Required Report - public distribution

Date: 8/3/2012

GAIN Report Number: MY2006

Malaysia

Biofuels Annual

2012

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Report Highlights:
High feedstock prices, little domestic demand, subsidized alternative petroleum based products, and stiff competition from Indonesian supplies in export markets have stymied development of Malaysia's bio-diesel industry. A majority of the plants are idle. The Government of Malaysia has started to implement a B5 mandate (a blend of 5 percent palm methyl esters in diesel), but domestic consumption is expected to remain stagnant.

Post:
Kuala Lumpur

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Executive Summary

Executive Summary:

Despite very optimistic expectations just a few years ago, for a number of reasons, Malaysia's biodiesel sector is not yet economically viable. Most domestic biodiesel plants are idle. Strong CPO prices, in the face of subsidized petroleum-based fuels, have hindered development of the biodiesel sector. Palm oil producers, who also tend to be the biodiesel manufacturers, obtain greater returns selling CPO rather than further refining the oil for biodiesel. Since starting in 2009, implementation of the B5 mandate (a blend of 5 percent of palm methyl esters in diesel) has been slow, with product currently available only in 3 states, involving some 1,150 petrol stations, and potential consumption of 155,440 tons or 178 million liters biodiesel per year. Upon full implementation of the mandate, B5 use is supposed to reach 570,000 tons of CPO to produce 500,000 ton of biodiesel. That quantity would still represent only about 3 percent of current annual CPO production. Few retail petrol stations in Kuala Lumpur and Selangor carry B5 blended diesel, and the product is in fact difficult to find, reflecting the slow implementation of the mandate.

In 2011, biodiesel exports declined to 49,999 tons, compared to 89,609 tons the previous year. Major export markets were EU, Taiwan and South Korea. With domestic production expected to continue to be low in the near future, exports should continue falling.

Exchange Rate: US$1=RM3.159 (Jul 28, 2012)

Author Defined:
BIO-FUEL POLICY

Policies supporting production and use of biofuels

With the palm oil prices staying above RM3,000MT ($940/MT), and reaching as high as high RM3,811/MT ($1,206/MT), and with highly subsidized petroleum based fuel alternatives, returns from CPO sales have been better than biodiesel processing margins. Nonetheless, the Government of Malaysia (GOM) hopes that eventually 500,000 tons of palm oil will be used when full implementation of the B5 mandate is attained. However, the sector is still far from reaching that level of palm oil use and biodiesel production. Few petrol retail stations currently offer B5 diesel.

Implementation of the B5 mandate in central region States (Putrajaya, Malacca, Negeri Sembilan, Kuala Lumpur and Selangor) has occurred in stages, with Putrajaya on 1st June 2011, Malacca on 1st July 2011, Negeri Sembilan on 1st August 2011, Kuala Lumpur on 6th October 2011 and Selangor on 1st November 2011. This initial targeted area involved 1,150 petrol retail stations with potential consumption of 155,440 ton or 178 million liters a year of biodiesel. GOM hopes to achieve nationwide implementation of the B5 mandate in 2013, with a goal of using 570,000 tons of CPO to produce 500,000 ton of biodiesel. However, this goal is unlikely to be reached.

With subsidized domestic fuel prices, petroleum-based diesel and B5 diesel prices are the same, so consumers have little incentive to switch to B5. In addition, it costs GOM 1-2 cents per liter more to offer consumers palm based diesel compared to petroleum diesel. This translates to an additional subsidy of RM124.6 million ($39.4 million) per year. Furthermore, the biodiesel is not easy for the general consumer to obtain, as few petrol stations in Kuala Lumpur and Selangor even offer B5 diesel. And most importantly, the continued relative high price of the B5 feedstock, Palm Methyl Ester (PME), continues to hamper biodiesel production.

Another issue that is negatively affecting biodiesel production is the export duty differential relative to that of Indonesia, which favors Indonesia's biodiesel exports. Indonesia's duty for biodiesel is 2 percent compared to that of CPO at 16.5 percent; whereas, Malaysia has an equal export duty of 30 percent for both biodiesel and CPO.

Table 1:
Retail Price of Motor Fuels in Malaysia (per liter)

	Subsidized Retail Price	Without Subsidies or Sales Tax Exemptions
Gasoline*	US$0.63 (RM1.90)	US$1.09 (RM3.28)
Petroleum Diesel	US$0.60 (RM1.80)	US$1.02 (RM3.08)

*RON95

US$1=RM3.159 (Jul 03, 2012)

BIO-FUEL MARKET SITUATION

Potential consumption of biofuel

Diesel vehicle ownership in Malaysia is relatively small compared to petrol vehicles.
The numbers of new vehicles registered through December 2011 are shown below, and of these, diesel vehicles (mostly goods vehicles) accounted for only 5 percent of new registrations.

Table 2:
#Number of New Motor Vehicles Registered until December 2011

Motorcycles	Cars	Buses Taxis Hire & Drive Cars	Goods Vehicles	Others	Total
9,985,308	9,721,447	180,998	997,649	545,867	21,401,269
46.66%	45.42%	0.84%	4.66%	2.55%	100%

Source: Malaysia Road Transport Department

The Malaysian Automotive Association (MAA) forecasts total industry volume of motor vehicles to show 2 percent growth in 2012 following a slight decline in sales in 2011.

Table 3 forecasts a steady growth till 2015.

Table 3: Malaysian Automotive Association (MAA) Forecast of Vehicle Sales						
	2011	**2012***	**2013***	**2014***	**2015***	**2016***
Passenger vehicles	535,113	547,000	555,900	565,550	575,800	587,000
Commercial vehicles	65,010	68,000	71,400	74,900	78,700	82,600
Total industry volume	600,123	615,000	627,300	640,450	654,500	669,600
Growth	-0.8%	2.3%	2.0%	2.1%	2.2%	2.3%

*Source: MAA *forecast*

With Euro 4 emission compliant vehicles set to be introduced in 2014, demand for diesel vehicles in Malaysia may increase as more car manufacturers will introduce new fuel efficient high performance diesel vehicles. However, with limited choice of diesel vehicle models in the market, coupled with an unfavorable road tax for diesel vehicles, demand for B5 diesel will remain relatively low and is not expected to grow.

Table 4: Road Tax in Peninsula Malaysia 2012		
Engine Capacity (c.c.)	**Petrol Engine**	**Diesel Engine**
1000 and below	US$6.33	US$6.33
1001-1200	US$17.41	US$34.82
1201-1400	US$22.16	US$44.32
1401-1600	US$28.49	US$56.98
1601-1800	US$63.44-US$88.64	US$126.88-US$177.27
1801-2000	US$88.79-US$120.29	US$177.62-US$246.91
2001-2500	US$120.61-US$278.57	US$247.61-US$595.13
2501-3000	US$279.36-US$674.26	US$597.02-US$1,544.79
3001-5000	US$675.69-US$3,523.27	US$1,548.21-US$8,382.40

US$1=RM3.159 (Jul 03, 2012)

Biofuel Production

Ethanol production

Ethanol production is commercially insignificant in Malaysia. However, there is an opportunity for ethanol production from oil palm biomass, but this process is not yet economically viable.

In May 2011, GOM established MyBiomass Sdn Bhd, a subsidiary company of Malaysian Industry-Government Group for High Technology (MIGHT), which is part of the Ministry of Science, Technology and Innovation (MOSTI). MyBiomass set up of a joint venture between Felda Plantation Bhd and Sime Darby Bhd, Malaysia's largest two plantation companies. The joint venture plans to build a bio-refinery plant that converts oil palm biomass (trunks, empty fruit brunches and fronds) into isobutanol, butanediol and ethanol. However, like biodiesel, ethanol production would face competition from subsidized gasoline prices, so a commercially viable ethanol sector is unlikely to develop either.

Biodiesel production in the biofuel sector

At the end of 2011, there were more than 20 biodiesel plants, with a total production capacity of 2.62 million ton per year. Out of the 20 plants, only 2 plants are producing, and well below capacity. The rest are either-non operational or producing other bio-chemical products. With the high cost of feedstock, stiff competition from Indonesia for export markets, and low domestic demand, biodiesel producers will continue to face a difficult environment.

When the price of palm oil went above RM2,800/MT ($886/MT), GOM started to look at alternative crops such as *Jatropha*. Even though the GOM provided some incentives for the production of *Jatropha*, commercial *Jatropha* production for biodiesel is still not viable.

Import Regime for Biofuels

GOM applies no import tariff on biofuels, no import tariff on crude palm oil, but a 5 percent duty is levied on processed palm oil. Similarly, no duties are applied on two common biofuel feedstocks: rapeseed oil and sunflower oil. There is, however, a 5 percent tariff on soybean oil.

BIOFUEL STATISTICS

Revisions to the PSD Table can be found below. The BTN Trade code 382490900 (other chemical Products) contains other product besides palm oil diesel.

Biodiesel production/consumption/trade (1,000 M Ton)					
	2008	2009	2010	2011	2012
Biodiesel					
Beginning stocks	7	20	15	4	3
Production 1/	195	222	80	13	15
Imports	0	0	0	0	0
Total supply	202	242	95	17	18
Exports	182	227	90	12	10
Consumption	0	0	1	2	4
Ending stocks	20	15	4	3	4

1/ One ton of Palm Oil has a 94% yield in term of methyl ester output.

Table 5:

BIODIESEL PLANTS REGISTRATED IN MALAYSIA 1/

1	AJ Oleo Industries Sdn. Bhd.	Segamat, Johor
2	AM Biofuel Sdn. Bhd.	Pasir Gudang, Johor
3	Carotino Sdn.Bhd.	Pasir Gudang, Johor
4	YPJ Palm International Sdn. Bhd.	Pasir Gudang, Johor
5	Malaysia Vegetable Oil Refinery Sdn. Bhd.	Pasir Gudang, Johor
6	Nexsol (Malaysia) Sdn. Bhd.	Pasir Gudang, Johor
7	PGEO Bioproducts Sdn. Bhd.	Pasir Gudang, Johor
8	Vance Bioenergy Sdn. Bhd.	Pasir Gudang, Johor
9	Mission Biofuels Sdn. Bhd.	Kuantan, Pahang
10	Mission Biotechnologies Sdn. Bhd.	Kuantan, Pahang
11	Plant Biofuels Corporation Sdn. Bhd.	Kuantan, Pahang
12	Carotech Berhad (Chemor Plant)	Chemor, Perak
13	Carotech Berhad (Lumut Plant)	Setiawan, Perak
14	Lereno Sdn. Bhd.	Setiawan, Perak
15	KL-Kepong Oleomas Sdn. Bhd.	Port Klang, Selangor
16	Man Jang Bio Sdn. Bhd.	Port Klang, Selangor
17	Intrack Technology (M) Sdn. Bhd.	Rawang, Selangor
18	Sime Darby Biodiesel Sdn. Bhd.-Carey Island	Pulau Carey, Selangor
19	Sime Darby Biodiesel Sdn. Bhd.-Panglima Garang	Teluk Panglima Garang, Selangor
20	FIMA Biodiesel Sdn. Bhd. (Titian Asli S/B)	Port Klang, Selangor
21	Weschem Technologies Sdn. Bhd.	Batang Kali, Selangor
22	KLK Bioenergy Sdn. Bhd. (Zoop Sdn. Bhd.)	Shah Alam, Selangor
23	Future Prelude Sdn. Bhd.	Port Klang, Selangor
24	Innovans Bio Fuel Sdn. Bhd.	Port Klang, Selangor
25	Global Bio-Diesel Sdn. Bhd.	Lahad Datu, Sabah
26	Green Edible Oil Sdn. Bhd. (Green Biofuels)	Sandakan, Sabah
27	SPC Bio-diesel Sdn. Bhd.	Lahad Datu, Sabah
28	Platinum Biofuels Sdn. Bhd. (Ganz)	Seremban, Negeri Sembilan
29	Senari Biofuels Sdn. Bhd. (Global Bonanza)	Kuching, Sarawak

Sources: MPOB: BIODIESEL PLANT IN OPERATION IN MALAYSIA

Table 5 shows the biodiesel plants currently registered in Malaysia. However, few are operating.

Export Trade Matrix

COUNTRY	**2010**

	Quantity (Tons)
Indonesia	45,072
European Union	40,660
U.S.A.	3,482
South Korea	180
Taiwan	159
India	47
Japan	7
Singapore	2
TOTAL	**89,609**

	2011
COUNTRY	**Quantity (Tons)**
European Union	38,811
Taiwan	9,223
South Korea	1,537
Switzerland	221
Singapore **	124
Australia	41
India	40
Japan	3
TOTAL	**49,999**

** Mainly for re-exports

Sources: MPOB