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# GAIN Report

Global Agricultural Information Network

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## **Philippines**

### **Biofuels Annual**

#### **Philippine Biofuels Situation and Outlook**

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**Report Highlights:**

The Philippines has for years mandated biodiesel and ethanol blending in local petroleum diesel fuel and gasoline. As the country is the world's top coconut oil producer, there have been no compliance issues in meeting the mandated two percent blend for biodiesel. Compliance with the current ten percent mandate for ethanol blend in gasoline, however, continues to be a challenge due to inadequate capacity of existing sugarcane distilleries, low productivity and high production costs. Challenges to local production are further compounded by commitments under regional free trade agreements that diminish incentive for additional infrastructure development. As result, imported ethanol is expected to satisfy the majority of domestic demand (i.e. the mandated blend in gasoline) for at least the next several years.

**Post:**  
Manila

**Executive Summary:**

The Philippines Biofuels Act of 2006 (RA 9367) mandated the blending of biodiesel and ethanol in all locally distributed diesel and gasoline (currently at 2 percent and 10 percent, respectively). Sugarcane and coconut oil are the preferred Philippine ethanol and biodiesel feedstocks, respectively. Since 2007, when RA 9367 took effect, compliance with the mandated biofuels blends has been mixed, with biodiesel doing well and ethanol encountering more challenges.

RA 9367 disallows the importation of biodiesel and there have been no compliance issues with the mandated biodiesel blend since 2007. The current biodiesel mandated blend is at 2 percent. The Philippine Department of Energy (DOE) has programmed the implementation of a higher 5 percent biodiesel blend for 2015. Although local industry and the Philippine Coconut Authority (PCA), for the past few years, have actively lobbied for an earlier implementation of the higher blend rate, the DOE has indicated that an ongoing impact study on fuel prices must be completed before any action can be taken. According to the DOE, the blend rate will be raised to ten percent in 2020, and to 20 percent blend by 2025.

Compliance with the current mandated 10% ethanol-gasoline blend continues to be a challenge due to the inadequate capacity and competitiveness of existing sugarcane distilleries. These competitive challenges are compounded by trade liberalization commitments under the ASEAN Economic Community (AEC). As a result, imported ethanol is expected to satisfy the gap between local production and mandated blend requirements. Based on reports from the DOE, the 10 percent blend will be increased to 20 percent by 2020. In order to satisfy this ambitious goal with domestic supply, the DOE estimates that roughly 15 additional bioethanol plants will be needed.

**Report:**

**I. Policy and Programs**

Fuel Use Projections (Million Liters)										
Calendar Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Gasoline Total	3795	3891	3987	4082	4178	4274	4370	4465	4561	4657
Diesel Total	7343	7478	7613	7748	7883	8017	8152	8287	8422	8557
On-road	5772	5878	5984	6090	6196	6302	6408	6514	6620	6726
Agriculture										
Construction/mining										
Shipping/rail										
Industry										
Heating										
Jet Fuel Total	1893	1932	1972	2011	2050	2089	2129	2168	2207	2246
<b>Total Fuel Markets</b>	1	1	1	1	1	1	1	0	0	0

Note: Please see Statistical Section for assumptions used

The lead agency responsible for the Philippine Biofuels Program is the DOE. The country's biofuels strategy is expressed in the National Biofuels Plan (NBP) which is based on the Philippine Energy Plan (PEP). The PEP reflects the Philippine government's (GPH) mission to ensure the delivery of secure, sustainable, sufficient, affordable and environment-friendly energy to all economic sectors. The NBP is a preliminary assessment of the previous year's NBP, and outlines the short-, medium- and long-term plans of the National Biofuels Board (NBB). The NBB is chaired by the DOE. Both the PEP and the NBP are often reviewed, and assumptions adjusted. The PEP 2013-2030, however, has not been released and the DOE expects its issuance before the end of 2014. Unless otherwise specified, energy figures in this report are largely based on preliminary data from the DOE, the NBP 2013-2030 and the PEP 2012-2030.

The Biofuels Act was signed in January 2007 making the Philippines the first country in Southeast Asia to have biofuels legislation in place. Republic Act (RA) 9367 mandated a minimum one percent (%) biodiesel blend in all diesel fuels by February 2007, to increase to a two percent (2%) blend after 2 years. RA 9367 also mandated that by February 2009, at least five percent (5%) ethanol shall comprise the annual total volume of gasoline sold and distributed by oil companies in the country, increasing to a 10% blend (with certain exempt gasoline grades) by February 2011. Implementation of the 10% blend was subsequently extended by the Philippine Department of Energy (DOE) to August 2011 by virtue of Department Circular No. 2011-02-0001 (refer to Ethanol, Production Section). The suspension of implementation led to a decline in production that year. Despite market incentives, compliance with the ethanol blend using locally produced ethanol has fallen far short of target levels.

Renewable energy (RE) sources, including biofuels, have played a considerable role in the Philippines primary energy supply for a number of years. In 2008, when the Renewable Energy Act or Republic Act 9513 (RA 9513) was signed, the country was world's second largest producer of geothermal energy (next to the U.S.). It was also the first country in Southeast Asia to establish a commercial wind farm as well as the first grid-connected solar photovoltaic power plant. In 2011, RE sources accounted for 41% of the country's primary energy supply. The Philippine government (GPH) has set a goal to triple RE capacity through 2030 under the Philippines energy plan. Farmers and/or entities engaged in the plantation of biofuels feedstock's' (as certified by the DOE) within 10 years from the affectivity of RA 9513) shall be entitled to duty-free importation and value added tax (VAT) exemption on all types of agricultural inputs and machinery.

Philippine Gross Domestic Product (GDP) continued to expand growing 7.2% in 2013, up from the six to seven percent (6-7%) government target range for the year and the 6.6% expansion in 2012. Driving GDP growth last year were industry (9.5%) and services (7.1%). Agriculture expanded by a feeble 1.1% in 2013, below the GPH growth target of 4.3-5.3%. For 2014, the GPH forecasts GDP growth at 6.5-7.5% driven mainly by sustained and robust consumption, and enhanced by vibrant infrastructure spending. In the first half of 2014, GDP expanded by 6.4%, up from 5.6% in the first three (3) months of 2014, and higher than the fourth-quarter 2013 figure of 6.3%. The GPH intends to increase spending on infrastructure from an estimated 3% of GDP, to around 5% of GDP by 2016.

According to economic planners, sustaining the country's economic growth will be difficult given current infrastructure constraints. Although the Aquino administration is aggressively pursuing a

public-private partnership (PPP) initiative in the country's infrastructure development program, implementation of most PPP projects has been delayed. Inadequate investments in the local power sector through the years, and increasing demand of the expanding economy (and population); have resulted in very thin power reserves. According to the DOE, current rotational brownouts in Mindanao are to continue through 2015 due to inadequate power generating plants. It also adds that power outages in Luzon and Visayas are unavoidable when large and aging power plants breakdown or shut down for maintenance work. Recently, the DOE warned of a power crisis in 2015, and has recommended the granting of emergency powers to the President to avert the situation.

Transportation continued to be the dominant energy consuming sector in 2011, comprising almost 35% of total energy demand, followed by residential (26%), industrial (26%), commercial (12%) and the agriculture, fish and forestry sectors, according to the PEP 2012-2030.

<b>FINAL ENERGY CONSUMPTION – 2011</b>		
by Sector	%	MTOE Equivalent
Transport	34.7	7.98
Residential	26.1	6.00
Industrial	25.9	5.96
Commercial	11.9	2.74
Agriculture, Fish & Forestry	1.3	0.30

Note - Total Energy Consumption (MTOE) = 23.0

Source: PEP 2012-2030 and Post computations (of MTOE equivalent)

According to the DOE, the country's total demand of finished petroleum products in 2012 increased 3.9% to 110,991 MB from 106,857 MB in 2011. Gasoline demand grew 6.0% in 2012, while diesel oil demand rose by 4.5% from the 2011 level. Kerosene demand increased 4.0% during the same period. However, demand of liquefied petroleum gas (LPG) and fuel oil dropped by 1.5% and 0.4 %, respectively.

In 2012, diesel oil had the highest demand among petroleum products at 42% or 46,616 MB, followed by unleaded gasoline (23% or 25,861 MB), fuel oil (11% or 12,542 MB), LPG (11% or 12,431 MB), kerosene (11% or 12,320 MB) and other products (1% or 1,221 MB), according to the DOE. The percentage share of petroleum products was converted to MLI using the conversion rate:  $MLi = MB \times 59 \times 1,000 / 1,000,000$ .

Infrastructure woes plague the domestic transport sector. Flights are usually delayed as departures and arrivals are constrained by the limited number of runways. There is serious congestion in the major harbors in Manila, and the slow movement of goods has resulted in increasing prices of imported items. Additionally, the mass public railway system in Metro Manila has frequently breaks down due to old and obsolete equipment and inadequate maintenance. Despite the infrastructure constraints, fuel use is still expected to increase as the population and the economy continue to expand.

Preliminary data from the DOE shows a decline in overall fuel demand in 2016, compared to the 2015 level (refer to Ethanol and Biodiesel Consumption sections) with gasoline, diesel and aviation fuel demand decreasing during the period. The Fuel Use Table in this report assumes overall fuel demand (gas, diesel and Aviation) will increase in equal increments as a result of the increasing population and

the expanding economy. Using the 2015 and 2024 gasoline and diesel demand estimates from the DOE, annual increments (96 MLi and 135 MLi for gasoline and diesel, respectively) were arrived at by dividing the difference by nine (9) or the number of years between 2015 and 2024. Other critical assumptions are provided in the Statistical Information at the end of this report.

## II. Ethanol

Ethanol Used as Fuel and Other Industrial Chemicals (Million Liters or MLi)										
Calendar Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Beginning Stocks</b>	0	0	0	0	0	0	0	0	0	0
Fuel Begin Stocks	0	0	0	0	0	0	0	0	0	0
<b>Production</b>										
Fuel Production	0	0	1	23	10	4	16	72	110	175
<b>Imports</b>										
Fuel Imports	0	3	13	64	140	215	248	297	300	290
<b>Exports</b>										
Fuel Exports	0	0	0	0	0	0	0	0	0	0
<b>Consumption</b>										
Fuel Consumption	0	3	14	87	150	219	264	369	410	465
<b>Ending Stocks</b>										
Fuel Ending Stocks	0	0	0	0	0	0	0	0	0	0
<b>Production Capacity</b>										
Number of Refineries	0	0	1	2	3	3	4	4	5	7
Nameplate Capacity	0	0	9	49	79	79	133	133	163	208
Capacity Use (%)	0%	0%	11%	47%	13%	5%	12%	54%	67%	84%
<b>Co-product Production (1,000 MT)</b>										
Bagasse			5	106	46	18	74	332	508	808
Co-product B										
<b>Feedstock Use (1,000 MT)</b>										
Feedstock A	0	0	15	354	154	62	246	1108	1692	2692
<b>Market Penetration (Liters - specify unit)</b>										
Fuel Ethanol	0	3	14	87	150	219	264	369	410	465
Gasoline	3795	3891	3987	4082	4178	4274	4370	4465	4561	4657
Blend Rate (%)	0.0%	0.1%	0.4%	2.1%	3.6%	5.1%	6.0%	8.3%	9.0%	10.0%

Note: 2014 and 2015 production and consumption numbers are Post's estimates

### Production, Ethanol

Though a minor player in the international sugar market due to its high production costs, the Philippines is a major sugarcane producer, and typically one of the largest U.S. sugar quota recipients. Although the Sugar Regulatory Administration (SRA) had initially expected 2013 production to reach 2.45 million tons (MMT), damage incurred by Typhoon Haiyan resulted in totals for the year only reaching 2.38 MMT (down less than one percent from the previous year). Without any expansion in sugarcane production area foreseen by SRA, 2014 raw sugar production is forecast to reach 2.45 MMT. Raw sugar production for 2015 is projected slightly higher.

Philippine ethanol production utilizes sugarcane and molasses for its feedstock. The SRA uses a 65 liter/metric ton (Li/MT) conversion rate in the Ethanol Table with a sugarcane co-product (bagasse)

recovery rate of 300 kilos (kg) per ton cane. SRA (an agency within the Philippine Department of Agriculture) is mandated to secure both the production of sugar and feedstock for ethanol under the Biofuels Act.

In 2013, the Philippine ethanol industry had four (4) active players with a combined capacity of 133 million liters (MLi), unchanged from the 2012 level, according to the SRA. However, local ethanol production increased 350% from 16 MLI in 2012 to 72 MLI in 2013 due to more capacity utilization. Philippine ethanol production is expected to increase through 2015 as three (3) more plants are likely to operate this year (one in early 2014 and two more plants in the last quarter of 2014). Despite the increase in ethanol plants and aggregate capacity, analysts predict local output will still fall short of demand requirements due to inadequate investments.

Competitiveness of the local sugarcane industry due to low productivity is the major challenge, according to industry contacts. The Philippines has one of the lowest average sugarcane yields in Asia. At the same time, trade liberalization under existing free trade agreements, diminishes incentive for infrastructure investment.

#### Consumption, Ethanol

The following bioethanol demand table is based on DOE data for the period 2014-2030 (for a low carbon scenario). The current 10% blend is projected to be raised to 20% by 2020, and likely to stay at this level through 2030. By 2020, the DOE also projects at least 15 additional ethanol plants (at 30 MLI capacity per plant) will be needed to meet the blend requirement.

<b>Bioethanol Demand Low Carbon Scenario</b>	<b>Gas Demand</b>	<b>Blend</b>	<b>Supply Req't/ Fuel Displaced</b>	<b>Additional Plants Required</b>
<b>Year</b>	<b>MLi</b>	<b>%</b>	<b>MLi</b>	<b>Required</b>
2014	3815	10	382	-
2015	3795	10	379	-
2016	3770	10	377	-
2017	3801	10	380	-
2018	3901	10	390	-
2019	4007	10	401	1
2020	4302	20	860	15
2021	4381	20	876	1
2022	4467	20	893	-
2023	4559	20	912	1
2024	4657	20	931	-
2025	4663	20	933	1
2026	4757	20	951	-
2027	4843	20	968	1
2028	4937	20	987	-
2029	5006	20	1001	1
2030	5052	20	1010	-

Note: 10% blend in 2012, 20% by 2020

Source: Philippine Department of Energy

Increasing motor vehicle sales (and registration) over the past few years will help ensure higher gasoline consumption. In 2013, according to data from the Philippine Land Transportation Office (LTO), there were close to 7.7 million registered motor vehicles (MVs) in the Philippines, up 2% from the previous year's level. Since 2011, the number of registered MVs has increased by an average 9.3%, according to LTO data. Motorcycles/tricycles, utility vehicles and cars were consistently the top three vehicle types registered.

<b>Number of Motor Vehicles Registered by MV Type</b>					
<b>Annual 2011-2013</b>					
<b>MV Type</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>% Change</b>	
				12/11	13/12
Cars	828,587	852,255	868,148	2.86	1.86
UV	1,748,402	1,771,310	1,794,572	1.31	1.31
SUV	284,099	310,521	346,396	9.30	11.55
Truck	329,385	341,572	358,445	3.70	4.94
Buses	34,478	33,588	31,665	-2.58	-5.73
MC/TC	3,881,460	4,116,690	4,250,667	6.06	3.25
Trailer	32,531	37,459	40,145	15.15	7.17
<b>TOTAL</b>	<b>7,138,942</b>	<b>7,463,395</b>	<b>7,690,038</b>	<b>4.54</b>	<b>3.04</b>

UV – Utility vehicle

SUV – Special utility vehicle

MC/TC – Motorcycle/Tricycle

Source: Philippine Land Transportation Office

The number of purchases and registered MVs is likely to continue increasing through at least 2016 as a result of rising incomes and low interest rates.

### Trade, Ethanol

Fuel ethanol imports reached 297 MLi in 2013, up roughly 19% from the 2012 level. Ethanol imports from the U.S. surged over 980% from 6.2 MLi in 2012 to 74.6 MLi in 2013, according to preliminary data from the SRA. U.S. ethanol imports had a 25% share of overall ethanol imports, followed by Brazil and Thailand with market shares of 15% and 11%, respectively.

<b>Ethanol Imports (Million Liters), 2011-13</b>			
<b>Country of Origin</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
Australia	-	27.1	17.4
Brazil	-	-	45.3
Indonesia	3.2	-	6.2
Korea	36.3	3.5	2.1
Philippines (Subic)	67.3	93.0	49.3
Singapore	17.8	23.0	2.8
Thailand	24.4	88.8	38.8
USA	56.1	6.9	74.6
Vietnam	9.8	6.2	27.5
Others	-	-	33.5
<b>Total</b>	<b>215.0</b>	<b>248.4</b>	<b>297.4</b>

Source: Sugar Regulatory Administration

The Subic Freeport is a Special Economic Zone of the Philippine Economic Zone Authority (PEZA). In 2013, PEZA-registered ethanol companies enjoyed special incentives (tax holidays and credits). The countries of origin of the ethanol imports, however, are not specified by the SRA data.

Executive Order No. 61 (EO 61) signed in October 2011 modified MFN tariffs for various products. Ethanol tariffs were left unchanged at 10%, and will remain at this level through 2015. However, if certified by the DOE that the imported ethanol will be used for the DOE's Fuel Ethanol Program (i.e. fuel-blending purposes), an additional 1% tariff will be imposed. However, under the ASEAN Economic Community (AEC), the tariff will drop to 5% by 2015.

Despite increasing local ethanol production, imports are still expected to increase in 2014. Imports in 2015, however, are likely to slightly decline as production inches upward due to somewhat improved capacity utilization.

#### Ending Stocks, Ethanol

No ending fuel ethanol stocks are expected through 2015.

### III. Biodiesel

Biodiesel (Million Liters)										
Calendar Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
<b>Beginning Stocks</b>		0	1	2	7	6	16	16	18	0
<b>Production</b>	0	49	66	137	124	133	125	130	112	232
<b>Imports</b>	0	0	0	0	0	0	0	0	0	0
<b>Exports</b>	0	0	0	0	0	0	0	0	0	0
<b>Consumption</b>	0	48	64	131	125	123	125	128	130	232
<b>Ending Stocks</b>	0	<u>1</u>	<u>2</u>	<u>7</u>	<u>6</u>	<u>16</u>	<u>16</u>	<u>18</u>	<u>0</u>	<u>0</u>
<b>Production Capacity</b>										
Number of Biorefineries	8	8	8	10	8	9	9	9	11	11
Nameplate Capacity	350	350	350	436	350	393	393	393	585	585
Capacity Use (%)	0.0%	14.0%	18.8%	31.3%	35.3%	33.9%	31.8%	33.1%	19.1%	39.7%
<b>Feedstock Use (1,000 MT)</b>										
Feedstock A	0	49	66	137	124	133	125	130	112	232
Feedstock B	0	0	0	0	0	0	0	0	0	0
Feedstock C	0	0	0	0	0	0	0	0	0	0
Feedstock D	0	0	0	0	0	0	0	0	0	0
<b>Market Penetration (Liters - specify unit)</b>										
Biodiesel, on-road use	0	48	64	131	125	123	125	128	130	232
Diesel, on-road use	5,772	5,878	5,984	6,090	6,196	6,302	6,408	6,514	6,620	6,726
Blend Rate (%)	0.0%	0.8%	1.1%	2.2%	2.0%	2.0%	2.0%	2.0%	2.0%	3.4%
Diesel, total use	7,343	7,478	7,613	7,748	7,883	8,017	8,152	8,287	8,422	8,557

Note: 2012 through 2015 number are Post's estimates

#### Production, Biodiesel



Philippine copra production in 2014 is expected to decline to 2.4 MMT, down from over 2.65 MMT in 2013 and consistent with expectations from industry. According to industry, the decline was anticipated following 2 successive years of increasing output (which is usual in the biological cycle of coconut palms), as well as due to the devastation caused by super typhoon Haiyan in November 2013. Haiyan damaged an estimated 34 million trees in Eastern Visayas, according to the GPH. This translates to an estimated 245,000 MT of copra annually, according to industry. Copra production in 2015 is likely to again decline to 2.35 MMT due to the spreading scale insect infestation of coconut trees in the Southern Luzon provinces.

There are an estimated 50 active CNO mills in the country, and around 20 cater to the export market and roughly 30 concentrate in servicing domestic CNO needs, according to industry contacts. Coconut methyl ester (CME) is the main Philippine biodiesel feedstock, and is an oleochemical derived from CNO, which is a product from crushing copra, the dried meat of the coconut. Oleochemicals are used in the manufacture of soaps, detergents and other cosmetic items and toiletries. The following copra: CNO: CME conversion rate is used in this report based on the Coconut Industry Development Roadmap (2011-2016) of the Philippine Coconut Authority (PCA).

1 kg. Copra = 0.63 kg. CNO  
 1kg. CNO = 1 liter CME

A one percent blend mix is estimated to require roughly 70,000 MLi of biodiesel. Despite declining copra output through 2015, the PCA remains optimistic the local industry can supply the CME requirements to support a higher 5% blend (Consumption, Biodiesel).

According to the DOE, there are 11 operational biodiesel refineries in 2014 (registered with the Philippine Board of Investments) with an aggregate annual capacity of approximately 585 MLi. In 2012, the same number of refineries was registered but only nine (9) were operational. Total capacity increased 48% in 2014 compared to the 393 MLi reported in the previous report.

Production numbers (2007 to 2011) in the Biodiesel PSD are largely based on the following table as provided by the NBP 2013-203. Production estimates for 2013 through 2015 are Post estimates based on the expected blend requirements.

<b>Actual CME Production, 2007-2015</b>	
<b>(in Million Liters)</b>	
Year	Actual Production
2007	49.10
2008	65.67
2009	136.52
2010	123.55
2011	132.99
2012*	125.00
2013*	130.00
2014*	112.00
2015*	132.00

\*Post estimate

Source: National Biofuels Plan 2013-2030

Consumption, Biodiesel

There have been no major issues in complying with the mandated biodiesel blend using locally produced CME since the implementation of RA 9367. RA 9367 mandated the use of a minimum 1% biodiesel blend in all diesel fuels by February 2007, to increase to a 2% blend by 2009. Following is the historical biodiesel consumption at the initial blend rates of 1% and 2% per the NBP 2013-2030.

<b>Actual CME Consumption, 2007-2015</b>	
<b>(in Million Liters)</b>	
Year	Actual Consumption
2007	48.48
2008	64.48
2009	130.93
2010	124.51
2011	122.97
2012	125.00*
2013	128.00*
2014	130.00*
2015	132.00*

\*Post estimate

Source: National Biofuels Plan 2013-2030

The predicted increase in the mandated biodiesel blend from the current 2% to 5% in 2013 (as stated in the previous annual report) did not happen. According to a press article, in June 2013, the NBB (headed by the DOE) reportedly approved the blend increase to 5%, and indicated that the National Economic Development Authority (NEDA) was conducting a study on the effects of the new biodiesel blend on fuel prices. The same article adds that results of the NEDA study would be incorporated into a final report by the NBB. The NBB final report, however, has not yet been finalized.

Based on the DOE’s projected biodiesel demand (from 2014 to 2030) provided below, the higher 5% blend is programmed for 2015. The blend rate % in the biodiesel PSD assumes implementation of the 5% blend would be mid-2015. Assuming the 5% blend will be implemented in July 2015, the average blend rate for the entire 2015 would be around 3.4%. The mandated blend is projected to increase further to 10% by 2020, increasing again to 20% by 2025, according to the DOE. By 2020, an additional 10 bio-refineries would be required with a capacity of 44 MLi per plant.

<b>Biodiesel Demand</b>				
<b>Low Carbon Scenario</b>	<b>Diesel Demand</b>	<b>Blend</b>	<b>Supply Req't/ fuel displaced</b>	<b>Additional Plants Required</b>
<b>Year</b>	<b>(MLi)</b>	<b>%</b>	<b>(MLi)</b>	
2014	7177	2	144	-
2015	7343	5	367	-
2016	7176	5	359	-
2017	7310	5	365	-
2018	7508	5	375	-
2019	7710	5	386	-
2020	7923	10	792	10
2021	8092	10	809	-
2022	8251	10	825	-
2023	8405	10	841	1

2024	8557	10	856	-
2025	8694	20	1739	20
2026	8781	20	1756	-
2027	8864	20	1773	1
2028	8920	20	1784	-
2029	8997	20	1799	-
2030	9031	20	1806	1

Source: Philippine Department of Energy

### Trade, Biodiesel

According to EO 61, CME is classified under the tariff heading 3824.90.90B. There are no records in the Global Trade Atlas (GTA) under this heading, however. There are also no records under 2710.20.

It is unlikely that any importation of CME for fuel use was, or will be made during the timelines specified in the Biodiesel PSD, since there is no provision for biodiesel importation in the Biofuels Act.

Most items under the grouping of 2710 and 3824.90.90 are levied a 3% MFN tariff through 2015 but may be imported duty-free if coming from ASEAN-member countries through 2015 under the AEC.

In addition to the various tariff headings, the entry of smuggled fuel has made the tracking of biodiesel trade very challenging. Biodiesel imports under tariff code 3826 (or Biodiesel And Mixtures Thereof, Not Containing Or Containing Less Than 70% By Weight Of Petroleum Oils Or Oils Obtained From Bituminous Minerals) spiked in 2012, according to GTA exporter data. According to contacts, they could be fuel additives inappropriately declared as biodiesel. The same source considers the imported volume (669 MLi) to be excessively high.

### Ending Stocks, Biodiesel

Biodiesel stocks are expected to be depleted by the end of 2014 due to tightness in CNO supply. Stocks are likely to remain nil through the end of 2015 as a result.

## **IV. Statistical Information**

- 2015 and 2024 gasoline and diesel estimates from the DOE were used as extreme values and their difference divided by 9 years to arrive at equal annual increments.
- Gasoline and diesel use from 2016 onwards were obtained adding the derived annual increments through 2024.
- Jet Fuel values were derived by multiplying total fuel use by 11.1%, or the percentage of kerosene/Avturbo in the total petroleum products demand, PEP 2012-2030.
- On-road diesel use was obtained by multiplying total diesel use by 78.6%, which approximates the energy consumption of road transport use road in the PEP 2011-2030.