using cassava as feedstock. A new government regulation states that starting July 2010, new vehicles for public transportation will use more environmentally friendly fuels and new private vehicles must possess flex-fuel technology by 2012.

Post: **Commodities:**
Bogota

Executive Summary:

In 2010, Colombia suffered as a result of the Niña weather phenomenon, which caused extreme rainfall that hit agricultural production and caused flooding in many sugar cane areas. In other areas, muddy conditions impeded the normal sugarcane harvest as machinery could not enter the fields nor were workers allowed to enter on foot. The extreme rains caused a shortage in sugarcane supply for ethanol production and as a result, Colombian ethanol production is forecasted to fall to 280 million liters, 14 percent lower than a year before. In 2011, Colombian ethanol production is expected to recover to 300 million liters. Colombian ethanol capacity will increase by 100,000 liters per day to reach total annual capacity of 459 million.

In 2010, Colombia reached E8 and increased the biodiesel blend to B7 in the Atlantic region, while other region mixes reached B5 and B7. Colombian palm oil and sugarcane production well exceeds the local demand and generates a surplus that sustains biofuels production and are the main sources for biofuels expansion in Colombia. A new ethanol project entered into production using cassava as feedstock in 2010. This is the first ethanol project than uses a different feedstock than sugarcane in Colombia. There are several studies in Colombia looking for financing to produce ethanol and biodiesel with feedstock other than sugarcane and palm oil.

The Colombian government has allowed the biodiesel mix to increase along with the increase in production as new facilities expand or enter into production. The Government target is for B20 in 2015, and the Ethanol blend target is E10, however, there is flexibility in the time frame to reach this blend level.

The government is promoting the increased use of biofuels and has established that by 2012, 60 percent of new vehicles sold in Colombia must bear flex fuel technology.

Policy and Programs:

The Colombian government has promoted the production and use of biofuels in Colombia aimed at diversifying their sources of energy, reducing the dependency on fossil-fuels, using environmentally friendly fuels to reduce greenhouse gas emissions, and developing the Colombian agro-industry to promote agricultural employment in rural areas.

Colombia is traditionally a net exporter of palm oil and sugar which secures inputs for a biofuel industry based on these two feed stocks without causing any disruption in local supply. In fact, biofuels production opened up new development for the agricultural sector that supported the GOC's policy of sustaining agricultural employment. The government's role has been to define a legal framework for making biofuels production economically sound.

The GOC initially established a minimum mandatory blend at E10 to be accomplished by 2008. However, the GOC eased the mandate to allow it to be reached on time. Currently, only the E8 blend is covered throughout the whole country. For biodiesel, the initial mandate was for B5 to be reached by 2008 with a plan to increase it to B10 by 2010 and B20 by 2015. The Ministry of Energy has issued several resolutions to make the B-blend mandatory at levels that can be supplied by new biodiesel plants coming into production. The Biodiesel blend has been increased from the initial B5 in 2008 to the current B7 and to B8 in the Atlantic coast region. In

other regions of the country, the blend has reached B5 and B7.

The GOC also issued a decree establishing that starting in 2012, 60 percent of the new vehicles sold should bear flex-fuel engines that can run on up to B20 and E85 blends. The percentage of new vehicles with flex-fuel technology is mandated to increase to 80 percent and 100 percent by 2014 and 2016 respectively. This decree sets the policy of extending the use of biofuels in the future and send a signal to the market regarding Colombia's future biofuels demand. This decree, however, did not change the current mandatory blend levels.

The GOC established tax exemptions for ethanol and biodiesel consumption for the part of the blend constituted by biofuels. Also, the areas where biofuels facilities are built can be declared by the government a permanent customs zone, which reduces the income tax paid from 35 percent to 15 percent. In addition, in 2004, the government granted a tax exemption to new palm oil planted during the following 10 years. Biofuels are exempt from the value added tax (VAT) and the global tax, which are charged on fossil fuels.

The Ministry of Energy (MOE) regulates prices and blend levels of fuel with biofuels in Colombia. The MOE defines a price formula for biofuels which grants a minimum price for biofuels producers. Every month, the MOE calculates a new price to be applied to ethanol and biodiesel.

Bioethanol and Biodiesel:

Production

Colombia produces 97 percent of its ethanol from sugarcane and 3 percent from cassava, while all biodiesel is produced from palm oil. Sugar and palm oil agro-industries production almost double local demand so the production surplus is exported and used for biofuels production. Colombian biofuels production neither competes with food supply nor takes land from food crops. Biofuels production has replaced so far only 25 percent of sugar exports and 30 percent of palm oil exports.

Colombia's ethanol production is supplied by 5 ethanol facilities that are located beside sugar mill facilities and one facility just entering into ethanol production with yucca as feed stock. There is one additional project being developed that will use cane as feed stock for ethanol production only (no sugar).

Biodiesel production started in 2008 and has experienced rapid growth. There are currently 7 plants in production which use palm oil as feed stock and there is one project under construction that would enter into production in 2011.

Some projects based on other feed stocks for ethanol production using sugar beets and yucca have been halted due to lack of investment. Overall, the increase in production based on new projects and development are almost stagnant due to absence of investments. The Colombian Biofuels Federation is looking for foreign investment to continue developing feasibility studies for the expansion of biofuels production in Colombia.

In the short term, Colombia's biodiesel production is expected to increase given that palm oil area continues to grow. The palm oil planted area has doubled since 2001, when the biofuel legislation was first issued.

Consumption

Ethanol consumption has reached only 8 percent of the intended mix of 10 percent in the whole country. Biodiesel consumption reached B7 in the north coast region and between B5 to B6 in the other regions of the country. The B10 blend expected for 2010 was not reached due to delays in new biodiesel projects.

The current Colombian ethanol plant capacity is not equipped to supply the E10 blending goal set by the government. The demand for ethanol is expected to increase with the expansion of the automotive sector and the mandate of that all new vehicles sold must bear flex-fuel technology, beginning in 2012.

Biodiesel consumption is stronger given the Colombian policy of improving the quality of its diesel and the replacement of the old public transportation vehicles by those that use cleaner fuels. The government and biodiesel producers in a joint effort have conducted research and tested the blend level capacity of the current public transport. As a result, levels of up to B50 could be used by the mass transit system.

Trade

Currently, Colombia neither imports nor exports biofuels. In the short term, given the lack of biofuels supply for covering the local demand, it is unlikely exports will occur. Also, it is unlikely that imports will take place for current biofuels given the commitment from the local industry to supply the local demand and the government's flexibility to reach the blend as new facilities enter into production.

There exists however, in the medium term, an expectation that Colombia will be an exporter of biofuels, particularly biodiesel from palm oil, as expansion of palm oil area continues.

The basic import duty for ethanol is 15 percent. It was excluded from the Colombia – Mercosur trade agreement. The basic import duty for biodiesel is 10 percent. Under the CAN-MERCOSUR agreement, imports from Brazil, Paraguay and Uruguay enter at zero duty while imports from Argentina pay a 3.9 percent duty. Under the Colombia-Central America triangle trade agreement, imports from Guatemala, Salvador and Honduras pay an 8 percent import duty. Imports from Chile and Mexico pay zero duty. Biofuels imports are under the Colombian regime of free importation which means there are no special requirements for imports.

Stocks

Colombia does not have any program to encourage the biodiesel industry to keep stocks. The stocks held by the industry are their working inventories.

Tables

Conventional & Advanced Bioethanol (million liters)						
CY	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
Production	269	275	260	327	280	300
Imports	0	0	0	0	0	0
Exports	0	0	0	0	0	0
Consumption	265	270	255	319	273	294
Ending Stocks	4	5	5	8	7	6
Production Capacity (Conventional Fuel)						
No. of Biorefineries	5	5	5	5	6	6
Capacity	378,000	378,000	378,000	378,000	387,000	459,000
Production Capacity (Advanced Fuel)						
No. of Biorefineries						
Capacity						
Co-product Production (1,000 MT)						
Product Y						
Product Z						
Feedstock Use (1,000 MT)						
Sugarcane	3,587	3,667	3,413	4,350	4,405	4,480
Cassava					15	33
Feedstock C						
Feedstock D						

Conventional & Advanced Biodiesel (million liters)

CY	2006	2007	2008	2009	2010	2011
Production		9	80	330	420	537
Imports						
Exports						
Consumption						
Ending Stocks						
Production Capacity (Conventional Fuel)						
No. of Biorefineries		1	2	7	8	8
Capacity	0	56	100	438	624	624
Production Capacity (Advanced Fuel)						
No. of Biorefineries						
Capacity						
Feedstock Use (1,000 MT)						
Palm oil	0	8	71	291	369	473
Feedstock B						
Feedstock C						
Feedstock D						