PETROLEUM PRODUCT CONSUMPTION AND REFINING

Overview

Based on the petroleum products supply and demand trends in 2002, Indonesia is moving toward eventual net importer status, although product surplus still averaged 52 million barrels annually, or 142,000 b/d. Fuel consumption increased 3.4 percent in 2002 to 57.8 million kiloliters (KL), up from 55.9 million KL in 2001 and 54.8 million KL in 2000. Except kerosene and industrial diesel oil, consumption increased in each category of fuel, with the strong likelihood that a significant part of the increase resulted from smuggling of Indonesian fuel products to neighboring countries. In 2002, fuel product imports increased to 293,000 b/d.

The majority of domestic consumption is for transportation (47 percent), industry (21.3 percent), household use (20.1 percent) and electric power (11.3 percent). The transportation sector uses largely automotive diesel oil (ADO), while households are the largest consumers of kerosene.

Pertamina's Downstream Directorate is responsible for the distribution of fuel products to end-users from 166 storage depots throughout Indonesia. The Directorate has established eight regional representative offices to market the products. Fuel products are transported via an elaborate pipeline network and by tank trucks, rail tank wagons, tank vessels and barges. Pertamina controls the sale of gasoline and automotive diesel by direct ownership and franchise of close to 3,000 gasoline stations nationwide. Pertamina itself only owns 2% of the retail stations. The private sector also sells kerosene. The selling price of fuel oil on the domestic market is determined by the government, which applies a uniform tariff for each type of fuel throughout Indonesia.

Domestic Fuel Consumption
(Million Liters)

Products	2000	2001	2002
ADO	21,734.7	23,013.7	24,212.9
Gasoline	12,421.8	13,056.7	13,732.4
Kerosene	12,455.2	12,2279	11,678.4
Fuel Oil	6,013.1	6,121.0	6,260.3
IDO	1,451.2	1,420.0	1,360.3
Avtur	744.1	N/A	552.9
Avgas	4.6	N/A	-
Total	**54,824.7**	**55,890.9**	**57,797.3**

Oil Refining

In 2002, Indonesia's production of petroleum-based fuels and non-fuels from domestic refineries rose to 1 million b/d, largely due to increased fuel production. Most of the petroleum products refined in Indonesia are destined for domestic consumption. Indonesia has nine oil refineries, all owned and operated by state oil and gas company Pertamina, with a combined installed capacity of 1.06 million b/d. The nine refineries are located in Sumatra, Java, East Kalimantan and Irian Jaya. They produce a mix of oil fuels (diesel, fuel oil and kerosene), liquefied natural gas, secondary fuels (such as naptha) and non-fuels (such as asphalt and lubricants).

According to government figures, Pertamina's refineries operate at 99% of their combined capacity of 1.057 million b/d. Some industry watchers report that number may be closer to 85-90%. Nevertheless, the lack of spare capacity means that Indonesia must seek overseas crude processing deals when its larger refineries are closed for maintenance. This occurred between August – October 2003, when Pertamina paid the Singapore Petroleum Company to process Indonesian crude when the Balongan refinery closed for maintenance.

Oil Refinery Production (1000b/d)

Refinery	Installed Capacity	Crude Processed 2002
Pangkalan Brandan	5.0	2.7
Dumai	120.0	119.7
Sungai Pakning	50.0	49.1
Musi	135.2	121.2
Cilacap	348.0	318.0
Balikpapan	260.0	260.5
Balongan	125.0	122.6
Kasim	10.0	6.0
Cepu	3.8	2.5
TOTAL	**1,057.0**	**1,002.4**

Source: MIGAS

Pertamina foresees requiring the refineries to buy crude oil at market prices and also to sell fuel products to the government at market prices. Oil and Gas Law 22/2001, once fully implemented, will permit foreign investors to produce, import and distribute oil-based lubricants and thus end Pertamina's monopoly.

Refinery Projects

Pangkalan Brandan: this small, aging refinery consists of a simple (primary) distillation unit, with no secondary processing unit. Its products are premium fuels, diesel, LSWR and asphalt. Pangkalan has a processing capacity of 5,000 b/d.

Dumai: The refinery has both a primary and a secondary processing unit (Hydro Cracker), which can produce up LPG, naphtha, HVGO and green coke. Its processing capacity is 120,000 b/d.

Sungai Pakning: Built around 1957, the plant refines heavy paraffin crude oil to produce diesel and paraffin, with a capacity of 50,000 Bb/d.

Plaju: The aged refinery was built by Shell in 1930. It consists of both a primary unit and a secondary processing unit. The secondary unit (Fuel Catalytic Cracker Unit) can process up to 135,000 b/d was designed to produce PTA and Polytam. In August 2003, operating problems at Plaju closed the refinery for one month, delaying maintenance on the Balongan refinery. Pertamina has proposed converting the facility into a petrochemical plant by 2008.

Cilacap

Pertamina extended a term purchase contract with Saudi Aramco to buy about 120,000 b/d of Arabian Light crude for processing at the sour train of its 348,000 b/d Cilacap refinery. The agreement is valid over the period July 1, 2001, to June 30, 2002. Pertamina first signed the term purchase contract in 1998, making this the third renewal of the annual contract. Over this period, Pertamina has also continued examining the relatively cheaper option of purchasing Iranian Light or Iraq's Basrah Light for processing at Cilacap's 118,000 b/d CDU. Its secondary processing unit is nearly the same as that of Plaju that is of FCCU type. The difference is the product which was designed more to produce lube base.

Balikpapan II:

The Balikpapan II refinery in East Kalimantan is more modern than Cilacap and Dumai, and consists of both a primary unit and a secondary processing (Hydro Cracker) unit. The plant has a refining capacity of 220,000 b/d and can produce up to wax. Bechtel upgraded the refinery in 1983. Unfortunately, due to the facility design, the plant cannot process crude from co-located crude oil producers in Indonesia (Total, Unocal, Talisman, and VICO. The refinery only processes imported crude oil.

Balongan

Indonesia's newest state-owned refinery at Balongan in West Java has the capacity to process 125,000 b/d of domestic crude. It two production units: the crude distillation unit (CDU) and the residue catalytic cracking unit (RCCU). The CDU processes crude oil into naphtha, kerosene, automotive diesel and residue; the RCCU turns the residue from CDU into LPG and Premium, Super TT and Premix gasoline. The RCCU, one of the world's largest, has processing capacity of 83,000 B/D, but has experienced problems since its commissioning in 1994. The refinery was initially designed to supply export markets, which is why it is also called the Exor (export oriented) I refinery. Balongan supplies about 70% of Jakarta's refined product demand. The plant processes Duri crude (70%), Minas crude (20%) and Jatibarang crude (10%). Pertamina closed the plant for routine maintenance during September-October 2003. However, a crude pipeline leak required Pertamina to run the refinery at 80% capacity for another month.

Kasim

This is a small, mini-refinery has only a simple distillation (primary) unit.

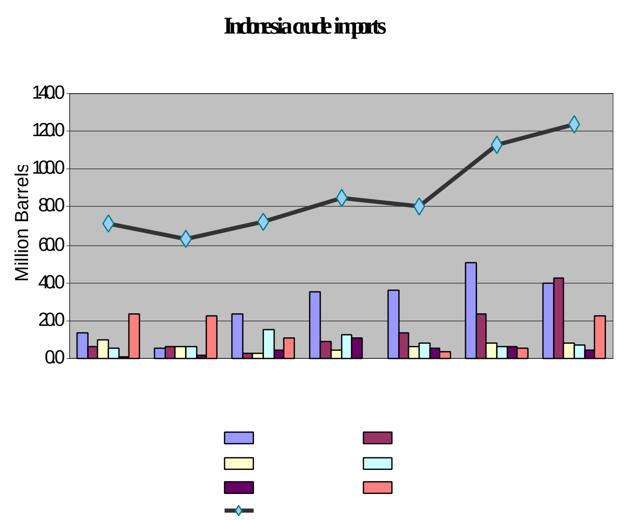
New Refinery Projects?

In December 2003, Pertamina indicated it was in talks with Japan's Mitsui and Mitsubishi Corporations to build a new refinery in East Java to serve that province's large market. Pertamina said Indonesia needs to build a new oil refinery with a capacity of at least 200,000 b/d in order to reduce the country's dependency on imported oil products. Earlier in the year, Pertamina said it hoped to locate the new refinery at the TPPI petrochemical complex compound in Tuban, East Java, to reduce construction costs.

Fuel Imports

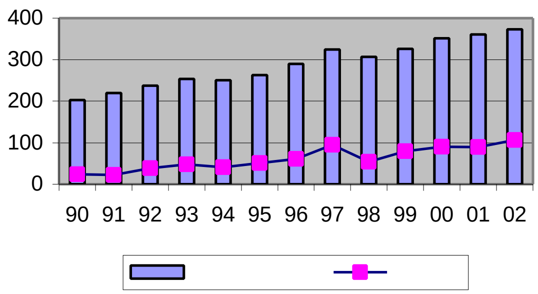
Indonesia remained a net exporter of crude oil and products in 2002, although industry analysts predict that absent new major discoveries of oil, Indonesia will soon become a net importer. Although the gross output of Indonesia's nine refineries is greater than domestic consumption, refined fuel products and crude oil for blending must still be imported.

In 2002, fuel product imports increased



19.2 percent to 293,000 b/d from 2001's 247,000 b/d. The largest import product category was automotive diesel oil (56.7 percent) followed by High Octane Mogas Component (16 percent) and kerosene (19.1 percent).

Domestic Sales and Imports of Fuel Products (In Million Barrels)



Pertamina has adopted a four-pronged approach to source adequate supplies of fuel for Indonesia's domestic market:

- Production from Pertamina refineries;
- Time-limited contracts for fuel imports from the Middle East;
- Spot product purchases from Singapore; and
- overseas crude processing deals (CPD).

Pricing and Subsidies

The government continues to administer petroleum product prices, which remain a matter of great sensitivity in Indonesia. Presidential Decree No.9/2002 on adjusting domestic fuel prices is part of an overall strategy to completely eliminate all fuel subsidies except for kerosene by 2004, as stipulated by Law 25/2000. The decree aims to:

- improve subsidy distribution throughout all socioeconomic classes;
- reduce fuel smuggling caused by the significant difference between domestic and international fuel prices; and
- promote efficient use of fossil fuels and encourage alternative energy source development.

Over the last two years, the Government has significantly reduced the fuel subsidy by increasing fuel prices. The subsidy dropped from Rp 68.4 trillion in 2001 to Rp 30.4 trillion in 2002. The government planned to continue significant reductions in 2003, budgeting only Rp 13.2 trillion to cover the kerosene subsidy. However, wide scale public protests over an average 20 percent fuel price hike in January 2003 caused the government to reverse the large price increases for automotive diesel oil (ADO), industrial diesel oil (IDO) and industrial kerosene. This, coupled with international oil prices higher than the $22/barrel budget assumption raised the actual 2003 fuel subsidy to Rp 30 trillion, according to the Ministry of Finance.

Fuel Prices Increases, 2002-2003
(in Rupiah)

Fuel Type	2001	2002	%Chg	2003	%Chg
Gasoline	1450	1750	20.7	1810	3.4
Kerosene	400	600	50.0	700	16.7
ADO	900	1550	72.2	1650	6.5
IDO	920	1510	64.1	1650	9.3
Fuel Oil	670	1120	67.1	1560	39.3

In 2004, the Government plans to allocate Rp 14.5 trillion in fuel subsidies, based on budget assumptions of a $22/barrel oil price and fuel consumption at 60 million kiloliters. However, in October 2003, Energy Minister Purnomo suggested that the government continue fuel subsidies on certain fuel products through 2004. Citing the sharp public response to the January

2003 price hikes, as well as the coming election year, Purnomo suggested that Law 25/2000 be revised.

In 2002, the Government announced a new pricing formula pegged to world market prices. Pertamina announced a new price list at the beginning of each month. The new formula allowed fuel prices to be fluctuated every month based on the Mid Oil Platt Singapore (MOPS) prices, but within a government-set band in order to protect against extreme fluctuations in world prices. From March – December 2002, the government set the price index at MOPS plus 5 percent.

In January 2003, the Government temporarily stopped linking domestic fuel prices to MOPS after world crude prices soared above $30/barrel over the impending conflict in Iraq. Fuel prices were again linked to MOPS in May 2003, after world crude prices fell below $25/barrel.

Unleaded Gasoline Phase-in

The government program to switch to unleaded gasoline (ULG) nationwide showed some progress in 2003, but its completion target has been delayed to 2005. As a result, Pertamina is out of compliance with the Energy Ministry's Decree No.1585/1999 mandating nationwide unleaded gasoline by January 2003. ULG is currently supplied to the greater Jakarta area (July 2001), Cirebon in West Java (October 2001), Bali (November 2002) and Batam (June 2003).

In 2003, Indonesia overcame the financial difficulties that had delayed the upgrading of refineries to provide adequate unleaded gasoline supply. The Energy Ministry obtained a $200 million loan from a syndicate of international banks, while Pertamina has allocated $75 million of its own funds. The funds are being used to increase unleaded fuel production at the Balongan and Cilacap refineries. Construction is underway – the refinery upgrades should be complete by the end of 2005.

During 2003, the government reduced lead levels in the other parts of the country. The Ministry of Finance asked Pertamina to reduce lead content of gasoline to 0.3 grams/liter (g/l) from 0.5 g/l, since the lower level provides sufficient octane. To independently verify progress in the lead phase-out program, a joint Committee for Leaded Gasoline Phase-Out tested lead and octane levels in gasoline in various cities throughout Java, Bali and Batam in January 2004, with support from the U.S.-Asia Environment Partnership under USAID. The findings show that lead levels fall within the range of 0.18 g/l to 0.28 g/l, consistent with the Ministry of Finance directive.

Downstream Market Liberalization

Beginning in 1997, the GOI has moved slowly but surely to encourage greater capacity and efficiency in the downstream sector. In the early 1990's, the GOI determined that Pertamina did not have the funds to build additional refining capacity and undertook a series of measures to attract private investment in the refining sector. Under Presidential Decree (PD) No. 31/1997, the GOI loosened Pertamina's hold on refining by allowing private refineries to market their products domestically through Pertamina.

Highlights of PD 31:

- Private refineries could be set up by Indonesian companies in partnership with foreign firms or with Pertamina;

- Pertamina would buy oil fuels and other refinery products from private companies on a long-term trade contract basis in line with Pertamina's needs and absorption capability and considering the economics of the private corporation's refinery products;

- Pertamina's buying price for fuel from private refineries would based on the international market price;

- Oil products produced by private refineries which were not needed by Pertamina could be sold by the private companies on the international markets;

- Pertamina would remain the sole distributor of domestic market fuel.

Private refineries may market domestically products, such as lubricants, not otherwise prohibited by Pertamina.

Further Reforms

Oil and Gas Law 22/2001 marked another step toward liberalizing the downstream sector. The Law generally envisions a downstream sector which:

- Eliminates Pertamina's monopoly position by November 2005;

- Ensures that investors and participants are given equal regulatory and legal treatment;

- Establishes a transparent pricing regime based on market prices;

- Rationalizes and streamlines downstream administration;

- Allows local and private investors to enter the downstream sector in four areas: processing, transportation, storage and marketing.

While Law 22/2001 sets general guidance on changes to the downstream sector, the GOI has yet to issue implementing regulations that will provide potential local and foreign players a clear picture of the costs and benefits of downstream participation. In late 2003, the GOI provided investors a look at key points in the draft regulation, including:

- The Minister of Energy and Mineral Resources holds the right to issue various licenses for downstream business entities;

- Downstream authority BPH Migas regulates the provision, distribution and transportation of oil and gas by companies that have obtained required licenses;

- Downstream activities include the processing of crude oil and gas into oil fuel and gas fuel, LPG and LNG; the transport of processed oil/gas products via pipeline and otherwise; the storage of such products; and the sale, purchase, export and import of such products.

- The processing of gas into petrochemical products will be a downstream operation, jointly regulated by the Energy Ministry and other related ministries.

- BPH Migas will determine "special rights" for gas pipeline operators as well as tariffs for other pipeline users.

- The government sets policy on the national Strategic Fuel Reserve, and can obligate downstream license holders to contribute to the reserve. The government determines the size of each company's contribution.

- The government will gradually let the market determine prices of gasoline, diesel and kerosene. However, the government will determine which areas are ready for competition, and continues to set prices for areas considered not yet prepared for free market competition.

- There will be two types of fuel trading licenses: wholesale and limited trading. Wholesale licenses are for companies that intend large-scale sale/import/export of processed oil and gas products and have their own storage facilities. Limited trading licenses are for similar companies that do not have storage facilities.

- Wholesale license holders can distribute their commodities to end users, while limited trading license holders can only sell their commodities to users with storage facilities or receiving terminals.

The impending downstream liberalization has sparked debate within the industry. Some observers claim fuel processing (and prices) would be more efficient and less costly if state-owned Pertamina were allowed to retain its rights over processing and distribution. However, others assert that new players must be afforded access to existing terminals and pipelines in order to invest and create competition. This "open access" policy would be the only feasible way to eliminate barriers created by Pertamina's decades-long monopoly over the sector.

Foreign investors are eyeing the downstream market, but waiting to see the final implementing regulations. Chevron Texaco, BP, PetroChina and Petronas have all publicly expressed interest in downstream investment. In November 2003, Petronas and Pertamina signed an MOU to jointly develop a fuel distribution system in East Java. Under the agreement, both parties would build two main fuel terminals and one 134-km pipeline system linking Tuban and Surabaya. The system could be completed as early as 2007.

Lube Oil

Pertamina has not been able to prevent smuggling of lower-priced imported lubricants, despite its monopoly on lubricant supply, leading to a glut in the market. In addition, according to Pertamina, Kuwait investors plan to build a 125,000 b/d refinery plant in Gresik, East Java, but they have yet to begin.

Pertamina is the only sanctioned importer of lubricants with greater than 70% mineral oil content. General importers may bring in products classified as "synthetics" or hydrocracked base stocks that do not meet this mineral oil threshold. Indonesian lubricant plants are permitted to operate legally only in the recycling of lubricants. Pertamina itself operates 3 lube oil blending plants, located in Jakarta, Cilacap and Surabaya, with a combined capacity of 413,030 liters.

Production capacity of lube oil
Kiloliter/Year

	Company	Capacity
1	Pertamina	413,040
2	Dirga Buana Sarana	1,701
3	Wiraswasra Gemilang	75,000
4	Agip Lubrindo Pratama	6,000
5	Castrol Indonesia	86,000
	Total	582,601