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Peru

Biofuels Annual

Annual

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Report Highlights:
This report replaces the previous Peru Biofuels Annual report dated November 2, 2016. During 2017, ethanol production is forecast at 112 million liters, up slightly from 2016. Production has fallen since the decommissioning of a plant in 2015, so Peru's imports have risen to meet demand. Consumption of ethanol is forecast up slightly at 177 million liters. For biodiesel, competition from imports caused domestic plants to shutter in 2014. But due to the countervailing duties imposed on Argentina in 2016, biodiesel production is forecast to resume in 2017, reaching 60 million liters. Imports of biodiesel in 2017 are forecast down slightly at 354 million liters.

Post:
Lima

Executive Summary:

Peru does not provide tax incentives or set prices to directly support profitable biofuel margins that would give biofuels an advantage over fossil fuels like in many countries. Instead, Peru relies solely on the mandatory blend rates of 7.8 percent for ethanol and 5 percent for biodiesel. The government established the blend rates nationwide in 2010 and 2011 respectively.

Production of ethanol in Peru began to fall in 2015 as a result of the closure of one of two production plants in that year. FAS Lima forecasts increased imports in 2016 and 2017 to meet the gap in supply. Peru is forecast to continue exporting ethanol, but in lower volumes than in previous years due increased domestic consumption. Ethanol production for 2017 is forecast at 112 million liters, up slightly from 2016. Ethanol consumption for 2017 is forecast up slightly from 2016 at 177 million liters.

Peru's domestic biodiesel plants have been shuttered since 2014. But due to countervailing duties against Argentina in January 2016, biodiesel production is forecast to resume in 2017, reaching 60 million liters. Imports are forecast down slightly at 354 million liters.

Increases in the blend rate for both ethanol and biodiesel are unlikely at this time. As a result, increased biofuel consumption will depend solely on increased fuel use. There is currently no policy in place to support advanced biofuels research.

II. Policy and Programs

Peru does not provide tax incentives or set prices to directly support profitable biofuel margins, which would give biofuels an advantage over fossil fuels like many countries. Peru relies solely on mandatory blend rates. As a result of the U.S.-Peru Trade Promotion Agreement, U.S. ethanol is assessed an import duty of only three percent and it will be duty free by 2018, while U.S. biodiesel is imported duty free into Peru. Since biodiesel production stopped in 2014, Peru has met this demand through imports. Peru's biofuel sector is governed by three regulations that provide the legal framework.

Supreme Decree 013-2005 EM - Regulation for Biofuels Market Promotion: This 2005 decree sets the biofuel content in fuels distributed and sold within Peru. Gasoline must contain at least 7.8 percent ethanol, while diesel must have a biodiesel content of no less than 5 percent. This minimum blend level mandate applies to all diesel end use markets, both on and off-road as well as heat and power.

Law 28,054 – Biofuels Market Promotion: This law (April 20, 2007) establishes the legal framework for promoting the use of biofuels in Peru. The legislation seeks to increase employment, diversify the country's fuel sources, strengthen agricultural development, reduce environmental contamination and degradation, and provide an alternative source of income to illicit coca cultivation and drug production. This law promotes investment in biofuel production and its commercialization. The law established the PROBIOCOM program within Peru's investment agency (i.e., PROINVERSION) in order to attract investment in the local biofuel sector. While the framework of this law remains in force, no new

investments have been made beyond the initial years.

The Biofuels Market Promotion legislation establishes the technical committee responsible for determining blend rates and schedules, as well as recommending biofuel production and commercialization regulations. The committee is also responsible for enhancing public awareness of the benefits of biofuels. The Ministries of Energy and Mines, Economy and Finance, Agriculture, PROINVERSION, DEVIDA (alternative development agency) and the private sector compose the technical committee's membership.

Supreme Decree 021-2007 EM – Regulation for the Commercialization of Biofuels: This law (April 2007) establishes the legal requirements for trading and distributing biofuels in Peru, while also establishing quality standards and procedures for registering biofuel blends with the Ministry of Energy and Mines. The decree sets the schedule for biofuel blending minimums in fossil fuels. Since 2010, when the blend wall was finally phased in nation-wide, all gasoline sold in Peru is required to contain at least 7.8 percent ethanol. From 2011 onwards, diesel fuel sold in Peru must contain a minimum 5 percent biodiesel component.

The following regulations delineate responsibilities among the different agencies:

- Ministry of Agriculture and Irrigation: Responsible for promoting the development of the agricultural areas necessary for biofuel production.
- Ministry of Energy and Mines: This ministry authorizes the commercialization of biofuels and blends thereof with gasoline and diesel fuels.
- Ministry of Production: Authorizes the operation of biofuel production facilities.
- OSINERGMIN: Supervises and controls operations throughout the production chain.
- PROINVERSION: Promotes investment in the biofuels sector.

III. Gasoline and Diesel Markets

Fuel Use History (Liters - Million)										
Calendar Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Gasoline Total	1,457	1,478	1,495	1,505	1,658	1,843	1,931	2,047	2,147	2,223
Diesel Total	4,393	4,411	4,471	4,487	4,842	5,464	5,687	5,943	5,809	6,303
On-road	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Agriculture	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Construction/mining	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Shipping/rail	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Industry	N.A	N.A	N.A	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

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Heating	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Jet Fuel Total	668	672	685	701	781	850	883	964	1,063	1,120
Total Fuel Markets	6,518	6,561	6,651	6,693	7,281	8,157	8,501	8,954	9,019	9,646
Fuel Use Projections (Liters - Million)										
Calendar Year	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**
Gasoline Total	2,235	2,280	2,283	2,398	2,422	2,495	2,570	2,647	2,690	2,715
Diesel Total	6,325	6,340	6,467	6,597	6,728	6,863	7,000	7,140	7,250	7,340
On-road	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Agriculture	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Construction/mining	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Shipping/rail	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Industry	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Heating	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Jet Fuel Total	1,053	1,095	1,139	1,184	1,231	1,281	1,332	1,385	1,410	1,440
Total Fuel Markets	9,613	9,715	9,889	10,179	10,381	10,639	10,902	11,172	11,350	11,495
* Note: N.A.= Not Available. The Peruvian Government does not track end use of diesel.										
Source: Ministry of Energy and Mines										

FAS Lima forecasts that, despite growing demand for biogas (methane) and liquefied petroleum gas (LPG) as transportation fuels, increased automotive ownership and the continuation of the E7.8 requirement will increase demand for ethanol for fuel. Industry sources indicate that growing demand for gasoline has slowed in recent years as taxis and buses increasingly turn to natural gas and liquefied petroleum gas. Demand for these two alternative fuels in 2015 accounted for about 43 percent of total fuel use. This directly affects gasoline and thus ethanol consumption.

Peru's gasoline producers oppose increasing the current ethanol blend rate of 7.8 percent to 10 percent. Peru is a relatively efficient producer of gasoline, and raising the blend rate leads to revenue loss for gasoline producers who supply the market. The surplus gasoline in the market would be exported, potentially at a loss.

The city of Lima and its immediate surroundings account for roughly 65 percent of the country's ethanol and gasoline demand. REPSOL (Spain) and Petro Peru (state-owned) are the Peruvian market's main gasoline suppliers.

IV. Ethanol

Ethanol Used as Fuel and Other Industrial Chemicals (Million Liters)										
Calendar Year	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016e**	**2017e**
Beginning Stocks										
Fuel Begin Stocks	0	0	0	0	0	12	16	0	5	7
Production										
Fuel Production	33	68	70	195	142	165	145	130	111	112
Imports										
Fuel Imports	16	14	12	37	115	110	57	99	109	105
Exports										
Fuel Exports	26	58	64	211	122	106	52	51	44	40
Consumption										
Fuel Consumption	23	24	18	21	123	165	166	173	174	177
Ending Stocks										
Fuel Ending Stocks	0	0	0	0	12	16	0	5	7	7
Balance Check	0	0	0	0	0	0	0	0	0	0
Production Capacity (Million Liters)										
Number of Refineries	1	1	1	2	2	2	2	2	1	1
Nameplate Capacity	126	126	126	230	350	350	350	350	127	127
Capacity Use (%)	26%	54%	56%	85%	41%	43%	38%	35%	87%	88%
Co-product Production (1,000 MT)										
Bagasse	136	281	289	805	586	633	550	504	459	459
Feedstock Use (1,000 MT)										
Sugar Cane	413	850	875	2,438	1,775	1919	1668	1528	1,391	1,391
Market Penetration (Million Liters)										

Fuel Ethanol	23	24	18	21	123	165	166	173	174	177
Gasoline	1,495	1,505	1,657	1,843	1,931	2,047	2,147	2,223	2,235	2,280
Blend Rate (%)	1.5%	1.6%	1.1%	1.1%	6.4%	8.0%	7.8%	7.8%	7.8%	7.8%

Source: Ministry of Agriculture, Private Sector, Ministry of Energy and Mines, FAS Lima analysis
Note: Forecasts are based on the assumption that Peru will continue to reach the E7.8 mandate.

Production:
Since production began in August 2008, Peru has been self-sufficient in fuel ethanol, producing sufficient volumes to supply domestic consumption. However, Peru imports ethanol to balance its exports of high value sugar cane-based ethanol to the European Union. The country finally met the E7.8 requirement in 2013 after a three-year delay. When a plant shutdown in 2015, production capacity dropped. Capacity is forecast to remain the same during 2016 and 2017 at 127 million liters. Production is forecast at 111 million liters for 2016 and 112 million liters for 2017.

By the end of 2011, two production facilities were operational, both located in the state of Piura (roughly 1,000 kilometers north of the capital city of Lima). Coazucar, owned by Grupo Gloria (Peru's largest dairy processor), purchased in 2015 one of the production facilities, Maple Ethanol, renaming it Aurora. The facility produced 110 million liters of ethanol in 2014, about 83 percent of Peru's total ethanol production for that year. However, the plant was decommissioned in 2015 and its 6,000 hectares of sugar cane fields are now used to produce sugar for human and industrial consumption. Nevertheless, the Aurora facility retains ethanol production capabilities.

With the closure of the Aurora plant, the only remaining ethanol plant in Peru is Caña Brava, a $210 million facility owned by the Romero Group. Caña Brava began operations in August 2009. It runs approximately 7,000 hectares of planted sugarcane fields and has a production capacity of 127 million liters per year. Caña Brava plans to expand planted area by an additional 2,000 hectares in 2018.

Peru uses sugarcane as the feedstock for bioethanol production. This sugarcane is cultivated on formerly idle, non-irrigated desert lands. Production to date is centered in Piura where companies take advantage of the favorable weather conditions (i.e., ample sunlight due to proximity to the Equator). Despite an average annual rainfall of only 25 millimeters, sugarcane is cultivated year-round using modern irrigation technology. The sugarcane fields are drip irrigated with water drawn from the Chira River. The river is also fed by the Poechos Reservoir, which has a one billion cubic meter capacity and a discharge rate of four cubic meters per second. The reservoir is 30 kilometers from the Peru-Ecuador border.

A number of sugarcane growers are evaluating the economic feasibility of diverting part of their crop to ethanol production. But sources indicate that there are no immediate plans to initiate commercial operations.

Sugarcane yields can be as high as 200 metric tons (MT) per hectare, although average yields normally are around 140 MT per hectare. Brazil's shorter 180-day growing season produces lower yields of 70 MT per hectare. Sugarcane cultivation in Piura absorbs about 17,000 cubic meters of water per hectare

per year compared to rice that takes upwards of 22,000 cubic meters of water per hectare per season (or about 44,000 cubic meters of water per hectare per year). Rice farmers plant two rice crops per year in Piura's desert environment.

Consumption:
Ethanol consumption for 2017 is forecast at 177 million liters, a slight increase from 2016 due to rising gasoline use. Peru met its ethanol mandate for the first time in 2013, and has continued to reach it since that year. FAS Lima forecasts that Peru will achieve a blend rate of 7.8 percent for 2016 and 2017. Unless there is an unforeseen increase in the ethanol blend mandate, ethanol consumption will only increase as gasoline consumption increases. There is no current discussion within the government to increase the ethanol mandate.

Trade:
FAS Lima forecasts Peru's 2017 fuel ethanol exports at about 40 million liters, a 14 percent fall from 51 million liters in exported in 2015, due to lower production. Fuel ethanol imports in 2017 are forecast at 105 million liters, a 4 percent decrease compared to the previous year.

Ethanol imports of both 2207.10 and 2207.20 H.S. Codes are assessed 6 percent import duty plus 18 percent value-added tax. However, due to the U.S.- Peru Trade Promotion Agreement, U.S. denatured ethanol (2207.20) is only assessed a 3 percent import duty and will be duty free in 2018. Undenatured U.S. ethanol (2207.10) was granted duty free entrance when the agreement entered into force. Peru exports undenatured ethyl alcohol (2207.10). In 2015 it exported 94 million liters (of which 51 million liters were fuel exports destined to the European Union). The largest markets are the Netherlands, Colombia and Ecuador.

Peruvian Undenatured Ethyl Alcohol Exports (220710) (Million Liters)

	2013	2014	2015
World	149	102	94
Netherlands	106	52	51
Colombia	24	18	24
Ecuador	12	6	14

Source: Global Trade Atlas

Peruvian Undenatured Ethyl Alcohol Imports (220710) (Million Liters)

	2013	2014	2015
World	11	10	32
U.S.	7	3	19
Bolivia	10	8	12
Ecuador	2	1	1

Source: Global Trade Atlas

Peruvian Denatured Ethyl Alcohol Imports (220720) (Million Liters)

	2013	2014	2015
World	103	54	80
U.S.	103	54	80

Source: Global Trade Atlas

Peru's ethanol producers receive higher prices in foreign markets than domestically. For example, Peruvian ethanol exported to the European Union (EU) benefits from price premiums for green harvesting (i.e., harvesting without cane field burning) and biological pest control among other more environmentally-friendly measures. Additionally, estimated domestic sea freight charges (e.g., Paita to Lima/Callao) at $0.27 per gallon of ethanol are extremely high compared to the approximate international sea freight charges (Paita-Rotterdam) of $0.34 per gallon of ethanol.

Peruvian ethanol producers contend that sales to the U.S. market are impeded because their product does not qualify to meet biofuel "obligations" (mandates) under the Renewable Fuel Standard (RFS). Peru is therefore ineligible for the $1/gallon blenders tax credit or the Renewable Identification Numbers (RINs), both of which add value to biofuels sold in the United States. Ethanol from Peru can be marketed in the United States, but in reality there is little to no market opportunity for biofuel that cannot meet RFS obligations. Biofuels coming from overseas can fulfill RFS obligations if the biofuel plant was "grandfathered in" because it supplied the market prior to 2007 (a situation that does not apply to Peru ethanol producers) or foreign producers can certify that the biofuel: 1) comes from feedstock grown on lands that were cultivated prior to 2007; 2) is covered by a feedstock tracking and certification scheme that insures ineligible feedstock are excluded; and 3) meets a minimum environmental sustainability standard of 20% greenhouse gas savings over fossil fuel or 50% to qualify for an advanced non-cellulosic fuel. Desert lands in Peru used to produce ethanol were converted after 2007, and therefore ethanol produced using feedstock from those lands, cannot meet RFS obligations as defined under the Clean Air Act.

The U.S. Clean Air Act defines the types of renewable biomass used to produce biofuel eligible to meet RFS obligations. The passage relevant to the case of ethanol currently produced in Peru defines renewable biomass as, "planted crops and crop residue harvested from agricultural land cleared or cultivated at any time prior to the enactment of this sentence (e.g. November 2007) that is either actively managed or fallow, and non-forested." The intent of this rule is to ensure that the cultivation and harvest of feedstock used to produce biofuels to meet RFS obligations does not result in massive atmospheric carbon releases which can occur when virgin lands, especially primary forests or high-carbon content peat and grasslands, are cultivated for the first time. The Clean Air Act did not provide specific exclusions for land types like deserts or maximum soil content for organic material. The U.S. EPA, the RFS implementing agency, apparently does not have the latitude to interpret this rule further to exclude desert lands.

V. Biodiesel

Production:

Peru has not produced biodiesel since 2014, and FAS Lima forecasts that Peru will not produce biodiesel in 2016. However, due to the antidumping duties assessed to Argentinean imports, domestic production is expected to resume in 2017, reaching 60 million liters. Sources indicate that despite the existence of a biofuel promotion law (Law 28054) that prioritizes domestic biodiesel production and

procurement, local fuel distributors will continue to import more affordable Argentine and Indonesian biodiesel. Prior to 2014, Peru produced biodiesel using crude palm oil as a feed stock. Petroperu, the entity that regulates biodiesel production and imports, claims that palm diesel solidifies at high altitudes, damaging truck engines. This shuttering of local biodiesel processing plants has adversely affect Peru's oil palm growers who see their market vanishing.

Biodiesel (Million Liters)										
Calendar Year	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016 e**	**2017 e**
Beginning Stocks	1	2	3	2	2	7	17	26	35	36
Production	10	10	32	32	18	10	0	0	0	60
Imports	111	166	162	178	271	335	347	350	415	354
Exports	0	0	0	0	0	0	0	0	0	0
Consumption	120	175	195	210	284	335	338	341	341	341
Ending Stocks	2	3	2	2	7	17	26	35	36	36
Balance Check	0	0	0	0	0	0	0	0	0	0
Number of Biorefineries	1	1	2	2	2	2	2	2	2	2
Nameplate Capacity	200	200	350	350	350	350	350	350	350	350
Capacity Use (%)	5%	5%	9%	9%	5%	3%	0%	0%	0%	0%
Feedstock Use (1,000 MT)										
Crude Palm Oil	9	9	29	29	17	9	0	0	0	55
Market Penetration (Million Liters)										
Biodiesel, total use	120	175	195	210	284	335	338	341	341	341
Blend Rate (%)	2.7%	3.9%	4.0%	3.8%	5.0%	5.6%	5.8%	5.4%	5.4%	5.4%
Diesel, total use	4,471	4,487	4,842	5,464	5,687	5,943	5,809	6,303	6,325	6,340

Source: Peruvian Customs, PetroPeru, Private Sector, Global Trade Atlas, FAS Lima Analysis

Peruvian Biodiesel Imports – 3826.00

(Million Liters)					
	2012	2013	2014	2015	2016e
World	271	289	298	330	355
Argentina	188	212	298	275	239
Indonesia	43	10	0	40	58

Note: Assume all product is B100.
Source: Global Trade Atlas

Peruvian Petroleum Oils and Preparations Containing up to 30 percent Biodiesel Imports – 2710.20 (B100-equivalent, Million Liters)					
	2012	2013	2014	2015	2016e
World	0	153	165	68	60
U.S.	0	153	164	68	60

Note: The assumed average blend rate for imports is B30.
Source: Global Trade Atlas

Consumption:
With the blend rate holding quite steady at or just slightly above B5 since 2012, biodiesel use is expected to remain constant. FAS Lima forecasts biodiesel consumption at 341 million liters in both 2016 and 2017.

Trade:
Petroperu is currently importing 100 percent of the nation's biodiesel. FAS Lima forecasts 2017 biodiesel imports at 354 million liters, down slightly from the 2016 forecast due to the projected increase in domestic production. Biodiesel imports, both 3826.00 (covering blends above B30 to B100) and 2710.20 (petroleum oils containing 1-30% biodiesel), enter Peru duty free. Peru imposed temporary anti-dumping and countervailing duties on U.S. biodiesel in December 2009 in response to large shipments that began in December 2008. From that date until the imposition of temporary duties, U.S. shipments totaled 85 million liters, which was equal to half of Peru's consumption in 2009. U.S. shipments stopped immediately following the imposition of these temporary duties, with the exception of two final shipments in March and June of 2010. On August 23, 2010, Peru's National Institute for the Defense of Competition and the Protection of Intellectual Property (INDECOPI) published Resolution 151-2010-CFD-INDECOPI imposing permanent countervailing duties and anti-dumping duties on all U.S. shipments of B51-100 of $178 per metric ton and $212 per metric ton, respectively. U.S. biodiesel shipments to Peru largely resumed in 2013. These shipments are almost exclusively from Harmonized System Chapter 27 (B30 and below) to avoid higher duties.

INDECOPI published resolution 011-2016/CDB-INDECOPI on January 25, 2016, establishing countervailing duties on Argentinean biodiesel. This process was initiated after allegations from Palmas del Espino (Grupo Romero) who halted production at its Tocache plant, claiming unfair competition from biodiesel from Argentina. As a result of these countervailing duties, FAS Lima forecasts that B100 Chapter 38 imports from Argentina will be restrained but not stop, but access for B100 Chapter 38 imports from Indonesia could rise. The outcome should create some opportunity for Peru biodiesel plants to begin production of biodiesel in 2017. The countervailing duties will be as follows:

Countervailing Duties Against Argentinean Biodiesel

Producer	$/MT
LDC Argentina	15.4
Molinos Rio La Plata Renova Vicentin	17.1
Cargill	24.1
Aceitera General Deheza Bunge Argentina T6 Industrial	31.3
Other producers/exporters	208.2

Note: These penalties compare to the price of soy oil biodiesel shipped from Argentina, Rosario (fob, excluding export tax) ranging from $785-865/ton from March through August 2016.
Source: INDECOPI

VI. Advanced Biofuels

There is currently no ongoing research on advanced biofuels in Peru. There is also no policy in place to support advanced biofuels research.

VII. Notes on Statistical Data

Ethanol production in Peru utilizes the diffusion method, adopted from Brazilian technology. This method consists of shredding harvested sugarcane stalks very thinly, then moving the shreds through thirteen consecutive warmer water (70-80°C) showers. The water from the final shower is allowed to ferment with alcohol producing yeast. Once the fermentation process is completed, the ensuing "liquor" is distilled. Industry sources clarify that this procedure is more efficient than traditional milling. The continuous flow also reduces plant idle time to a minimum. In order for a 350,000 liter per day ethanol plant to operate efficiently, 20 hectares of sugarcane must be processed per day. With an average sugar content of 17 percent, one metric ton of sugarcane produces roughly 170 kilograms of sugar or an amount equivalent to 80 liters of ethanol. One metric ton of sugarcane at the same time also produces some 330 kilograms of bagasse (i.e., fibrous material that remains after sugarcane stalks are crushed to extract their juice).

The bagasse, or sugarcane fiber, is used to produce 660 kilograms of steam. Steam-turned turbines generate the processing plant's electricity needs. Ethanol operations utilize about 8 megawatts per month. The excess energy produced (normally 2-4 megawatts) is sold to the national power grid.

The following is a summary of sources of all tables included in this report:

Page 3:
Table: Fuel Use History
Source: OSINERMIN
* Note: N.A.= Not Available. The Peruvian Government does not track different end markets for diesel use

Table: Fuel Use Projections:
* Note: N.A.= Not Available. The Peruvian Government does not track different end markets for diesel use
Source: Ministry of Energy and Mines

Page 4:
Table: Ethanol Used as Fuel and Other Industrial Chemicals (Million Liters)
Source: Ministry of Energy and Mines, Ministry of Agriculture, Private Sector, FAS Lima
Conversion: 1MT of sugar cane = 80 liters of ethanol
1MT of sugar cane = 330 kilograms of bagasse

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Ethanol Trade: In this report, all exports of HS 2207.10 and 2207.20 to Europe is for use as fuel, while exports to other countries are for beverage or other industrial use. All imports of HS 2207.10 and 2207.20 from the U.S. are fuel grade ethanol, while imports from other countries are for use as beverage or other industrial uses.

Table: Peruvian Undenatured Ethyl Alcohol Exports
Source: Peruvian Customs Authority as collected and reported by Global Trade Atlas

Table: Peruvian Undenatured Ethyl Alcohol Imports
Source: Peruvian Customs Authority as collected and reported by Global Trade Atlas

Table: Peruvian Denatured Ethyl Alcohol Imports
Source: Peruvian Customs Authority as collected and reported by Global Trade Atlas

Domestic sea freight charges: Private Sector Sources.

Page 8:
Table: Biodiesel (Million Liters):
Source: Ministry of Energy and Mines, Ministry of Agriculture, Private Sector
Conversion: 1MT of CPO = 1,087 liters of biodiesel

Page 9:
Table: Peruvian Biodiesel Imports
Source: Peruvian Customs Authority as collected and reported by Global Trade Atlas
Assume all product traded is pure biodiesel (B100).

Table: Peruvian Petroleum Oils and Preparations Containing up to 30 percent Biodiesel Imports
Source: Peruvian Customs Authority as collected and reported by Global Trade Atlas
Assume all product traded under harmonized trade code 2710.20 has 30 percent biodiesel content. Therefore, original data reported is multiplied by 0.30 to derive B100-equivalent.

Page 10:
Table: Counter Veiling Duties Against Argentinean Biodiesel

Source: INDECOPI