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Mexico

Biofuels Annual

Uncertainty on the Future of Mexican Biofuels

Approved By:
Dan Berman
Prepared By:
Luis Chavez

Report Highlights:
This annual report updates information from last year's report (see MX1052) on Mexico's biofuel industry. Although it has been a trendy topic for the last five years, biofuels in Mexico are now facing uncertain times, due to the fact that ethanol and biodiesel are still more expensive than their petroleum-based equivalents. Mexican authorities keep postponing the commercial introduction of biofuels and advanced biofuels are still on the drawing board.

Post:
Mexico City

Executive Summary:
The Mexican biofuels industry is facing uncertain times. Although the legal framework that will regulate Mexico's biofuel production and commercialization is in place, it is undeniable that ethanol and biodiesel are significantly more expensive than the products they intend to substitute, limiting current biofuel production to research projects. A second ethanol bid launched by Petroleos Mexicanos (PEMEX) was recently canceled after bidding prices were over 50% more expensive than what PEMEX was willing to pay. Industry sources claim that only a subsidy will correct this situation but there seems to be no political support for this measure at a time of transition in the Federal government. The GOM is promoting jathropa and palm plantations in several states in an effort to promote its use in agricultural reconversion projects, but the lack of a tangible market is generating disbelief in the potential of these "green crops". Advanced biofuel projects are constantly in the Mexican media, but not a single project has broken ground.

Author Defined:
Policy and Programs
After PEMEX cancelled its bid for ethanol supplies in 2010 because of differences in the prices offered and the maximum price accepted, the GOM redefined the strategy, objectives, and goals of the Inter-Agency Biofuel Strategy (Spanish: Estrategia Intersecretarial de los Bioenergéticos). Consequently, a new Ethanol Introduction Program (Spanish: Programa de Introducción de Etanol Anhidro) was launched in December 2011, setting new dates and volumes for the introduction of biofuels, specifically ethanol. Industry sources say that these goals might be again postponed due to the election-related transition of the federal Administration during the second half of 2012.

Table 1 – Mexico: Ethanol Introduction Goals

Year	Volume (million liters per year)	
	Minimum	Maximum
2012	50	100
2013	75	150
2014	85	175
2015	100	200
2016	115	230

Source: Secretariat of Energy, SENER.

Additionally, the Ethanol Introduction Program requires SENER to establish a yearly ethanol-related seminar or congress where projects are presented and information can be exchanged amongst interested parties in order to encourage investment in ethanol production. The program also defines the need to establish a National Registry of Ethanol Research and Development Projects, although no information is available on the progress of the aforementioned mandates.

On biofuel crop development, the GOM is continuing its support of biofuel crop research projects. The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) and the National Council for Science and Technology (CONACyT) continue to provide funding to projects related to biofuel research and development. According to SAGARPA's National Institute of Forestry, Agricultural & Livestock Research (INIFAP), 27 experimental fields staffed by more than 70 scientists are scattered throughout Mexican territory. The Mexican Bioenergy Network (REMBIO) reports over 500 biofuel-related projects in Mexico, mostly on research and related activities.

Biofuels were barely mentioned in this year's presidential elections. They were briefly included in the topics of biotechnology and climate change but without any concrete proposal or commitment from any of the presidential candidates. Until a new Cabinet is appointed next December, the new Administration's position on biofuels remains unclear, although analysts believe things will remain the same in the short term.

Ethanol

As previously reported, Mexico produces (non-fuel) ethanol as a sub-product of sugarcane milling. Of the existing sugar mills in Mexico, only 18 have ethanol distilling capabilities; only eight of these are currently producing ethylic alcohol but their production is destined to the alcoholic beverages and pharmaceutical industries.

After a previous ethanol bid failed, on February 7, 2012, PEMEX launched a new bid for acquiring ethanol to be shipped to four of its Storage & Distribution Terminals (TAR). The bid sought to buy up to 520 million liters of ethanol, between 2012 and 2016. Only two companies participated on the bid but offered prices that were more than 50% higher than what PEMEX was willing to pay (see table below). With no participation for the other two TAR's supply, the whole bidding process was annulled.

Table 2 – PEMEX Public Bid for Ethanol (prices per liter)

TAR location	Reference price offered by PEMEX	Minimum price offered by bidder
Salina Cruz, OAX	9.19 pesos (US$ 0.66)	14.50 pesos (US$ 1.05)
Tapachula, CHP	9.39 pesos (US$ 0.68)	14.20 pesos (US$ 1.03)

Source: PEMEX Refinacion and Grupo Reforma.

Companies participating in the bid later announced that the price offered was basically the cost of producing ethanol, plus a minimal margin and complained that PEMEX was using reference prices from the United States without including subsidies. On the possibility of another bid being set for the second half of 2012, comments were mostly pessimistic, but hope remains that PEMEX will consider adjusting its bid price and launch a new bid next September.

Biodiesel

Although the GOM continues to promote biodiesel projects, primarily jathropa-based (with over 8,000 hectares planted in the last 4 years, as reported by the National Forestry Commission, CONAFOR), biodiesel output is currently used only for research, public transportation in several cities, and bio-jet

fuel (see separate section below).

In September 2011, FAS Mexico had the opportunity to visit some of the jathropa and palm plantations and the biodiesel plant run by the State of Chiapas' Institute for Productive Reconversion and Biofuels (IRBIO) near Puerto Chiapas and Tapachula. IRBIO staff gave a presentation on the agency's objectives, goals and achievements; they explained that biodiesel production is just an element of a larger set of activities the Institute carries out, which includes: technical assistance and support, plant genetics investigation, infrastructure, protected agriculture and helping producers organize for trade.

Ag Minister Counselor Dan Berman operates the pump at the biodiesel plant in Puerto Chiapas.

(Photo: IRBIO/FAS Mexico)

Information provided by the IRBIO revealed that, similar to ethanol, there is a significant price differential between biodiesel (from inputs like jathropa, palm oil, castor oil and restaurant/industrial oil residues) and regular diesel. The price gap is such that biodiesel is currently commercially unfeasible in the absence of a subsidy or commercial entities interested in paying a premium for biofuels.

Although unconfirmed, local media from Chiapas is reporting the dissolution of the IRBIO, while the state government declares that it is merely a reorganization of its agriculture-related structure in order to reduce costs.

Advanced Biofuels

Although several projects are reported to be underway in Mexico for developing third-generation biofuels (algae/seaweed, saw grass and similar crops, and industry residues) they are still on the drawing board and are considered to have little chance of operating in the near future. SENER identifies 13 advanced biofuel research projects, highlighting the Blue Fuel project, which will use the agave plant (*Agave tequilana*) as an input for ethanol production, with an estimated output of 9.2 million liters per month.

Bio-Jet Fuels

As explained last year, Mexico's Airport and Ancillary Services Administration (ASA) established a goal of covering at least 1% (about 40 million liters) of the country's total jet fuel demand with biofuels

by 2015 and 15% (about 700 million liters) by 2020. The goal remains, although industry contacts and analysts confide that bio-jet fuel's high cost (about six times the cost of regular jet fuel) makes it extremely unlikely that bio-jet fuels will be used in commercial aviation within the next 10 years.

After Interjet's test flight in April 2011, Aeromexico carried out the first transcontinental commercial flight using a blend of 70% traditional fuel and 30% biofuel (obtained from jatropha) on a Boeing 777 flight from Mexico City to Madrid on August 1, 2011.

Mexican Ambassador in Spain, Jorge Zermeño (far right), welcomes passengers and crew from the first transcontinental flight that used biofuels, last August.

(Photo by: EFE/Sergio Barrenechea)

There have been additional flights by Mexican airlines using biofuels: Honeywell issued a press release last June 19, announcing the use of its "Green Jet Fuel" in Aeromexico's weekly flights to San Jose, Costa Rica (using a 15%-25% blend) and a flight from Mexico City to Sao Paulo, Brazil (for the Rio+20 U.N. Conference) using a 50% blend, obtained mostly from a mixture of used cooking oil, camelina, and jatropha.

According to ASA, they currently have a stock of 103,000 liters of bio-jet fuel available for commercial flights. Also, as reported by Grupo Reforma [1] , ASA sold 10,000 liters of bio-jet fuel to Spanish oil-company Repsol, which then used it on an Iberia flight from Madrid to Barcelona last October.

Mexico's Fossil Fuels

As explained previously, Mexico exports most of its crude oil, and conversely, imports a large volume of gasoline, diesel, and fuel additives, mostly from the United States.

Table 3 – Volume of imports of refined products, in thousand barrels daily

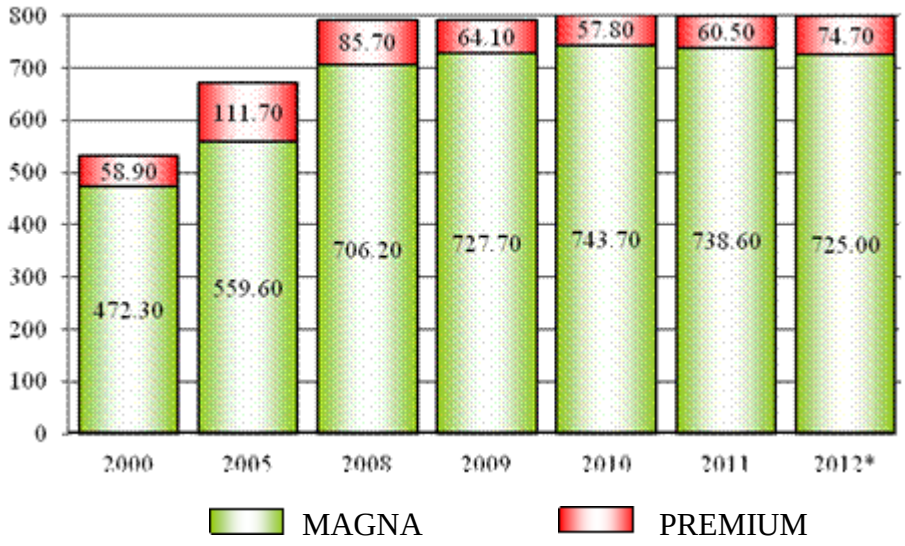
	2005	2007	2008	2009	2010	2011	2012

							(Jan-May)
Gasoline **[2]**	169.8	308.1	340.5	329.5	379.6	405.2	376.3
Diesel	21.4	52.7	68.0	47.7	108.0	135.7	113.9
Fuel Oil	26.4	17.0	32.9	39.2	11.0	25.0	29.8
Others	43.2	34.0	22.4	22.8	49.6	29.9	11.1
Total	260.8	411.7	463.8	439.3	548.2	595.8	531.1

Source: PEMEX Monthly Petroleum Statistics, May 2012

As for Mexican fuels, the sale volumes for PEMEX's two brands of petroleum-based gasoline (Magna and Premium), and the two types of diesel (Vehicle or Industrial), are shown in the following tables:

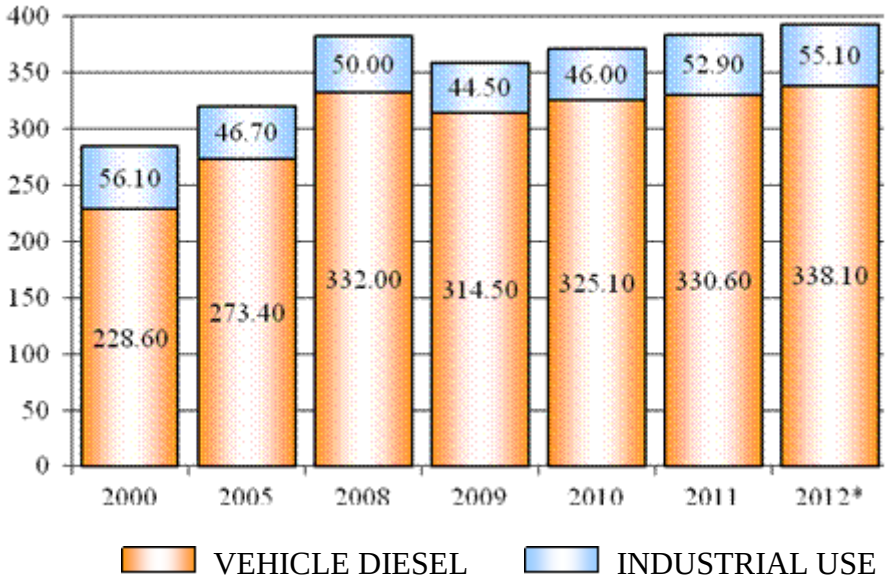
Table 4 – Gasoline sales volume, in thousand barrels daily



* 2012 only covers Jan-May

Source: PEMEX's Monthly Petroleum Statistics and Statistical Yearbooks

Table 5 – Diesel sales volume, in thousand barrels daily



* 2012 only covers Jan-May

Source: PEMEX Monthly Petroleum Statistics and Statistical Yearbooks

Ethanol & Biodiesel Trade

Mexico's Customs Administration (Aduana Mexico) still considers ethanol as "ethylic alcohol", and so does not make a distinction by its end use and keeps using the following tariff codes for its classification:

- 2207.10.01 - Ethylic alcohol, undenatured [alcoholic strength of 80% vol. or higher]
- 2207.20.01 - Ethylic alcohol and other spirits, denatured, of any strength
- 2208.90.01 - Ethylic alcohol, undenatured [alcoholic strength of less than 80% vol.]

Of the three tariff codes under which ethylic alcohol is classified, only 2207.10.01 shows significant volume in trade, according to trade information from the Secretariat of Economy (SE), but as mentioned previously, trade volumes reported refer to non-fuel related uses of ethanol.

Table 6 – Exports, HTC 2207.10.01 (in million liters)

Country	2007	2008	2009	2010	2011
United States	0.71	2.65	0.53	2.79	0.68
Canada	3.32	2.59	2.36	2.45	3.67
Others	3.22	12.46	0.22	1.09	7.73 [3]
Total	7.25	17.7	3.11	6.33	12.08

Source: SE, Banco de Mexico & Aduana Mexico

Table 7 – Imports, HTC 2207.10.01 (in million liters)

Country	2007	2008	2009	2010	2011
United States	10.35	12.68	15.36	78.74	128.00

Cuba	0	6.30	4.36	4.12	6.99
Brazil	41.27	33.86	83.07	39.92	4.05
Guatemala	0	5.33	18.18	20.84	1.25
Others	2.94	1.39	7.45	2.21	1.48
Total	54.56	59.56	128.42	145.83	141.77

Source: SE, Banco de Mexico & Aduana Mexico

On June 29, 2012, President Calderon published a set of modifications to Mexico's Harmonized Tariff Code, in accordance with the new World Customs Organization regulations. Including those changes, two new tariff codes are included:

- 2710.20.01 for fuels containing up to, but not including 30% biodiesel, and
- 3826.00.01 for fuels containing 30% or more biodiesel, including pure biodiesel (B30 to B100)

Since these changes are very recent, no statistical information is available on any trade operations for these two new tariff codes.

FOR MORE INFORMATION

FAS/Mexico Web Site: We are available at: http://www.mexico-usda.com or visit the FAS headquarters' home page at: http://www.fas.usda.gov for a complete selection of FAS worldwide agricultural reporting.

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Other Relevant Reports Submitted by FAS/Mexico:

Report Number	Subject	Date Submitted
MX1052	Biofuels Annual	06/29/11
MX2023	Grain and Feed Annual UPDATE	04/23/12
MX2020	Oilseeds and Products Annual	04/12/12
MX2019	Sugar Annual	04/10/12
MX1056	Agricultural Biotechnology Annual	07/15/11

Useful Mexican Web Sites: Mexico's equivalent to the U.S. Department of Agriculture (SAGARPA) can be found at www.sagarpa.gob.mx , equivalent to the U.S. Department of Commerce (SE) can be found at www.economia.gob.mx and equivalent to the U.S. Food and Drug Administration (COFEPRIS) can be found at www.cofepris.gob.mx. These web sites are mentioned for the readers' convenience but USDA does NOT in any way endorse, guarantee the accuracy of, or necessarily concur with, the information contained on the mentioned sites.

[1] "Vende ASA biocombustible a Repsol", El Norte, 03-Oct-2011.
[2] Includes gasoline and MTBE
[3] The 2011 trade reports include two atypical export markets: 3.5 million liters exported to Puerto Rico and 4.17 million liters exported to Haiti, countries that had reported zero Mexican imports of the referred HTC in the last 5 years.