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El Salvador

Biofuels Annual

2012

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Report Highlights:
The Government of El Salvador (GOES) which took office on June 1, 2009 has not approved the Ethanol Law created by the previous administration. The GOES has not made a decision on the gasoline-ethanol mix ratio; and high international sugar prices have decreased interest in the sugarcane industry to lobby for the ethanol law. There are currently several bio-fuel initiatives being implemented to produce bio-diesel. A plant that was dehydrating Brazilian alcohol (for re-export to the United States) is shutting down due to poor returns.

Post:
San Salvador

Executive Summary:
The previous Salvadoran government (2005-2009) was not able to finish the approval process for the law to promote ethanol production from sugarcane. The new administration (headed by President Mauricio Funes who is affiliated with the Farabundo Marti Liberation Front - FMLN) which took office on June 1, 2009, is now in charge of completing this task. Under the proposed law, there would be a 95/5 or 90/10 percent gasoline-ethanol mix, a mixture that does not require gasoline engine modification. The GOES's main interest behind this legislation is to decrease the dependence on oil imports (which reached US$1.134 billion in 2011) and also to create much needed jobs in the rural sector.

El Salvador enjoyed a CAFTA-DR ethanol quota of 5.2 million gallons during the first year of the agreement and a 1.3 million gallon annual increase thereafter. CAFTA-DR requires that this ethanol be distilled in El Salvador but not necessarily from ethanol derived from local sugarcane.

Additionally, under CAFTA-DR, El Salvador enjoys unlimited access for ethanol produced with local raw materials. A U.S.-Brazilian-Salvadoran joint venture has constructed a US$10.5 million alcohol dehydration plant near the port of Acajutla with an annual 60 million gallon capacity. The plant started operations in 2005 and has been dehydrating Brazilian alcohol for export to the U.S. under the CAFTA-DR quotas. However, that plant is now shutting down due to a lack of profits.

El Salvador is also a pilot country for a U.S.-Brazil Bio-Fuels Initiative to develop alternative fuels in developing countries. In April 2008, the Inter-American Development Bank (IDB) provided approximately US$1.0 million to fund technical assistance to design the framework for this endeavor. Under this initiative, the U.S. Trade and Development Agency (USTDA) funded the pre-feasibility study for projects to support bio-fuel development. Other studies have been backed by the Organization of American States (OAS), including one focused on technical assistance for blending and logistical aspects of implementing the ethanol mandate and another investigating ways for local sugar mills to expand into ethanol production. Brazil also funded an agronomic study on bio-fuels potential in El Salvador. Also the Getulio Vargas Foundation—a noted Brazilian business school—conducted a study on potential sugarcane production areas for ethanol and sugarcane varieties that are better for ethanol production.

It is too early to forecast how global ethanol developments will affect the social and economic environment of El Salvador. So far, the Salvadoran government through the National Energy Council (CNE) has sent a draft Biofuels Law to the Executive branch for review/approval and submission for vote to the National Assembly. The CNE is also working on a pilot program to use sugarcane derived biofuel in the government's vehicle fleet. Additionally, the government is focusing on targeting Liquid Petroleum Gas (LPG) subsidies to the most needy and on diversification of energy production away from petroleum based fuel and into carbon, gas and hydroelectric production.

Author Defined:
Policy and Programs:
BIO-FUELS POLICY

1. Domestic Policy Environment

a. Policies which support production and/or use of bio-fuels

There is currently no specific policy supporting production or use of bio-fuels in El Salvador. However, the GOES through the Ministry of Economy (MINEC) has developed a National Energy Policy. One of the general objectives of this policy is to reduce the country's vulnerability to energy shortages by diversifying energy sources including the production of bio-fuels. MINEC's Hydrocarbon Division is in charge of creating and approving policies for import, transportation, distribution, and commercialization of hydrocarbons. An official Energy Commission took over managing El Salvador's energy policy on October 2008; however, energy is to be additionally included under the legal framework of the Superintendence for Telecommunications (SIGET).

Currently, the Hydrocarbon Law of 1981 regulates exploration and exploitation for fossil fuels; however, there are no exploration activities in the country at this time. Nonetheless, there are discussions related to having the Executive Electricity Commission (CEL) carry out a study to determine if there are offshore deposits of natural gas that can be exploited. The commercialization of energy products is based on the Regulatory Law for Deposit, Transportation, and Distribution of Petroleum of 1970. Presently, the GOES only regulates the price of LPG, whose price is regulated because it is subject to a government subsidy.

The hydrocarbon diversification strategy is being developed in two fronts:

- Utilization of alternative fuels through the establishment of a legal framework that permits the use of LPG and Liquid Natural Gas (LNG) as automobile fuel;
- Promotion and use of bio-fuels establishing the legal framework and the conditions that promote production and use of bio-diesel and ethanol, primarily using local or regional raw materials.

On the bio-fuels front, the GOES is working on legislation to promote sugarcane derived ethanol production, storage and sales. The law would mandate a 95 to 5 or 90 to 10 percent gasoline-ethanol mix, a mixture that requires no gasoline engine modification. The current government administration has worked on the legislation and sent it to the Executive Branch for review and presentation to the National Assembly to be brought to a vote. However, there is no indication as to how soon the Funes administration will seek legislative approval for this law. The residual waste referred to as "Vinaza" is a constraint, and Colombia has offered assistance in using it as fertilizer due to its high potassium content.

Bioethanol and Biodiesel:

Production

Current:

Three years ago, the Ministries of Agriculture and Economy started a pilot program to promote the production of bio-fuels in which private university researchers participated. The program led to the construction of the first bio-fuels plant that was financed by the Government of Finland using Racine oil derived from the higuerillo plant (*Ricinus communis*) as the feedstock.

The other bio-fuels investment is a joint venture between Salvadoran and Guatemalan investors, with 35 percent equity participation by the government-run Salvadoran Investment Corporation (CORSAIN). At a cost of US$2.5 million, this plant has been designed to produce bio-diesel from African palm oil imported from Honduras and Guatemala. Plant production capacity is 25,000 gallons per day (approximately 5 percent of current diesel consumption); however, due to high palm oil prices, this plant is searching for other sources of raw materials to be able to re-start production. Bio-diesel produced was being sold to public transportation consortia at a price similar to regular diesel. The main benefit of using bio-diesel is that it's biodegradable and it prolongs the life cycle of the engine.

There are two companies producing sugarcane-derived ethanol: La Cabaña sugar mill and a joint venture between CASSA (owners of Izalco and Chaparrastique sugar mills), Cargill and Brazilian Crystal that has been named American Renewable Fuel Suppliers (ARFS). The ARFS plant is a US$10.5 million investment with a capacity to produce 60 million gallons of ethanol annually. This plant started operations in September 2005 and has been dehydrating Brazilian alcohol to re-export to the U.S. market under CAFTA-DR. However, due to lack of competitiveness the plant is shutting down operations and has started a process to sell the equipment. The La Cabaña plant has the capacity to produce 31,700 gallons per day from raw sugarcane or 15,850 gallons per day using molasses. Due to the absence of a law, local companies have to search for other markets for their product.

There is no impact foreseen on traditional uses such as feed, food, or trade. Ethanol production is sugarcane based and there is ample idle land that can be devoted to fulfill the growth in sugarcane demand. Bio-diesel produced from palm oil and higuerillo (*Ricinus communis*) and tempate (*Jatropha curcas*) plants is not expected to cause any impact either. Palm oil was being imported from Honduras and Guatemala, while higuerillo and tempate are being grown locally. El Salvador's poultry, cattle and swine industries depend on imports of yellow corn for animal feed mixes.

Planned:
El Salvador has been selected as a participant in the U.S.-Brazil Bio-Fuels Initiative to develop a pilot program for production of sugarcane based ethanol fuel in Latin America. At this time there is no funding available to establish the first ethanol plant estimated at US$20 million. However, the Inter-American Development Bank (IDB) has provided funding for consultants to develop a program strategy.

According to the Salvadoran Sugar Association, in order to produce 7.5 million gallons per year of ethanol, which is the estimated need to support a 5 percent ethanol mix, El Salvador would need two ethanol plants producing 15,850 gallons per day running for 120-150 days. These plants would require additional sugarcane as raw material. It is estimated that an additional 4,000 hectares of sugarcane would need to be planted, creating 2,500 new jobs. Currently, 72,000 hectares are under sugarcane cultivation. The Government of Colombia has provided technical assistance and a small biodiesel plant worth approximately US$250,000 that was handed over to the Ministry of Agriculture to serve as a pilot program.

Consumption
There is limited consumption of bio-fuels at this time. Outside of a few small private biodiesel processors that use local feed stock, as well as burnt cooking oil, there is no other use of bio-fuels. The main reason is the absence of a law that mandates use of bio-fuels in El Salvador.

The size of the national vehicle fleet is estimated at 600,000. El Salvador's petroleum imports are expected to reach US$1 billion in 2012 at current oil prices. The breakdown of the fuel market in El Salvador is estimated to be 57 percent diesel, 26 percent regular gasoline, and 17 percent premium gasoline for a total of approximately 345 million gallons per year. There are five crude oil and refined product importers, including Venezuelan ALBA Petroleos, and approximately 380 service stations nationwide.

Demand for fuels has increased by approximately 1 percent in the first quarter of 2012 compared to the same period in 2011.

Following are the fuel consumption numbers (gallons) for the first quarter of 2012:

Fuel Type	January	February	March	Quarterly Total
Premium	4,308,961	4,218,341	4,954,422	13,481,724
Regular	8,345,621	8,277,150	10,153,659	26,776,430
Diesel	15,830,991	15,884,987	17,988,370	49,704,348
Monthly Total	28,485,573	28,380,478	33,096,451	89,962,502

Source: Ministry of Economy

Trade
Salvadoran Central Bank (BCR) data show that ethanol exports derived from imported raw materials

(sugarcane) reached US$ 606,362.00 in 2011. This product was exported to the U.S. market under the CAFTA-DR quota assigned to El Salvador for ethanol produced from imported raw materials and also to the European Union.

There are no records of ethanol imports.

Ending Stocks
N/A

Supply and Demand Tables

Biodiesel - Conventional & Advanced Fuels (Mil. Liters)							
Calendar Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Production, Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Advanced Only	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Imports	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exports	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Consumption	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ending Stocks	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Production Capacity - Conventional							
No. of Biorefineries	0	0	1	1	1	1	1
Capacity (Mil. Liters)	0	0	22.5	22.5	22.5	22.5	22.5
Capacity Use (%)	0	0	0	0	0	0	0
Production Capacity - Advanced							
No. of Biorefineries	0	0	0	0	0	0	0
Capacity (Mil. Liters)	0	0	0	0	0	0	0
Capacity Use (%)	0	0	0	0	0	0	0
Feedstock Use - Conventional (1,000 MT)							
Feedstock A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feedstock B							
Feedstock C							
Feedstock D							
Feedstock Use - Advanced (1,000 MT)							
Feedstock A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feedstock B							
Feedstock C							
Feedstock D							

Ethanol - Conventional & Advanced Fuels (Mil. Liters)							
Calendar Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Production, Total	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Advanced Only	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Imports	235	344	76	7	6	N/A	N/A

Exports	217	288	121	4	1	N/A	N/A
Consumption	0	0	0	0	0	0	0
Ending Stocks	0	0	0	0	0	0	0
Production Capacity - Conventional							
No. of Biorefineries	2	2	2	2	2	2	2
Capacity (Mil. Liters)	239	239	239	239	239	239	239
Capacity Use (%)	0	0	0	0	0	0	0
Production Capacity - Advanced							
No. of Biorefineries	0	0	0	0	0	0	0
Capacity (Mil. Liters)	0	0	0	0	0	0	0
Capacity Use (%)	0	0	0	0	0	0	0
Co-product Production - Conventional only (1,000 MT)							
Product Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Product Z	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feedstock Use - Conventional (1,000 MT)							
Feedstock A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feedstock B							
Feedstock C							
Feedstock D							
Feedstock Use - Advanced (1,000 MT)							
Feedstock A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Feedstock B							
Feedstock C							
Feedstock D							

Ethanol Used as Other Industrial Chemicals (Mil. Liters)							
Calendar Year	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Production	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Imports	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exports	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Consumption	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ending Stocks	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Production Capacity							
Capacity (Mil. Liters)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Capacity Use (%)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Advanced Biofuels:
There is no production or commercialization of advanced bio-fuel production in El Salvador at this time.

Notes on Statistical Data:
According to El Salvador's Customs Administration, ethanol is traded as "ethyl alcohol". There is no equivalent to the U.S. Harmonized Tariff Code (HTC) 9901.00.50, which defines ethyl alcohol or mixtures with ethyl alcohol to be used as fuel or in producing fuel. Instead, local Customs authorities only use the following HTC's:

2207.10 – Undenatured ethyl alcohol, of an alcoholic strength by volume of 80 percent vol. or higher.

2207.20.00 – Ethyl alcohol and other spirits, denatured, of any strength.

CIF duty of 5 percent.