Required Report - public distribution

Date: 6/20/2017

GAIN Report Number: ID1714

Indonesia

Biofuels Annual

Indonesia Biofuels Annual Report 2017

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Report Highlights:
Indonesia's Ministry of Energy and Mineral Resources (MEMR) reports that 2016 biodiesel production reached 3.656 billion liters. Post expects 2017 biodiesel production to decline to 2.9 billion liters based on MEMR reports that biodiesel procurement will decline slightly. 2018 biodiesel production is estimated at 3.3 billion liters, assuming average production, the prevalence of minimal export demand and stable domestic consumption. Likewise, MEMR data states that 2016 biodiesel consumption reached 3.008 billion liters, while 2017 consumption is expected to drop to 2.8 billion liters based on MEMR reports of slightly lower demand. Trade data states that Indonesia's 2016 exports reached 478 million liters. First quarter 2017 biodiesel exports are low, likely in response to low fossil diesel prices. As a result, Post expects that 2017 exports will decline to 200 million liters. 2018 exports are projected to remain at 200 million liters, assuming stable diesel prices and no changes to importing countries biofuels policies.

Post:
Jakarta

I. Executive Summary

Indonesia's biofuels program is centered on palm oil-based biodiesel and the development of Indonesia's on-road domestic market. Indonesian ethanol production is molasses based. There is no fuel ethanol production in Indonesia, although there are 14 ethanol plants in Indonesia producing non-fuel ethanol for the medical industry, cosmetics, and export. Indonesia's palm oil industry has created a biodiesel support program which is funded via a levy on palm oil exports. Revenues from the levy are used to offset the difference between fossil diesel and biodiesel prices for Indonesian consumers.

Indonesia's Ministry of Energy and Mineral Resources (MEMR) reports that 2016 biodiesel production reached 3.656 billion liters. Post expects 2017 biodiesel production to decline to 2.9 billion liters based on MEMR reports that biodiesel procurement will decline slightly. 2018 biodiesel production is estimated at 3.3 billion liters, assuming average production, the prevalence of minimal export demand and stable domestic consumption. Likewise, MEMR data states that 2016 biodiesel consumption reached 3.008 billion liters, while 2017 consumption is expected to drop to 2.8 billion liters based on MEMR reports of slightly lower demand. Trade data states that Indonesia's 2016 exports reached 478 million liters. First quarter 2017 biodiesel exports are low, likely in response to low fossil diesel prices. As a result, Post expects that 2017 exports will decline to 200 million liters. 2018 exports are projected to remain at 200 million liters, assuming stable diesel prices and no changes to importing countries biofuels policies. The recent US petition to file an antidumping case against Indonesian biodiesel exports has not resulted in any policy changes to date. Indonesian biofuel industry representatives report that they do not anticipate significant disruptions resulting from the petition, considering that Indonesian biodiesel exports only make up a small portion of their current production.

II. Policy and Programs

Biodiesel
Indonesia's biodiesel blending industry is thriving under the support of a biodiesel program funded by a levy charged on exports of palm oil and its derivatives (including biodiesel). The fund is managed by the Oil Palm Estate Fund agency (BPDPKS), and was authorized through Presidential decree 61/2015. The fund supports Indonesian biodiesel consumption by covering the price difference between biodiesel and conventional diesel. Every six months, MEMR appoints volume allocations to biodiesel producers for delivery to Pertamina (a state-owned fuel company) and AKR (a private fuel distributor). The program started in the second half of 2015 and has operated continuously since its inception with only minor changes.

The most recent change to the program is the Ministry of Energy and Mineral Resources' (MEMR) revision to biodiesel market index price formula in May 2017. MEMR Regulation 2026 lowers the CPO reference price by changing the biodiesel conversion factor from 125 USD/MT to 100 USD/MT. (See Table 1). The result is a decrease in the amount paid per unit through the biodiesel fund to biodiesel

blenders. Industry contacts report that although this reduces the amount paid to blenders, the reduction will not result in significant consumption declines for biodiesel in Indonesia.

Table 1. Indonesian Biodiesel Market Index Price Formula

Old biodiesel market index price	New biodiesel market index price
(Average CPO reference price + 125 USD/MT) x 870 kg/m3 + delivery cost	(Average CPO reference price + 100 USD/MT) x 870 kg/m3 + delivery cost

Note: *CPO price refers to averaged previous month CPO price published by KPB. Source: MEMR Regulation 2026/2017*

MEMR regulation 12/2015 establishes biofuel blending targets. Table 2 shows GOI plans to increase biodiesel use through 2025.

Table 2. Indonesian Biodiesel Mandatory Target as Stated in Regulation 12/2015

Sector	2016	2020	2025
Transportation, Public Service Obligation (PSO)	20%	30%	30%
Transportation, Non-PSO	20%	30%	30%
Industry	20%	30%	30%
Electricity	30%	30%	30%

Source: *MEMR Regulation 12/2015*
Note: *Public Service Obligation (PSO) refers to subsidized fuel for road vehicles. It is uniquely sold through Pertamina, an Indonesian state-owned company. Non-PSO refers to unsubsidized fuel sold through the private sector.*

Indonesian biofuel policies are currently focused on the development of biodiesel for domestic consumption. The recent US petition to file an antidumping case against Indonesian biodiesel exports has not resulted in any policy changes to date. Additionally, Indonesian biofuel industry representatives report that they do not anticipate significant disruptions resulting from the petition, considering that Indonesian biodiesel exports only make up a small portion of their current production. Current US discussions of eliminating blender credits for foreign producers are likewise having a similar effect on Indonesian biofuels production. EU anti-dumping duties have contributed however, to a significant decline in Indonesian exports since 2015. Although there is speculation regarding changes to EU antidumping policies, exporters are not reporting that they anticipate significant changes. Likewise, Indonesian biodiesel policy is not expected to change as a result of policy changes in the EU.

Indonesia has no specific regulation on biofuel sustainability criteria. However, there are several sustainability certification schemes available for biodiesel feedstocks and palm plantations. Programs cover a range of common sustainability criteria including greenhouse gas emissions, land use, biodiversity and labor.

Ethanol

The GOI's ethanol mandatory schedule is shown in Table 3. Post notes that subsidies are only being implemented for transportation sector biodiesel. Given the lack of ethanol infrastructure, feedstock supply gaps, and the general focus on diesel, the GOI is unlikely to pursue ethanol blending.

Table 3. Indonesia Bioethanol Mandatory Target as Stated in Regulation 12/2015

Sector	2016	2020	2025
Transportation, Public Service Obligation (PSO)	2%	5%	20%
Transportation, Non-PSO	5%	10%	20%
Industry	5%	10%	20%

Note: *Public Service Obligation (PSO) for ethanol refers to subsidized fuel used by small scale industry, fishing and agriculture.*
Source: *MEMR Regulation 12/2015.*

Despite the current state of Indonesian supports for the ethanol industry and the absence of fuel ethanol production, the GOI has taken some measures to strengthen incentives for ethanol production. MEMR Regulation 6034/2016 revised the bioethanol market index price from an Argus price-based formula to a molasses-based formula. The molasses price is based on a price issued by state-owned company Kharisma Pemasaran Bersama (KPB). Although the new formula improves the price offered to bioethanol producers, in practice the issue is moot, as the GOI does not currently have available financial supports to fund the formula. To summarize, there is virtually no fuel grade ethanol production in Indonesia.

Table 4. Indonesia Bioethanol Market Index Price Formula

Old bioethanol market index price	New bioethanol market index price
Average Argus ethanol x 788 kg/m^3 x 1.14	(3 months average molasses price x 4.125 kg/L) + 0.25 USD/liter

Source: *MEMR Regulation 6034/2016*

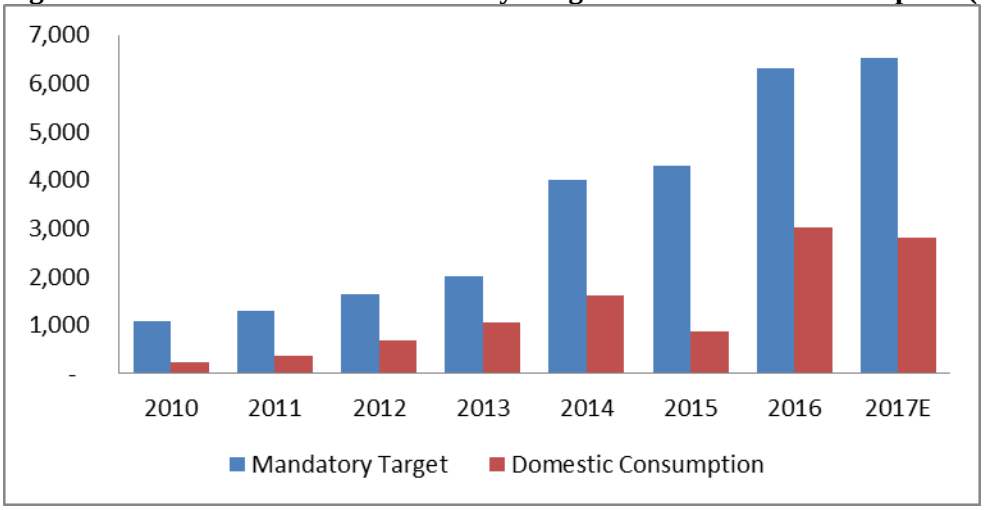
Historic Policy Background

Indonesian biofuels policy is governed by a number of regulations and decrees. Government regulation 1/2006 was an important first step for the development biofuels in Indonesia. The regulation governs the procurement and usage of biofuels. In support of Regulation 1, Presidential decree 20/2006 established a National Biofuels Development Team, which supervises biofuel implementation programs and has created a blueprint for biofuels development. According to the blueprint, biofuels development aims to (1) alleviate poverty and unemployment, (2) drive economic activities through biofuel procurement and (3) reduce domestic fossil fuel consumption. This was followed by Indonesia's House of Representative (DPR), which passed Energy Law (UU 30/2007) to strengthen regulations prioritizing the use of renewable energy and biofuels.

In 2008, the Government of Indonesia (GOI) created a biofuel blending mandate through Ministry of Energy and Mineral Resources (MEMR) Regulation 32. The blending mandate regulation has been revised several times, most recently through MEMR Regulation 12, released in March 2015. Regulation 12 also increased mandatory blending to 25 percent for electricity generation. Post notes that despite an aggressive mandate, the potential for biofuel electricity generation in Indonesia remains limited.

Indonesia's biodiesel mandates have been aggressive historically. In 2014, blending rates were set at 10 percent. 2016 rates were set at 20 percent as per MEMR regulation 12/2015. Despite the rapid growth of Indonesia's biofuel consumption however, they have yet to reach their blending mandates (See Figure 1). Industry sources confirm that actual blending levels are correlated directly to the amount of revenues collected through Indonesia's levy on palm oil exports. Under current funding levels, only Pertamina, a state-owned company, is distributing 20 percent blended biodiesel for on-road vehicles. (Note that one small private sector fuel company, AKR, is also distributing biodiesel for on-road use, but at very small levels). PLN, Indonesia's state-owned electric company, is primarily oriented towards coal-based electricity generation, and reports that it generates less than one percent of its electricity using biodiesel.

Figure 1. Indonesia Biodiesel Mandatory Target and Domestic Consumption (Million Liters)



Source: *Post estimation, MEMR*

III. Gasoline and Diesel Pools

Indonesian fuel sales rose in 2016 after three consecutive years of declines. Pertamina, a state-owned company that accounts for over 90 percent of Indonesia's fuel sales, reports sales rose by 4.8 percent in 2016. Indonesian gasoline subsidies were removed in 2015. As a result, the price gap between various qualities of fuels fell and fuel consumption shifted slightly to higher octane fuels. Based on Pertamina reports, Post expects Indonesia fuel sales will grow from 70 billion liters in 2016 to 71 billion liters in 2017.

Table 5. Indonesia, Fuel Use History

Fuel Use History (Billion Liters)										
Calendar Year	2008	2009	2010	2011	2012	2013	2014	2015	2016E	2017F
Gasoline Total	20	22	24	27	29	31	31	32	33	34
Diesel Total	28	29	32	38	38	36	35	31	32	33
On-road	17	20	23	26	30	29	27	25	27	28
Industry	11	9	9	11	8	7	7	5	5	5
Jet Fuel Total	3	3	4	3	4	4	4	4	5	5
Total Fuel Markets	51	54	60	68	71	71	70	67	70	71

Source: *MEMR, post estimation*

In addition to the elimination of gasoline subsidies, the GOI reduced the subsidy for diesel fuel from IDR 1000/liter to IDR 500/liter.

Fuel use outlook

Indonesian fuel use is projected to increase by 4.9 percent on average during 2015-2025 period, based on the Indonesia Energy Outlook 2016. This projection implies that gasoline consumption will reach 43 billion liters in 2020 and diesel consumption is expected to grow to 53 billion liters by 2025.

Table 6. Indonesia Fuel Use Projection

Fuel Use Projections (Billion Liters)										
Calendar Year	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Gasoline Total	39	41	43	46	48	50	53	54	55	57
Diesel Total	39	41	43	45	47	49	52	53	54	56
On-road	33	35	36	38	40	42	44	45	47	48
Industry	6	6	6	6	7	7	7	8	8	8
Jet Fuel Total	5	5	5	6	6	6	7	7	7	7
Total Fuel Markets	83	87	91	96	101	106	111	114	117	120

Source: *Post calculation*

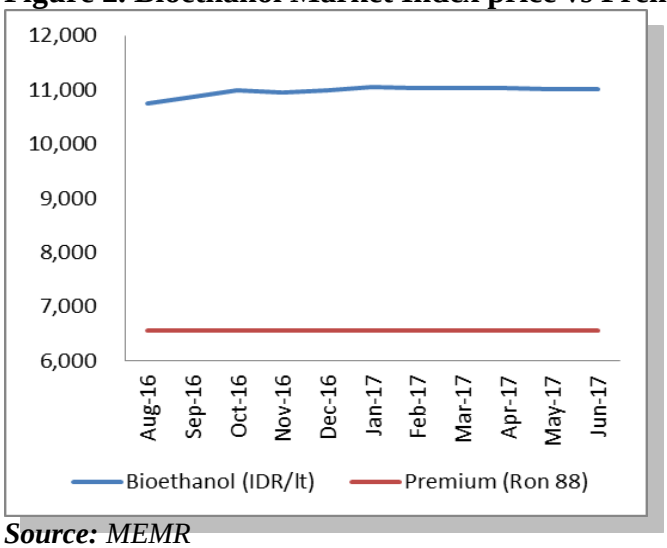
IV. Ethanol

Production

Indonesia's fuel grade ethanol (FGE) market is limited. No fuel ethanol production has occurred since 2010, with ethanol industry sources explaining that FGE distribution ended due to inconsistent supply, price volatility, and insufficient demand (Pertamina's purchase price is too low). The GOI proposed funds to subsidize the price gap between gasoline and bioethanol in the 2016 state budget, but this was not approved by Indonesia's House of Representatives (DPR).

Indonesia's 2016 ethanol refinery capacity, both active and idle, remains unchanged at 408 thousand KL. Only 3 out of 14 plants can produce FGE, with total FGE capacity at 100 thousand KL per year.

Figure 2. Bioethanol Market Index price vs Premium Price (RON 88), Rupiah/Liter

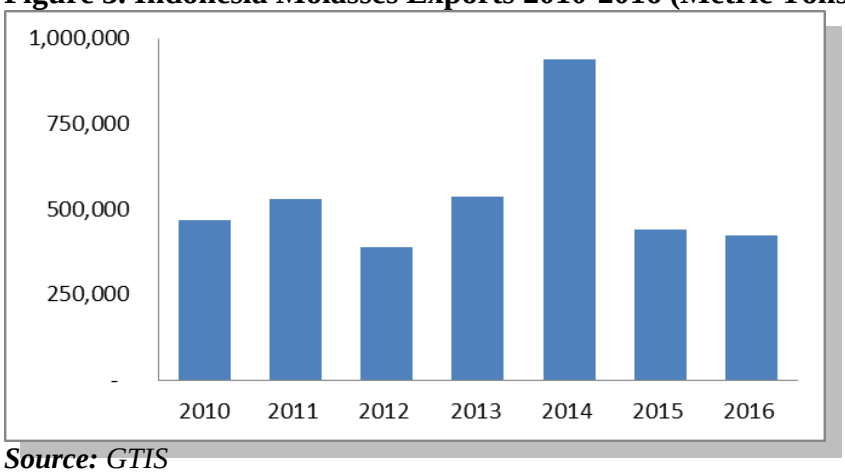


Source: *MEMR*

Post expects that Indonesian will produce 205 million liters of ethanol in 2017 and 2018. Indonesian ethanol is produced from molasses, the most readily available ethanol feedstock in Indonesia with more than 60 sugarcane mills to source from. Indonesia's sugarcane industry is expected to produce 1.4 MMT of molasses in 2017, based on Post's sugarcane production estimate of 28 MMT in MY 2016/17 (GAIN Report ID1708). Approximately 835,000 metric tons of molasses are required to manufacture 205 million liters of ethanol.

According to industry sources, the amino acid/monosodium glutamate industry typically consumes about between 16 and 25 percent of Indonesian molasses, while the remainder is used for non-fuel ethanol or is exported. Non-fuel ethanol applications include pharmacy and hospital products, cosmetics, perfume, and tobacco products. Ethanol is also used in the manufacture of acetic acid, ethyl acetate, and methylated spirit.

Figure 3. Indonesia Molasses Exports 2010-2016 (Metric Tons, HS code: 1703)



Source: *GTIS*

Consumption

Gasoline consumption has increased more than 32 percent since 2010. However, in the absence of a functioning bioethanol blending mandate program, FGE consumption is virtually non-exist. Industrial

ethanol is mainly used in products including perfumes, cosmetics, pharmaceutical goods and other chemical solvents. Demand for non-fuel ethanol comes from the perfume, cosmetic, pharmacy and chemical solvent industries. Post expects consumption will reach 137 million liters in 2017 and will slightly increase to 138 million liters in 2018.

Trade

Industrial ethanol (IGE) exports increased 6 percent from 67 million liters in 2015 to 71 million liters in 2016. About 88 percent of 2016 exports were shipped to The Philippines. Post expects IGE exports will reach 70 million liters in both 2017 and 2018.

Stocks

A slight consumption increase and stagnant production is expected to lower ending stocks to 13 million liters in 2017 and 10 million liters in 2018.

Production, Supply and Demand Statistics

Ethanol Used as Fuel and Other Industrial Chemicals (Million Liters)										
Calendar Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Beginning Stocks	31	42	36	42	52	39	13	16	15	13
Fuel Begin Stocks	0	0	0	0	0	0	0	0	0	0
Production	172	175	220	205	207	202	205	205	205	205
Fuel Production	2	0	0	0	0	0	0	0	0	0
Imports	0	0	1	0	0	2	0	2	0	0
Fuel Imports	0	0	0	0	0	0	0	0	0	0
Exports	33	49	81	59	86	94	67	71	70	70
Fuel Exports	0	0	0	0	0	0	0	0	0	0
Consumption	128	132	134	135	135	135	136	137	137	138
Fuel Consumption	1	0	0	0	0	0	0	0	0	0
Ending Stocks	42	36	42	52	39	13	16	15	13	10
Fuel Ending Stocks	0	0	0	0	0	0	0	0	0	0
Total BalanceCheck	0	0	0	0	0	0	0	0	0	0
Fuel BalanceCheck	0	0	0	0	0	0	0	0	0	0
Production Capacity (Million Liters)										
Number of Refineries	12	14	14	15	15	13	14	14	14	14
Nameplate Capacity	288	342	392	392	378	408	408	408	408	408
Capacity Use (%)	60%	51%	56%	52%	55%	50%	50%	50%	50%	50%
Feedstock Use for Fuel (1,000 MT)										
Molasses	688	700	880	820	828	808	820	820	820	820
Market Penetration (Million Liters)										

Fuel Ethanol	1	0	0	0	0	0	0	0	0	0
Gasoline	22,073	23,926	26,885	29,278	30,514	30,926	31,531	33,055	33,587	39,457
Blend Rate (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

V. Biodiesel

Production

Indonesian biodiesel production is driven by domestic consumption, which is expected to account for over 95 percent of Indonesia's biodiesel production in 2017. As outlined in Section II, Indonesia maintains a robust biodiesel program which is funded through an export levy on palm oil and its derivative products. Revenues collected through the levy are used to offset the price differential between biodiesel and fossil fuels for Indonesian consumers. According to representatives of Indonesia's biofuels association, the levy is expected to continue operating without significant changes. Some speculate that levy revenues may decline slightly as Indonesia exports a larger proportion of value added palm oil products (note Indonesian levy charges for value-added palm oil products are lower than CPO). However, the decline in revenues is not expected to lead to significant changes in Indonesia's biodiesel consumption.

Indonesia's Ministry of Energy and Mineral Resources (MEMR) reports that 2016 biodiesel production reached 3.656 billion liters. Looking to 2017, Post expects biodiesel production to decline to 2.9 billion liters based on MEMR reports that biodiesel procurement will reach 1.5 billion liters in the first half of 2017, while falling to 1.3 billion liters in the second half. Additionally, trade data indicates low export demand for Indonesian biodiesel in early 2017. 2018 biodiesel production is currently estimated at 3.3 billion liters, based on typical production and the assumption that normal demand conditions will prevail with minimal export demand and stable domestic consumption.

Overall, biodiesel production is expected to remain stable, as current demand factors are not expected to change. For example, Indonesia's biodiesel program is currently achieving a blend rate estimated close to 20 percent. (Note the 20 percent blend rate refers specifically to on-road vehicles). Although there is speculation that Indonesia could attempt to push the blending rate up, this appears unlikely given current fuel market conditions and the capacity of Indonesia's palm oil levy. Post notes that there is currently no program in place to include private sector fuel companies in the biodiesel program. Likewise, electricity generation from biodiesel is a low priority for Indonesia's state-owned power utility, thus ruling out potential demand in the power market.

Indonesian biodiesel production capacity has grown from about 4.8 billion liters in 2012 to about 10.8 billion liters in 2016. Industry sources note however, that although capacity has grown substantially, overall production remains around 35 percent of capacity. Industry sources note that domestic consumption is currently saturated, and that future growth will likely come in export markets. However, biodiesel blenders state that export growth will only occur in the event that price conditions favor palm oil over fossil fuels. Given these conditions, significant production growth is possible, although this is not expected in the near term.

Indonesia's biofuels program will source biodiesel from 20 blenders in the May-October 2017 allocation period (see Table 7). Total allocations of biodiesel under the program are also highlighted in Table 7. All bio-diesel that is distributed with support of Indonesia's palm oil program is distributed

domestically. Almost the entire quantity is distributed through Indonesia's state-owned fuel company Pertamina.

Table 7. Biodiesel Allocation 2015-2017

	Allocation Period			
Period	1st	2nd	3rd	4th
	Nov 2015 - April 2016	May - Oct 2016	Nov 2016 - April 2017	May - Oct 2017
Number of Producers	12	16	17	20
Total Allocation (Billion liters)	1.87	1.53	1.53	1.37

Source: *MEMR*

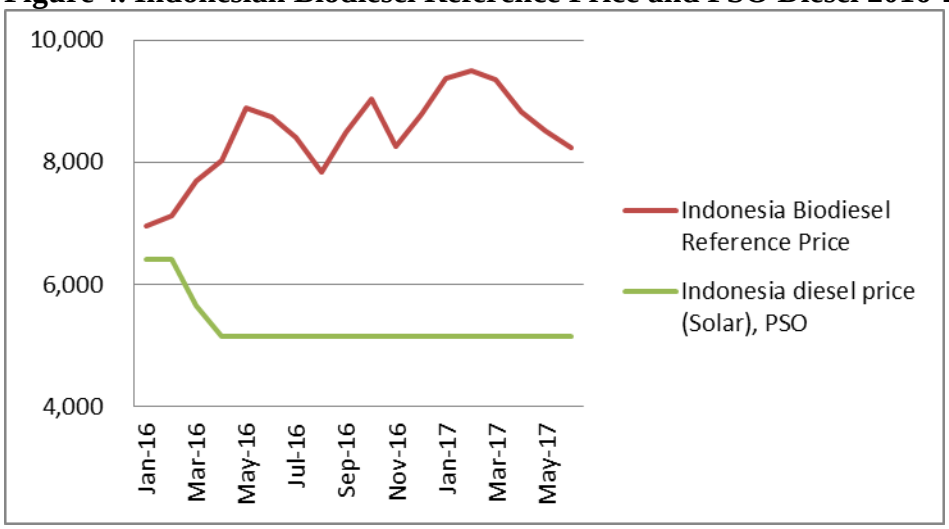
Consumption

Indonesian biodiesel consumption jumped in 2016 following the implementation of the biodiesel mandate program supported by the CPO fund. According to MEMR data, total 2016 biodiesel consumption reached 3.008 billion liters from 860 million liters in 2015. Looking to 2017, Post expects consumption to drop to 2.8 billion liters based on MEMR reports of slightly lower demand. Specifically, biodiesel procurement for May-October 2016 and November 2016 – April 2017 were both set at 1.5 billion liters. However, the GOI announced lower expected procurement for May-October 2017, attributing a slight decline to lower blending rates required by military vehicles. As a result, May-October 2017 procurement is expected to reach 1.3 billion liters, implying total 2017 consumption will be closer to 2.8 billion liters. 2018 consumption is projected to reach 3.1 billion liters, assuming normal conditions, relatively stable domestic demand, and the continued implementation of the CPO fund.

Indonesia's levy on CPO exports is used to offset the price gap between biodiesel and fossil diesel. Starting in January 2016, the biodiesel and fossil diesel spread jumped, (see Figure 4). Industry contacts indicated a revision on the subsidy is being discussed that is intended to address the extreme price spread. Under the proposed revision, fund payments to biodiesel blenders would be capped at a 4000 Rupiah per liter. Post notes that this is change is still being discussed and that no decision is expected prior to the May-October 2017 procurement. If imposed, the cap would have a slightly moderating effect on biodiesel consumption.

Indonesian biodiesel consumption is primarily used for the on-road transportation sector. A small fraction of Indonesian biodiesel is used for electricity generation. Industry contacts note, however, that Indonesia's power company, PLN, is slowly reducing diesel-based power plants in favor of coal-powered plants.

Figure 4. Indonesian Biodiesel Reference Price and PSO Diesel 2016-2017 (Rupiah/Liter)



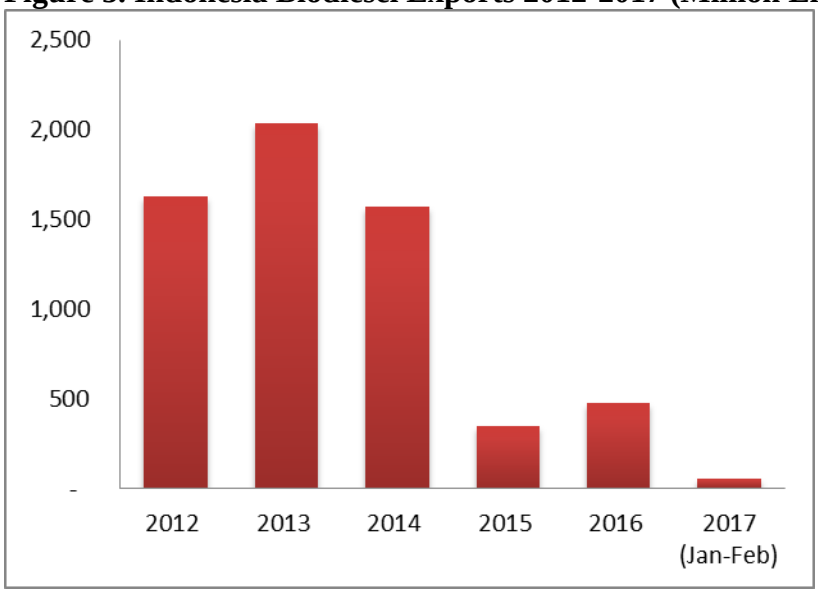
Source: *MEMR*

Trade

Indonesian biofuel exports have fallen as fossil fuel prices have become more competitive, undercutting biodiesel export markets. Trade data indicates that 2016 exports reached 478 million liters, a slight increase over 2015, but well below Indonesia's historic export levels and potential. Trade data indicates that first quarter 2017 exports are low, as current fossil fuel prices do not favor biodiesel exports. Price conditions discouraging exports are furthered by Indonesia's export levy, which adds a 20 dollar per ton surcharge on all biodiesel exports. As a result, Post expects 2017 exports to decline to 200 million liters. 2018 exports are projected to remain at 200 million liters, assuming that the fossil fuel/biodiesel price differential remains unchanged, and that importing countries do not make significant changes to their biodiesel incentive programs.

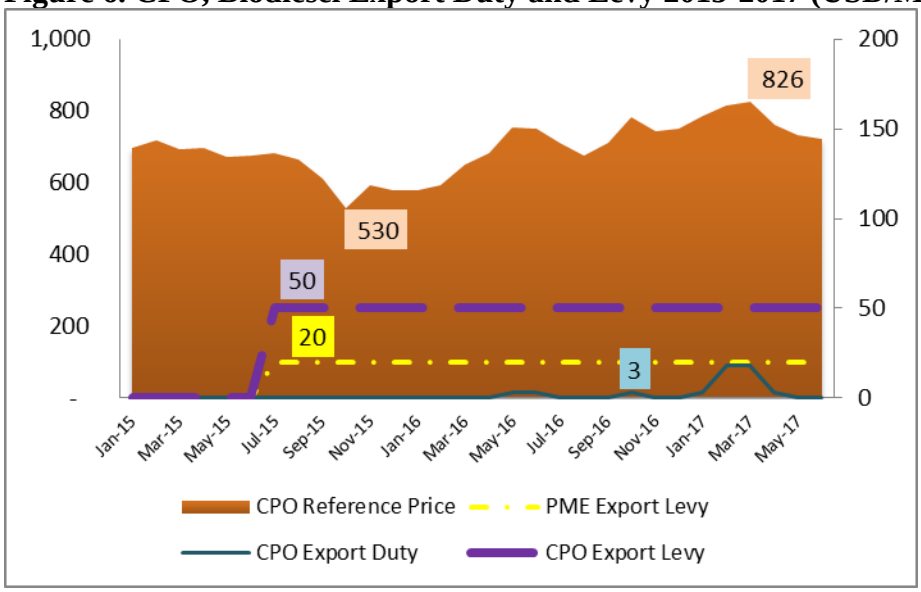
Indonesian biofuel industry representatives report that they do not anticipate significant disruptions following the recent US petition to file an antidumping case against Indonesian biodiesel exports. Industry representatives note that exports only account for a small portion of Indonesia's biofuels production (Post estimates that over 95 percent of Indonesian is consumed domestically), and 2017 exports are already estimated at low levels. Current US discussions of eliminating blender credits for foreign producers are likewise having a similar effect on Indonesian biofuels trade forecasts. EU anti-dumping duties contributed to a significant decline in Indonesian exports starting in 2015. Although there is speculation that changes to EU antidumping policies may occur in August 2017, exporters are not yet reporting that they anticipate significant export performance changes. Looking to the long term (beyond 2018), Indonesian producers report confidence that the potential for stronger fossil fuel prices will push biodiesel exports to record levels.

Figure 5. Indonesia Biodiesel Exports 2012-2017 (Million Liters)



Source: *GTIS, BPS*

Figure 6. CPO, Biodiesel Export Duty and Levy 2015-2017 (USD/MT)



Source: *Indonesian Ministry of Finance (MOF), Ministry of Trade (MOT)*

Stocks

Indonesia's 2017 biodiesel stocks are expected to drop to 104 million liters in response to lower domestic consumption and exports. Post expects that stocks will decline, considering that 2016 stocks reached record levels, and biodiesel producers are generally consistent in their opinion that demand is stable. Based on these conditions and MEMR reports that production will decline slightly in 2017, it seems likely stocks should trend towards historic levels.

Production, Supply and Demand Statistics

Biodiesel (Million Liters)										
Calendar Year	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Beginning Stocks	15	81	38	40	55	7	57	34	204	104
Production	330	740	1,800	2,200	2,800	3,000	1,180	3,656	2,900	3,300
Imports	0	0	0	0	0	0	0	0	0	0
Exports	204	563	1,440	1,515	1,800	1,350	343	478	200	200
Consumption	60	220	358	670	1,048	1,600	860	3,008	2,800	3,100
Ending Stocks	81	38	40	55	7	57	34	204	104	104
BalanceCheck	0	0	0	0	0	0	0	0	0	0
Production Capacity (Million Liters)										
Number of Biorefineries	20	22	22	22	26	26	27	30	32	32
Nameplate Capacity	3,128	3,921	3,921	4,881	5,670	5,670	6,887	10,898	11,547	11,547
Capacity Use (%)	10.5%	18.9%	45.9%	45.1%	49.4%	52.9%	17.1%	33.5%	25.1%	28.6%
Feedstock Use for Fuel (1,000 MT)										
Crude Palm Oil (CPO)	304	681	1,656	2,024	2,576	2,760	1,086	3,363	2,668	3,036
Market Penetration (Million Liters)										
Biodiesel, on-road use	48	176	286	637	996	1,520	817	2,797	2,604	2,883
Diesel, on-road use	19,828	22,895	26,150	29,528	28,649	27,220	25,433	27,404	28,186	33,137
Blend Rate (%)	0.2%	0.8%	1.1%	2.2%	3.5%	5.6%	3.2%	10.2%	9.2%	8.7%
Diesel, total use	29,237	32,220	37,617	37,743	36,124	34,651	30,716	32,228	32,759	38,712

Notes on Statistical Data

Fuel Use History
Gasoline, Diesel and Jet fuel use history figures in Table 5 are based on MEMR statistics. Table 1 2016 estimates are based on Pertamina 2016 fuel sales growth. 2017 estimates use fuel sales annual growth between 2010 and 2015.

Fuel Use Projection
Table 6 fuel use projections are estimated using fuel demand growth rates as described in the Indonesian Energy Outlook 2016 published by the National Energy Council (DEN).

Biofuel Market Index Price
Bioethanol market index prices in Figure 2 were gathered from MEMR publications. "Premium" refers to an Indonesian gasoline blend with RON 88 quality.

Bioethanol Market Index Price and "Premium" Gasoline Price

Month	Molasses Price (IDR/kg)	Bioethanol (IDR/lt)	Premium (IDR/lt)
Aug-16	1,810	10,757	6,550
Sep-16	1,841	10,876	6,550
Oct-16	1,864	10,986	6,550
Nov-16	1,864	10,943	6,550
Dec-16	1,864	10,993	6,550
Jan-17	1,864	11,049	6,550
Feb-17	1,864	11,036	6,550
Mar-17	1,864	11,026	6,550
Apr-17	1,864	11,028	6,550
May-17	1,864	11,018	6,550
Jun-17	1,864	11,020	6,550

Source: *MEMR*

Biodiesel market index prices in Figure 4 were collected from MEMR publications. PSO diesel price are announced every three months. The CPO price information provided below is also provided by MEMR.

Biodiesel Market Index Price and PSO Diesel Price

Month	CPO Price (IDR/kg)	Indonesia Biodiesel market index price (IDR/liter)	Indonesia diesel price (Solar), PSO (IDR/liter)
Jan-16	6,261	6,954	6,400
Feb-16	6,443	7,112	6,400
Mar-16	7,134	7,687	5,650
Apr-16	7,578	8,026	5,150
May-16	8,569	8,891	5,150
Jun-16	8,378	8,737	5,150
Jul-16	7,979	8,402	5,150
Aug-16	7,361	7,835	5,150
Sep-16	8,109	8,483	5,150
Oct-16	8,729	9,028	5,150
Nov-16	7,870	8,262	5,150
Dec-16	8,439	8,779	5,150
Jan-17	9,082	9,362	5,150
Feb-17	9,238	9,493	5,150
Mar-17	9,089	9,358	5,150
Apr-17	8,463	8,815	5,150
May-17	8,129	8,520	5,150
Jun-17	8,210	8,230	5,150

Source: *MEMR*

Export Duty and Levy on Biodiesel

CPO export duty data in Figure 6 are collected from Ministry of Trade. The Palm Methyl Ester (PME) Levy tariff is stated in Ministry of Finance Regulation 133.

Indonesia Exports Duty and Levy on CPO, Biodiesel 2015-2017

Month	CPO Reference Price (USD/MT)	Export Duty			Levy		Note
		CPO duty Tariff	CPO Export Duty (USD/MT)	PME Export Duty (USD/MT)	CPO Export Levy (USD/MT)	PME Export Levy (USD/MT)	
Jan-15	697	0%	0	0	0	0	MOF Reg 128/2013, MOF 75/2012
Feb-15	719	0%	0	0	0	0	
Mar-15	695	0%	0	0	0	0	
Apr-15	698	0%	0	0	0	0	
May-15	671	0%	0	0	0	0	
Jun-15	675	0%	0	0	0	0	
Jul-15	682	0	0	0	50	20	MOF Reg 136/2015 (Export Duty) MOF Reg 133/2015 (Levy)
Aug-15	665	0	0	0	50	20	
Sep-15	611	0	0	0	50	20	
Oct-15	530	0	0	0	50	20	
Nov-15	594	0	0	0	50	20	
Dec-15	580	0	0	0	50	20	
Jan-16	579	0	0	0	50	20	
Feb-16	594	0	0	0	50	20	
Mar-16	651	0	0	0	50	20	
Apr-16	682	0	0	0	50	20	
May-16	754	USD 3	3	0	50	20	
Jun-16	752	USD 3	3	0	50	20	
Jul-16	712	0	0	0	50	20	
Aug-16	676	0	0	0	50	20	
Sep-16	710	0	0	0	50	20	
Oct-16	781	USD 3	3	0	50	20	
Nov-16	743	0	0	0	50	20	
Dec-16	749	0	0	0	50	20	
Jan-17	788	USD 3	3	0	50	20	
Feb-17	816	USD 18	18	0	50	20	
Mar-17	826	USD 18	18	0	50	20	
Apr-17	763	USD 3	3	0	50	20	
May-17	732	0	0	0	50	20	
Jun-17	723	0	0	0	50	20	

Source: *Ministry of Trade (MOT) and MOF*