

EXECUTIVE SUMMARY

In 2000, Indonesia ranked seventeenth among world oil producers, with approximately 1.9 percent of the world's production. Indonesia's oil reserves are approximately 9.6 billion barrels. At 1.41 million barrels of oil per day (MMB/D) in 2000, Indonesia's production of crude oil and condensate continued a gradual decline from 1.55 MMB/D in 1999 and 1.56 MMB/D in 1998. The Government's revised 2002 draft budget assumes 2002 crude oil production of 1.23 MMB/D, down from a revised 2001 figure of 1.46 MMB/D.

The budget also assumes an exchange rate of Rp 9,000/US\$ and an oil price of \$22/barrel, down from a revised 2001 price of \$24/barrel. (Actual crude oil prices, depressed by a worldwide economic downturn after the September 11 tragedies, were below even this conservative figure.)

With substantial reserves of natural gas and coal, Indonesia could remain a net energy exporter for a longer period than current forecasts. To do so, the government must implement legislation and policies that will rationalize use of Indonesia's energy resources. Energy policy reform would prolong Indonesia's status as a net oil exporter and enhance efficient use of energy resources.

In line with its International Monetary Fund (IMF) commitments, the government is still pressing forward with plans to hike domestic fuel prices and secure passage of a new draft oil and gas law in the face of earlier failures on both fronts. Fuel prices were raised across the board first in October 2000, then again in June 2001. The Indonesian Parliament

(DPR) agreed to a further 30-percent increase planned for January, which, if implemented in a timely fashion, would reduce the GOI's fuel subsidy burden from Rp 53.7 trillion in 2001 (21 percent of central government spending) to Rp 32.3 trillion (13 percent). As a step forward toward reforming Indonesia's petroleum sector, the DPR passed the oil and gas bill into law in a plenary session on October 23, replacing Oil and Gas Law No. 44/1960 and Law for Pertamina No. 8/1971. The new law changes the face of Indonesia's petroleum sector by radically redefining the role of state-owned Pertamina and deregulating the downstream market.

The Government was also implementing Law 22/1999 on Regional Autonomy and Law 25/1999 on Fiscal Decentralization, which entered into force in January 2001. While current petroleum contracts would be grandfathered, uncertainty over details of the implementing regulations and specific policies continued to create uncertainty and diminished the level of new investments in the petroleum sector.

In 2000 and 2001

- The dollar value of oil and gas exports rose to \$14.4 billion in 2000, compared with \$9.8 billion in 1999.
- In the first six months of 2001, oil and gas exports reached \$7.0 billion.
- Oil and gas imports also rose in 2000 to \$6.0 billion, compared with \$3.7 billion a year earlier.

- In the first six months of 2001, crude oil and oil product imports totaled \$3.1 billion.

Crude Oil

Indonesia's major crude oil customers (in rank order) were Japan, South Korea, China, Australia, Singapore and the United States. Indonesia's overseas markets generally showed a modest increase in sales in 2000 with the exception of China and a particularly sharp decline in sales to Japan and Australia. Except Total Indonesia, the largest production sharing contractors -- Caltex, YPF/Maxus, BP, Conoco, Vico and ExxonMobil -- lowered their production in 2000. Expenditures by petroleum companies also declined 10 percent in 2000 to US \$3.6 million from \$4.0 million in 1999.

The upward trend in the number of new exploration and appraisal wells peaked in 1998 at 145, then fell to 89 in 1999 and 82 in 2000, significantly below the 100 wells drilled in both 1996 and 1997. Unocal continued its ambitious drilling program in the deepwater, offshore East Kalimantan blocks. The number of new production sharing contracts (PSC's) signed improved to 5 in 2000, from 4 in 1999 and the record 29 signed in 1997. Ten contracts were totally relinquished. Three new PSC's were signed in May 2001.

Indonesian crude production profited from high world oil prices, averaging \$26.39/barrel for Sumatran Light Crude (SLC) for the first half of 2001. As a result of OPEC decisions to reduce oil production, Indonesia received three quota declines, of 77,600 B/D in February 2001, 52,000

B/D in April and a further 42,000 B/D in September.

Natural Gas

- Reserves: 170.3 trillion standard cubic feet (TSCF).
- Gross Production: 2,901 billion cubic feet (BCF).
- Export revenue from LNG and LPG: \$7.2 billion in calendar year 2000.

Indonesia has natural gas reserves of over 170.3 trillion standard cubic feet (TSCF) – 94.7 TSCF proven and 75.6 TSCF potential. Under production sharing contracts (PSCs) with Pertamina, Indonesia's largest producers are ExxonMobil, Total, Vico, Arco and Unocal.

Indonesia moved forward on two natural gas agreements with Singapore. The West Natuna pipeline project supports a supply contract with the Singaporean consortium SembGas. Pertamina and Singapore Power Gas signed a Memorandum of Understanding for delivery of natural gas from fields in South Sumatra.

In a further development, Pertamina and Malaysian national oil company Petronas signed an agreement in October 2000 for the supply of natural gas from the West Natuna Sea. Pertamina will supply a total of 1.5 TCF of natural gas to Petronas for 20 years from the B block operated by Conoco. First gas deliveries are expected to commence in July 2002 at 100 million cubic feet per day (MMSCFD), reaching 250 MMSCFD in 2004. Pertamina and its PSC

partners plan to invest \$3.5 billion to build production and underwater pipeline facilities. Revenues from the gas sales are projected to reach \$6.2 billion over the life of the contract.

The largest percentage of Indonesia's natural gas production is processed into LNG and LPG, followed by use by the electricity and petrochemical sectors. LNG production at Arun and Badak (Bontang) for 2000, at 27.3 million metric tons (MMT), fell slightly from 1999 production of 29.8 MMT, reversing the upward trend of the preceding years. Japan, South Korea and Taiwan were the key markets for LNG. LPG production fell further to 2.1 MMT from 2.3 MMT in 1999, with exports also falling from a 1993 peak to 1.31 MMT to the four top customers -- Japan, Hong Kong, Taiwan and Australia.

The government continued actively to promote BP's giant Tangguh gas field, under development in Papua, with a particular focus on potential markets in China and India and awarded a contract for development of Bontang's Train I expansion.

Refining and Imports

- Installed capacity: slightly over 1.02 million B/D at eight state-run refineries.
- Capacity utilization: 96 percent.

Indonesia's nine refineries, with installed capacity to process over 1.02 million B/D of crude oil, continued to experience difficulties in 2000.

In 2000, Indonesian crude oil imports rose to 90 million barrels, largely from

Saudi Arabia, Nigeria and Malaysia, with imports valued at \$2.3 billion for the year. Fuel product imports rose significantly to 90 million barrels valued at \$3.0 billion for the year due to increased domestic demand and limited refinery capacity.

Domestic fuel consumption increased to 54.8 million kiloliters in 2000, about 4.5 million kiloliters higher than pre-crisis levels. It is unclear, however, how accurately this reflects resurgence in consumer demand, as a significant amount of refined fuel was smuggled out of the country to profit from a large differential between the government-subsidized domestic price and prices in neighboring countries. Pertamina experienced difficulty coping with the increased demand, leading to spot shortages of diesel fuel, gasoline, and kerosene in parts of the country in mid-2000 and again in mid-2001. As a consequence, Pertamina sharply increased imports of refined products, reaching agreements for additional monthly purchases from Kuwait and agreements to refine its crude and crude purchases at foreign refineries for re-import to Indonesia. The Indonesian Government estimated its expenditures on fuel subsidies would total Rp 53.8 billion for 2001 (approximately US \$6.4 million) and budgeted Rp 32.3 billion (US \$3.8 million) for the 2002 fuel subsidy.

Petrochemicals

The petrochemical industry was again stagnant in 2001, with no new plants completed. In the wake of the financial and economic crisis that erupted in mid-1997, projects under construction remained in limbo.

Chronology of Recent Events

Month/Year	Event
March 1998	President Soeharto selected for seventh term.
May 1998	President Soeharto resigned; Vice President B.J. Habibie became President.
June 1999	Parliamentary (DPR) elections.
October 1999	New Parliament installed. People's Consultative Assembly (MPR) selected Abdurrahman Wahid as President and Megawati Soekarnoputri as Vice President
July 2001	Special session of People's Consultative Assembly (MPR) removed Abdurrahman Wahid; installed Megawati Soekarnoputri as President and Hamzah Haz as Vice President

Decentralization

On January 1, 2001, Law 22 of 1999 on Regional Autonomy and Law 25 of 1999 on Fiscal Decentralization entered into effect. Law 25/1999 contains formulas for sharing revenue between the central government and various regional authorities. A persistent problem has been local representatives' misunderstanding of the operation of oil and gas revenues, which may lead regional administrations and residents to overestimate future transfers.

Shares of state revenue before and after implementation of Law No. 25/1999

Type of revenue	Central Gov.	Province	Regencies
Before (%):			
- Oil	100	-	-
- Natural gas	100	-	-
- Mining land rent	20	16	64
- Mining royalties	20	16	64
- Land/building tax	10	16.2	64.8
- Duties on land/building acquisition	20	16	64
After (%):			
- Oil	85	3	12
- Natural gas	70	6	24
- Mining land rent	20	16	64
- Mining royalties	20	16	64
- Land/building tax	-	16.2	64.8 (+)
- Duties on land/building acquisition	-	16	64 (+)

Major Milestones for Oil in Indonesia

Year	Event
1890	Telaga Said production field sold to a company that later merged to form Royal Dutch Shell. First production was in 1892.
1912	Standard Oil of New Jersey through its Dutch subsidiary received permission to explore for oil in South Sumatra.
1921	The Talang Akar field discovered, which proved to be the biggest find before WWII.
1942	Japanese took over most oil fields during WWII and slow production.
1945	Indonesia declared independence from The Netherlands.
1962	Pan American Oil Company signed the first contract of work with Pertamina.
1962	Indonesia joined OPEC.
1968	National oil companies Permina and Pertamina merged to form Pertamina.
1978	First LNG plant entered production.

THE INSTITUTIONAL FRAMEWORK

“All natural resources in the soil and the waters of the country are under the jurisdiction of the State and shall be used for the greatest benefit and welfare of the People.”

-Article 33, Indonesian Constitution

The Indonesian Parliament (Dewan Perwakilan Rakyat – DPR) passed the oil and gas bill into law on October 23, 2001. The new law replaces Oil and Gas Law No. 44/1960 and Law for Pertamina No. 8/1971. It will reduce the government's power over the petroleum sector and allow for open competition in the downstream oil and gas distributing and marketing area. The new law authorizes the establishment of an implementation agency ("badan pelaksana") and regulatory agency ("badan peraturan") to assume state oil and gas company Pertamina's roles. The implementation agency will replace Pertamina in managing Production Sharing Contract (PSCs) with private oil and gas companies, thus eliminating the conflict-of-interest inherent in upstream producer Pertamina regulating the activity of its competitors. The law also removes Pertamina's monopoly in the downstream sector with the regulatory agency assuming the responsibility for managing domestic fuel distribution and supply.

The law stipulates that the two new agencies must be established within one year of the law's enactment while Pertamina must establish itself as a limited liability company ("persero") within two years. Pertamina, nevertheless, must maintain its overall responsibility for domestic fuel supply and distribution for four years after the law's enactment. Existing PSC's will be grandfathered and in effect until

expiration of the contract. The GOI must still prepare five separate implementing regulations for the upstream sector, the downstream sector, Pertamina's transition to a limited liability company, and for the establishment of the implementing and regulatory agencies.

Article 33 of the Constitution still requires the government to continue its key role in the management of Indonesia's energy sector. All energy activities dealing with petroleum and gas fall under the Ministry of Energy and Mineral Resources, which is charged with creating and implementing Indonesia's energy policy. The Ministry of Energy and Mineral Resources is divided into several directorates, with the Directorate General of Oil and Gas (MIGAS) responsible for all aspects of the petroleum industry, including its development, employee training, and promulgating regulations.

Pertamina

Under current government regulation, Pertamina is responsible for the production of oil and gas and is in charge of all petroleum ventures for Indonesia. A legal requirement to supply the nation with adequate petroleum products is in force until the new oil and gas law is implemented. Pertamina carries out its responsibilities principally through Production Sharing Contracts in cooperation with joint venture

partners. Five regional offices regulate exploration and development activities. With nine refineries and ownership or franchising of gasoline stations, Pertamina is responsible for downstream oil activities as well.

Pertamina's top leadership was supportive of the oil and gas bill, and took several steps to move the company proactively forward toward a newly deregulated era. Pertamina President Baihaki Hakim, appointed on February 28, 2000, survived several changes of cabinet and the transition from President Abdurrahman Wahid to President Megawati. Baihaki announced on December 11, 2000 that the Indonesian government had issued presidential decree 169/2000, which authorized the restructuring of the state-owned petroleum company.

Among other changes, the decree simplified Pertamina's organizational structure from five directorates and one semi-independent body to five directorates only. Before the change, Pertamina was organized into directorates for:

- exploration and production;
- processing;
- supply and marketing;
- shipping, harbors, and communication;
- general affairs; and
- financial affairs.

In addition, its Foreign Contractors Management Body (BPPKA -- Badan Pembinaan Pengusahaan Kontraktor Asing) had primary responsibility for managing foreign investors and approved contractors' budgets, work programs and future contracts.

After restructuring, Pertamina had five major elements with corresponding directors (vice-president equivalent):

- upstream sector (formerly the exploration and production directorate);
- downstream sector (merging processing; shipping, harbors, and communication; and supply and marketing);
- development;
- financial affairs; and
- oil and gas contractors.

The development directorate has responsibility for, among others, human resources management, information technology, strategic planning, environmental issues, and business development. If the oil and gas bill is enacted and an independent Implementation Agency is established, then the new oil and gas contractors' directorate will be dissolved.

Pertamina also plans to reduce staffing by as much as 30-40 percent over a five-year period beginning in 2001. The objective would be to reduce to a staffing level of 18,000 employees from the current 26,000. The goal would be reached largely through attrition and early retirement, according to Baihaki.

While ranking 9th in crude oil production, Pertamina was Indonesia's 5th largest producer of natural gas in 2000 so that, on a barrels-of-oil-equivalent basis, Pertamina is a significant contributor to Indonesia's petroleum output. On various occasions, Pertamina executives have expressed their resolve to enhance Pertamina's position in the upstream sector to position the company for petroleum sector deregulation. On

December 8, 2000, then Director for Exploration and Production Gatot K. Wiroiyudo said Pertamina would increase its exploration and production spending from 2000's Rp 1 trillion (US \$119 million) to Rp 1.8 trillion (US \$214 million) in 2001. The increase in spending is part of an ambitious plan to spend a total of some Rp 9 trillion (US \$1.07 billion) over a five-year period to boost Pertamina's output from 210,000 barrels of oil equivalent per day (BOE/D) to 425,000 BOE/D by 2005. In a February interview, Baihaki expressed the target slightly differently in terms of tripling Pertamina's current crude oil production of 46,000 barrels per day (B/D) to 150,000 B/D by 2004.

In other developments, BP transferred its X-Ray field offshore West Java on July 26, 2001 to Pertamina following the expiration of its contract. The field, Pertamina's first offshore operation, has 34 wells and two platforms and produces 500 barrels of crude and three million cubic feet of gas per day. Also in July, Pertamina decided to allocate US \$10 million to expand its operations to other countries, concentrating first on Vietnam, Burma, Iraq, and Libya. The money would be used for activities such as field studies, feasibility studies, and seismic and geological surveys.

Other Agencies

Other government agencies responsible for Indonesia's petroleum sector include:

- National Energy Policy Coordinating Board (BAKOREN) – chaired by the Minister of

Energy and Mineral Resources; shapes Indonesia's energy policy;

- The Energy Resources Technical Committee (PTE) – performs research on technical sites to better inform BAKOREN;
- The Electric Power Generation Development Team – oversees the generation of power for the country;
- Indonesian Parliament – through Commission VIII, works on issues related to Indonesia's energy sector.

Production Sharing Contracts

In 1966, the government set up a type of agreement between Pertamina and its foreign partners known as the Production Sharing Contract (PSC).

Under the terms of the PSCs:

- Pertamina manages the operations of the contractor;
- Contractors pay a bonus when the PSC is signed (not cost-recoverable);
- Contractors provide all funds to conduct operations;
- Contractors recover start-up costs only after commercial production begins;
- Contractors pay Indonesian income taxes, and Pertamina reimburses the contractors for other taxes paid in conducting operations;
- PSCs allow for 6 to 10 years exploration and 30 years total terms;
- For most PSCs, the profit-sharing split is on a net income basis of 85/15 (government/contractor) for oil, and 70/30 for gas.

Additional Contracts

Pertamina uses various other contractual arrangements to deal with petroleum contractors.

Technical Evaluation Agreements (TEA) give oil companies access to Pertamina data on seismic or other petroleum-related information for possible exploration use.

Technical Assistance Contracts (TAC), Joint Operating Agreements (JOA) and Enhanced Oil Recovery (EOR) contracts are used for Pertamina's own oil fields. Pertamina may hire a contractor to produce oil in a field on its behalf, with a specified amount of petroleum going directly to Pertamina.

Joint Operating Bodies (JOB), which are applicable only in JOAs, are designed to pair Pertamina with a contractor in an area that has previously been worked. This limits exploration costs. Under the deal, the company matches previous expenditures or pays the first three years of work, whichever is greater. Then the field is split 50/50 (government/ contractor).

Fiscal Decentralization Law

With implementation of a new fiscal decentralization law in January 2001, revenue-sharing formulas came into effect that split 15 percent of the Indonesian Government's net oil revenues and 30 percent of its net natural gas revenues with provincial and district governments. Provinces and districts with both resources will receive both revenue shares. Of the 15 percent of the oil revenue flowing to the regions, 6 percentage points will go

to the district of origin (where the PSC is located), 6 percentage points will be shared among the other districts in the province, and 3 percentage points will go to the provincial government. The same relative shares apply to gas revenues. These distributions had not taken place as of this report's publication.

OPEC

Indonesia joined the Organization of Petroleum Exporting Countries (OPEC) in 1962. Currently an active member, Indonesia has hosted important OPEC conferences in 1964, 1976, 1980 and 1997.

In an effort to control oil price volatility and to counter what they saw as softening crude oil prices, OPEC oil ministers agreed to production cuts of 1 million barrels per day (b/d) at a mid-March 2001 meeting and to a second 1 million b/d in early July. On each occasion, Indonesia received a 52,000-b/d quota reduction, effective first on April 1, 2001, then again on September 1. Indonesia's new OPEC production quota on September 1, 2001 was 1,203,000 b/d, or probably slightly less than its actual crude output.

OPEC Quota (Million B/D)

Source: MIGAS

Other Professional Bodies

IPA

The Indonesian Petroleum Association (IPA) was established in 1971 in response to growing foreign interest in the Indonesian oil sector. Contractors and the government meet frequently to discuss matters such as production ventures and energy economics. The objective of the IPA is to utilize public information to promote the exploration, production and refining aspects of the petroleum industry in Indonesia.

IGA

The Indonesian Gas Association (IGA) was established in 1980 under the sponsorship of Pertamina and key gas producers, Mobil and Huffco. The main objective of IGA is to provide a forum to discuss matters relating to natural gas and to advance knowledge, research and development in the areas of gas technology. IGA also aims to promote the development of infrastructure and cooperation among producing, transporting, consuming and regulatory segments of the gas industry.

The IGA and the IPA sponsored Indonesia's membership on the Permanent Council of the World Petroleum Congress (WPC).

ACE

The multilateral ASEAN Center for Energy (ACE) is a regional energy center established under ASEAN. Founded effective January 1, 1999, with its head office in Jakarta, ACE grew out of the former ASEAN-

European Commission (EC) Management Training and Research Center (AEMTRC). AEMTRC had an objective of strengthening cooperation among the ASEAN member countries and between ASEAN and the European Union in the field of energy. ACE now opens the door to cooperation with other dialogue partners while still maintaining a partnership with the European Commission. ACE works toward: providing a comprehensive assessment of the energy situation in ASEAN; developing a regional framework for national energy programs and policies; and formulating policy recommendations for stronger regional cooperation on energy.

CRUDE OIL

Reserves and Production

In 2000, Indonesia ranked seventeenth among world oil producers, with approximately 1.9 percent of the world's daily production. The GOI places Indonesia's crude oil reserves at 9.6 billion barrels, with proven reserves of 5.1 billion barrels and potential reserves of 4.5 billion barrels. The figures are slightly lower than in 1999. Totaling \$14.4 billion in 2000, oil and gas exports (including LNG) accounted for 23.1 percent of Indonesia's export earnings, up from 20.1 percent in 1999.

Indonesia produced an average of 1.4 million barrels per day (b/d) in 2000 comprising 1.3 million b/d of crude oil and 141 thousand b/d of condensate in 2000. Crude and condensate production was down nearly 6 percent over the previous year's level of 1.5 million b/d (1.351 million b/d of crude and 149 thousand b/d of condensate). Monthly statistics confirmed a generally downward trend in 2000 with crude production dropping from 1.305 million b/d in January to 1.255 million b/d in December and condensate production dropping from 156.7 thousand b/d to 148.9 thousand b/d. In June 2001, Indonesia's actual crude oil production averaged 1.345 million b/d consisting of 1.215 million b/d of crude and 120.2 thousand b/d of condensate.

Six major producers -- Caltex, YPF Maxus, BP, Conoco, ExxonMobil, and Vico, -- accounted for the bulk of the 86,000 b/d drop in 2000 from the

previous year's output. Caltex, Indonesia's largest producer accounting for 49.9% of Indonesia's total crude production, produced 705,800 b/d in 2000. This was 5.4 percent lower than 1999 production of 746,000 b/d. Production of Sumatra Light Crude (Minas) and the heavy, sweet Duri crude continued to decline.

Lower production resulted in production losses averaging 30,000 b/d from Caltex alone in 2000. Civil unrest, blockades to operational sites, labor strikes, rampant theft, damage to production facilities, and uncertainty about future control of the Coastal Plains Pekanbaru (CPP) block were some factors contributing to the decline. (Note: In August 2001, the GOI extended the CPP block contract to safeguard its production and to allow time for the GOI and Riau government to resolve their disputes over future operatorship.) This cost Indonesia an estimated US \$300 million in lost oil revenue in 2000. Caltex foresees production losses averaging closer to 40,000 b/d in 2001, resulting in monetary losses of \$400-\$500 million.

Condensate production from ExxonMobil's Arun field declined by 33.3 percent to 28,200 b/d. On the positive side, production from Medco, Indonesia's largest private oil producer, was up 79 percent to 67,200 b/d from 37,500 b/d in 1999.

Exploration and Investment

Of an estimated 60 oil basins, over 22 have been extensively explored. Most oil exploration is currently being

carried out in the basins of Western Indonesia under PSCs. The bulk of Indonesia's oil reserves are located onshore and offshore in Central Sumatra and Kalimantan. The Government has placed increased emphasis on developing oil reserves in remote locations, such as Papua, where proven reserves are estimated at 87.5 million barrels.

Three new production sharing contracts were signed in May 2001. Five new contracts for oil and gas exploration and development were signed in 2000, up slightly from 4 in 1999 but significantly below the record 29 signed in 1997. Two existing contracts were extended in 2000. The 5 new contracts were awarded in May 2000 -- one production sharing contract (PSC) and four Technical Assistance Contracts (TACs). The new PSC was Energy Equity Pty. Ltd. for Bone block offshore Sulawesi. The four TACs comprised Energy Equity Pty. Ltd. for Gajah Besar oil field in South Sumatra; PT. Indama Putra Kayapratama for Kaya oil field in South Sumatra; PT. Binatek Reka Kruh for Kruh field in South Sumatra; and a joint venture between PT. Wahana Sad Karya and First Union Resources for Jatirangon oil field in West Java. The two extended contracts were Seram/Bula block in onshore Maluku and Kufpec Indonesia Ltd. for Seram offshore Maluku. The seven contractors have agreed to invest a total of US \$112.3 million for exploration during the first ten years and to pay US \$1.1 million as an information bonus. The total number of active oil contracts rose to 155.

A total of 165,926 kilometers of seismic (government data combine 2-D and 3-D) activities was carried out in 2000, figures which have trended steadily downward since the 1997 peak. The number of exploration and appraisal wells drilled dropped to 82. The number of wildcat drills, at 66, recovered to historic levels after dipping down to 46 in 1999, the lowest since 1970. Traditionally high, the associated success ratio (successful wells versus wells drilled) reached 50 percent, up from 41.3 percent in 1999, but down from 53.3 percent in 1995.

Pertamina reported that many oil companies shelved their investment plans during the first nine months of 2001. Pertamina attributed the drop to security problems affecting PSC operators and their uncertainty over the impact of new legislation, e.g., decentralization and the newly passed oil and gas law. Investment in the oil and gas sector reached only US \$1.64 billion during January-September, far below the US \$5.4 billion targeted for the year.

In 2000, petroleum company expenditures on exploration, development and production were forecast to reach \$4.1 billion. Actual expenditures in 2000, at \$3.6 billion, fell from \$4.0 billion in 1999.

Mergers and Acquisitions

The October 10 merger of Chevron and Texaco is official. The new company, ChevronTexaco, is expected to provide improved reporting efficiencies and greater accountability of three joint Indonesian subsidiaries -- PT Caltex Pacific Indonesia, ChevronTexaco Darajat, and MCTN CoGeneration, which will now report

directly to ChevronTexaco Overseas Petroleum as the Indonesian Business Unit. The merger will also bring Texaco's heretofore separate interest in the Natuna Sea B Block under the Caltex umbrella.

Conoco's acquisition of Gulf Canada led to a change of Gulf Indonesia Resources' president, but Conoco Indonesia and Gulf Indonesia Resources continue to exist as separate enterprises in Indonesia even as the Conoco parent company assumed 75-percent ownership of Gulf Indonesia Resources.

Devon's merger with Santa Fe-Snyder led to a change in the name of the Indonesian operation from "Santa Fe Energy Resources Companies" to "Devon Energy Companies in Indonesia."

The Future

Pundits have been forecasting Indonesia's imminent shift from net oil exporter to net importer since at least the early 1970's. New discoveries and technological advances, such as enhanced oil recovery and deep-water exploitation, have successively postponed this transition. Taking reserves-to-production ratio and consumption levels into account, Indonesia is now forecast to become a net oil importer in the second decade of the 21st century.

To maintain its net exporter position, Indonesia should improve its fiscal terms for oil and gas production for both mature and frontier areas. In mature fields, the 85/15 (government/contractor) split for oil and 70/30 split for gas make

thresholds higher than in other parts of the world. In frontier areas, where the split is 60/40 for gas and 65/35 for oil, the balance between risk and reward is generally viewed as insufficient to attract major exploration funds. These problems are exacerbated by small reserve accumulations and high infrastructure costs.

With substantial reserves of natural gas and coal, Indonesia could still remain a net oil exporter for a substantially longer period. To do so, however, the government has to implement legislation and policies that will rationalize use of Indonesia's energy resources. Energy policy reform will enhance efficient use of energy resources. Ideally, key measures would include:

- Proper incentives to encourage industry to expand the domestic use of natural gas and coal;
- General enhancement of the terms of Indonesia's production sharing contracts (PSCs) vis-à-vis other oil producing countries to make the PSCs more competitive;
- Tax consolidation and improvement of the fiscal terms for oil and gas production; and
- Increases in electricity tariffs and elimination of fuel subsidies so that domestic energy pricing is based on costs of production and market conditions.

The new oil and gas law and pending draft legislation for electricity and mining give Indonesia the opportunity to implement some of the changes necessary to allow the country to rationalize its use of energy resources.

New Discoveries and Fields Coming on Line

Indonesia offered nine exploration blocks in the first half of 2001. While 20 companies made preliminary inquiries, only eight bidders in the end competed for six blocks, with no bids tendered on three. This was the first round in which the Ministry's Directorate of Oil and Gas (MIGAS) managed the licensing, a function formerly carried out by state petroleum company Pertamina. The nine blocks and bidders are detailed in the table below:

NAME	LOCATION	BIDDERS
Popodi	Makassar Strait	Exol
Donggala	Makassar Strait	Exol Unocal TotalFinaElf
Papalang	Makassar Strait	Exol
Taritip	Makassar Strait	None
Jangeru	Makassar Strait	None
Tanjung Aru	Makassar Strait	Exol Amerada Hess
Nila	Natuna Sea	Gulf Indonesia Conoco
Bawean I	NE Java Sea	BP Santos
Bawean II	NE Java Sea	None

The Makassar Strait blocks are immediately east of Unocal's existing deepwater blocks and further in to the strait. The blocks run from north to south in the order listed above. The Nila block fills in an area not already assigned in the West Natuna Sea area that is already under active development. The Bawean blocks are near BP and Santos' current Production Sharing Contracts (PSC). The tender was opened for bids on March 1 and closed on June 15, and, for the first time, information was provided through e-marketplace Indigopool.com, an internet company affiliated with petroleum services

company Schlumberger. The relatively sparse response suggests that Indonesia should consider improving PSC terms as described above.

Higher Oil Production Expected

According to Pertamina Director for Upstream Business Iin Arifin Takhyan, Indonesia's crude oil production may improve in the near future. Oil fields now under development could increase crude production to 1.6 million b/d (1.45 million b/d of oil and 0.15 million b/d of condensate) in 2004 from current production rates of 1.21 million b/d of oil and 123 thousand b/d of condensate. The additional output would come from the Belanak block in West Natuna operated by Conoco and the Cepu block in Java operated by ExxonMobil. The Belanak block is projected to produce 100 thousand b/d of oil and condensate and Cepu block to produce 150 thousand b/d.

PSC Update

EXXONMOBIL was created from the merger of Exxon and Mobil in December 1999, leading to the consolidation of Exxon, Esso, and Mobil operations in Indonesia. Mobil in 1998 celebrated 100 years of doing business in Indonesia, including 30 years as a production-sharing contractor, 20 years as a producer of liquefied natural gas and 10 years as a producer of liquefied petroleum gas.

In June 2000, ExxonMobil acquired a 51-percent interest in the Cepu block, located in Central/East Java, through its Mobil Cepu Limited acquisition of a Technical Assistance Contract from PT Humpuss Patragas. Ampolex

Cepu Pte. Limited, another Exxon-Mobil subsidiary, owns the remaining 49-percent interest. Also in Central/East Java, ExxonMobil owns 30 percent in the Blora TAC and 68 percent in the Madura PSC.

ExxonMobil Corporation announced on April 12, 2001 that Mobil Cepu Limited, an affiliated company, had made a major oil discovery in Indonesia. The Banyu Urip No. 3 (BU-3) well verified the existence of a reserve estimated to be well in excess of 250 million barrels in the Mobil Cepu-operated Cepu block. The well encountered nearly 1,000 feet (305 meters) of gross oil and over 300 feet (91 meters) of gross gas pay, and oil was tested at a rate of nearly 4,500 b/d from Middle Miocene carbonate and sandstone formations. Indonesia state-owned oil company Pertamina has accepted an option to acquire a 10-percent share in the project. (Note: Pertamina later argued that it should have a larger share. ExxonMobil Indonesia and Pertamina are discussing how much more Pertamina might acquire.) Planning for a phased, fast-track development is now under way. Initial production is expected from the Banyu Urip discovery by 2003 through six to ten wells utilizing an early production system in parallel with activities leading to full field development.

ExxonMobil natural gas operations in North Sumatra include the Arun, Pase, and South Lhoksukon fields, and a 50-percent interest in A-Block (Gulf is operator). (See additional details in the LNG chapter.)

UNOCAL produces more than 50,000 barrels of oil and 225 million

cubic feet of gas per day from 9 offshore fields. The company reported offshore oil and gas finds in 2001 with two successful exploration wells on the Ranggas prospect offshore East Kalimantan. The Ranggas-2 well encountered 155 feet of net oil pay and 118 feet of net natural gas pay, while the Ranggas-3 well found 306 feet of net oil pay and 123 feet of net gas pay. Based on drilling to date, Unocal estimated the gross unrisks resource potential for the Ranggas structure at between 190 to 650-million barrels of oil equivalent. Unocal now plans to drill four to eight wells on adjacent prospects beginning later this year.

Currently, Unocal estimates its current offshore discoveries at three other sites at between 210 to 320 million barrels-of-oil equivalent (MMBOE). Unocal announced in June 1999 that it had made a significant discovery in the Kutai Basin Rapak Block PSC with the successful drilling of the Janaka North 1 well. The Rapak PSC is located east of the Makassar Straits PSC, where, in March 1998, Unocal discovered hydrocarbon reserves in the Seno structure. In October 1997, Unocal made its first discovery in the adjacent Merah Besar structure.

Unocal leads in the exploration of Indonesia's deepwater resources in the Kutai Basin offshore East Kalimantan, where the company has expended US \$400 million in drilling capital and discovered 7 oil and gas fields. Unocal is currently moving forward with development of the West Seno field -- Indonesia's first deepwater production which is expected to come on line in early 2003 and produce 60,000 barrels of oil per day. The total forward expenditure on this project will be approximately US \$700

million.. Once in production, the field, at 3,000 feet of water, will be Indonesia's first very deep water site. In addition, a plan for the development of the Merah Besar oil and gas discovery, which straddles the Makassar and East Kalimantan PSC (Unocal), has been approved by Pertamina. Natural gas from both discovery areas is eligible for participation in the gas supply packages for the Bontang LNG plant.

Unocal is 100-percent owner/operator of the East Kalimantan PSCs. In 2000, Unocal bought out ExxonMobil's 50-percent share in the Makassar Straits PSC, where they had been equal partners since September 1996 when Unocal first acquired a 50-percent interest and operatorship from then Mobil. Additionally, Unocal bought back ExxonMobil's 30-percent share of the Rapak PSC, leaving Lasmo with its 30 percent share. In May 1999, Unocal assigned 20 percent of its working interest in the Ganal and Sesulu PSCs to Lasmo while retaining an 80-percent share. Unocal remains operator of these PSCs.

CALTEX extended its operatorship of the Coastal Plains Pekanbaru (CPP) PSC, expiring in August 2001, at the very last minute. President Megawati ordered Minister of Energy and Mineral Resources Purnomo Yusgiantoro on August 1 to extend Caltex's contract for another year. In the face of opposition and demonstrations by Riau residents, Caltex, Pertamina, and the Riau government met on August 8 and agreed that Caltex would provide new community development programs, increase training opportunities, and drill at least nine additional wells.

The agreement also stated that Pertamina and the Riau government would form a team to recommend, within three months, an operational arrangement to cover the period after the extension expires in August 2002. Caltex expressed its willingness to participate in the future operation of the CPP block if it made sense economically and if the GOI and Riau favor such participation.

In May 2001, Caltex also signed the new exploration Kisaran PSC, which is located in North Sumatra province and adjacent to existing production operations. Caltex is targeting new oil and gas reserves, and plans to commence a 3D seismic acquisition program before the end of 2001.

GULF INDONESIA RESOURCES, a subsidiary of Gulf Canada Resources Ltd., confirmed a successful delineation well (Suban-3) in 1999 on its Suban field onshore Sumatra, with a flow rate of 272 b/d of crude and condensate and 27.8 MMCF/D, which was followed up in 2000 with Suban-4. The Suban field was discovered in January 1999 and is located 20 kilometers southwest of Gulf's producing Dayung field and 64 kilometers from the Corridor project's central gas plant at Grissik. Gulf's PSC partner, **TALISMAN ENERGY**, announced that the Suban-6 appraisal well confirmed the extension of the Batu Raja Reef encountered in Suban-4 into the central fault block of the Suban fields, which may result in a substantial increase in reserves. As of mid-2001, preparations had begun to test Suban-6 and drill Suban-7. Partners in the Corridor Block are Gulf (54 percent), Talisman Energy (36 percent) and Pertamina (10 percent).

MEDCO, Indonesia's largest private oil company, began exporting crude oil in 2000 and formally changed its name to "PT Medco Energi Internasional Tbk." The company operates eight exploration and production working areas and holds two PSC licenses in Burma. In Indonesia, it acquired 75-percent working interests in the West Simenggaris and West Madura blocks from subsidiaries of Australia-based City View Energy Corporation and purchased Union Texas' shares in Senoro-Toili Ltd., an oil company in Sulawesi working the Senoro Toili block. Also in 2000, Medco discovered the Soka oil and gas field in South Sumatra.

Medco has projected 20 million barrels of oil reserves in its new Matra field discovery in South Sumatra. The field is about 26 km from Medco's Kaji Semoga field, which produces Kaji light sweet crude (API gravity of 40 degrees and zero sulfur). The field pumps 69,200 b/d to Pertamina's 133,000 b/d Plaju refinery with an additional 15,000 b/d exported under a term contract to Japan's Mitsui. The new Matra field is expected to come onstream by the fourth quarter of 2002. Medco as yet has no projections on Matra's initial or peak crude production rates, but believes the oil is similar to its Kaji crude. Medco is now Indonesia's third largest crude producer after Caltex and Repsol YPF. With the Matra discovery, Medco's recoverable oil reserves are estimated at 241 million barrels of crude and 140 billion cubic feet of natural gas.

In November 1999, Medco concluded a debt restructuring agreement, converting 40 percent of its debt to

equity and extending payment terms of the remainder. New Links, a joint venture between the Indonesian Panigoro family and Credit Suisse First Boston, now owns 87 percent of Medco, which is traded on the Jakarta Stock Exchange. New Links is currently in negotiations to divest part of its shares.

DEVON ENERGY reported that its most recent well, the North Gemah-1, is the fiftieth successful well of 51 total wells in the Jabung block. The well, drilled to a total depth of 6,801 feet, tested a new geologic structure having a hydrocarbon column in excess of 700 feet. The well flow tested at combined rates of 29 million cubic feet per day (MMCFD) of natural gas and 1,000 barrels per day of condensate from selected zones. Devon Energy's local affiliate operates the Jabung block with a 30 percent working interest. Other partners include Amerada Hess (Indonesia-Jabung) Ltd. with 30 percent, Kerr-McGee Sumatra Ltd with 30 percent and Pertamina EP with 10 percent. Devon also announced the successful completion of the wildcat KOI-1 well on its Salawati block offshore Irian Jaya. The well was drilled to a depth of 4,523 feet in 105 feet of water. It tested at combined rates in excess of 900 barrels of oil per day and 2.5 MMCF of gas per day from two intervals. This well expands the offshore exploration potential in the area of the existing Teluk Bureau A and Teluk Bureau C discoveries. Devon continued its development of the onshore East Java Tuban block, drilling the Sukowati-1 exploratory well near its existing Mudi field, which produces an average of 11,000 b/d. The well flowed an estimated 6,400 b/d at 2,000 meters in June 2001 from

a carbonate reservoir that also yielded results for ExxonMobil's exploration of the Cepu block.

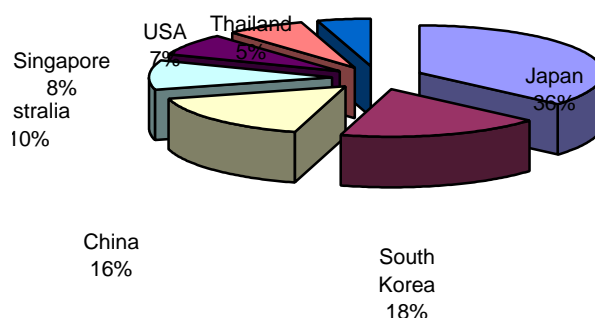
PETRONAS, a Malaysian company, which also conducts exploration activity in Pakistan and Vietnam, should be able to expand its presence in Indonesia readily but currently has only a modest presence in its neighbor's oil and gas sector. Petronas, through its Petronas Carigali subsidiary, owns a 50% interest in the Pasemah block, South Sumatra, which it acquired from Medco (which still has the remainder) in 2000, and the Ketapang block offshore Java (in an equal partnership with Gulf Indonesia). Petronas also announced on September 18, 2001, that it had been awarded a stake in the Tanjung Aru block located offshore Kalimantan in the Makassar Straits. Petronas Carigali will hold 50 percent and Amerada Hess has the other half and will operate the block. The block covers 4,160 square meters with water depths ranging from 150 to 1,700 meters in the rich Kutai basin. The Malaysian state-owned petroleum company also has a 25-percent equity in Premier Oil Ltd which has exploration and production interests in Indonesia and is actively involved in the supply of natural gas from the West Natuna offshore area to Singapore. At one time, Petronas was also rumored to be interested in acquiring the Indonesia properties of Repsol-YPF.

Marketing the Crude

Indonesia, through Pertamina and its foreign partners, sells crude oil under one-year contracts, which include a price adjustment mechanism.

Indonesian crude generally commands a premium because of its low sulfur content. Indonesia's representative Minas crude (in crude marketing terms, referred to as Sumatra Light Crude) produced in Central Sumatra has an American Petroleum Institute (API) gravity of 34.5 degrees at 60°F and a sulfur content of between 0.06 percent and 0.10 percent by weight.

**Export Market of Indonesian Crudes
in 2000**



Effective October 1, 1999, Pertamina changed the pricing formula for official export prices of Indonesian crudes. The Indonesian Crude Price (ICP) formula has three components: the Asian Petroleum Price Index (APPI), Rim Intelligence Company, and Platts. The APPI component is derived from twice weekly APPI price assessments adjusted by a basket of regionally traded crude oils (including Indonesian Sumatra Light Crude and Malaysian Tapis) using a 52-week moving average. Pertamina lowered the portion of the APPI panel quotes from 33.3 percent to 20.0 percent and increased the portion of spot assessments of Platt and RIM to 40.0 percent each. The purpose of the

adjustment was to better reflect prices in the world market by putting more emphasis on the spot market. The Ministry of Energy and Mineral Resources reviews the oil pricing formula semi-annually.

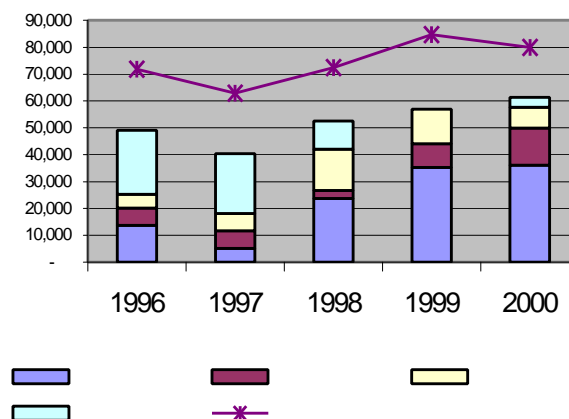
Asian countries are the largest markets for Indonesian crude. Japan accounted for 34 percent of Indonesian crude oil exports in 2000, followed by South Korea (17 percent), China (15 percent), Australia (9 percent), Singapore (7 percent), and the United States (6 percent).

In 2001, Pertamina opened an office in Singapore through its wholly owned Hong Kong-based subsidiary Pertamina Energy Trading (ex-Perta Oil). The new office promotes and facilitates trade in crude oil and fuel between Singapore and Indonesia, offers logistical services to Pertamina, and represents Pertamina's interests. Pertamina's former office in Singapore was closed following 1997-1998 Asian financial crisis.

Imports

Indonesia remains a significant importer of crude oil. In 2000, Indonesia imported over 219,100 B/D of crude (an annual total of 80.0 million barrels), at a cost of \$2.3 billion for the year, mainly from Saudi Arabia (45 percent), Nigeria (17 percent), Malaysia (10 percent), China (7%), and Vietnam (6 percent). Oil product imports increased by almost 12.5 percent to 90 million barrels for the year.

Crude imports by Country



PETROLEUM PRODUCT CONSUMPTION AND REFINING

Overview

In 2000, Indonesia's production of petroleum-based fuels and non-fuels rose slightly to 1,022.3 B/D (162.5 million liters/day), largely due to increased fuel production. Most of the petroleum products refined in Indonesia are destined for domestic consumption. Consumption increased in 2000 to 54.8 million kiloliters (KL), up from 50.8 million KL in 1999 and 48.1 million KL in 1998. Consumption increased in nearly all categories of fuel, with the strong likelihood that a significant part of the increase resulted from smuggling of Indonesian fuel products to neighboring countries. In 2000, fuel product imports rose to 90.0 million barrels, at a cost of \$3.0 billion and up sharply from 1999's 79.9 million barrels.

Domestic Consumption

According to the Ministry of Energy and Mineral Resources, domestic demand for oil products rose eight percent to 54.8 million KL in 2000 from 50.8 million KL in 1999. The Government has predicted domestic demand will increase to 58.8 million KL in 2001, due to more positive GDP growth projections. Domestic sales of fuel products during the first half of 2001 reached 30.0 million KL. The majority of domestic consumption is for transportation (47 percent), industry (22 percent), household use (23 percent) and electric power (8 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. The private sector is also involved in selling 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	1998	1999	2000
Automotive Diesel Oil	19,674.0	19,835.9	21,734.7
Gasoline	10,971.7	11,515.4	12,421.8
Kerosene	10,144.5	11,926.7	12,455.2
Fuel Oil	5,229.3	5,429.1	6,013.1
Industrial Diesel Oil	1,271.8	1,518.4	1,451.2
Avtur	796.9	545.2	744.1
Avgas	5.7	5.6	4.6
Total	48,099.7	50,776.3	54,824.7

Refining Capacity

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 naphtha) and non-fuels (such as asphalt and lubricants).

Pertamina is operating its refineries at a combined rate of 99.9% of total capacity of 1.057 million b/d. There are no refinery shutdowns planned at any of the Indonesian refineries for the remainder of 2001.

Oil Refining Plants

Refinery	Installed Capacity (1000b/d)	Crude Processed 2000
Pangkalan Brandan	5.0	3.4
Dumai	120.0	123.6
Sungai Pakning	50.0	46.2
Musi	135.2	122.2
Cilacap	348.0	323.9
Balikpapan	260.0	273.6
Balongan	125.0	119.9
Kasim	10.0	7.0
Cepu	3.8	2.5
TOTAL	1,057.0	1,022.4

Fuel Imports

Indonesia remained a net exporter of crude oil and products in 2000, although industry analysts predict that barring any new major discoveries of oil, Indonesia will become a net importer early in this century. Although the gross output of Indonesia's nine refineries is greater than domestic consumption, refined fuel products for which there is a shortfall in Indonesian production, and crude oil for blending, must still be imported.

In 2000, fuel product imports rose to 90.0 million barrels, at a cost of \$3.0 billion and up sharply from 1999's 79.9 million barrels. This level of fuel product consumption approached 1997's pre-crisis level of 95 million barrels. While the largest import

product category was automotive diesel oil, imports of industrial diesel oil, fuel oil, and High Octane Mogas Component rose significantly and kerosene imports increased by 400 percent in 1999 and 6.9 percent in 2000.

A number of factors converged to cause a shortage of gasoline in Jakarta and elsewhere on Java-Bali during the month of July 2000, including the resurgence of demand described above. The Balongan refinery was shut down from June 22-July 25 due to a breakdown in the main blower unit and associated problems. As a result of an oil spill from the tanker King Fisher on April 1, the Cilacap refinery was unable to receive its normal level of supplies until the spill was fully cleaned up on May 9. These problems were further compounded by an accidental explosion at the Balikpapan refinery on August 7. World market constraints meant that Pertamina had difficulties purchasing additional supplies of gasoline. Various parts of Java also saw spot shortages of gasoline, automotive diesel, and kerosene in mid-2001.

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

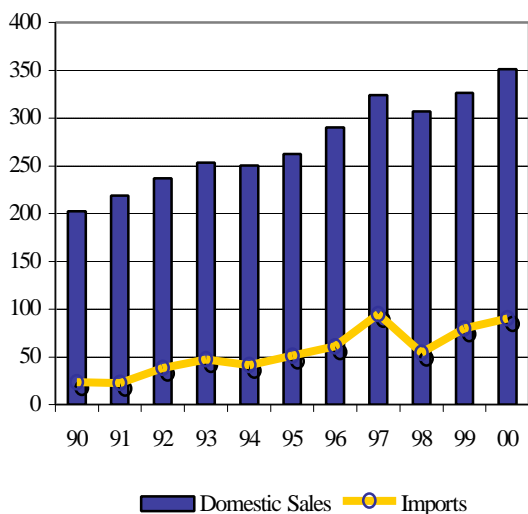
- production from Pertamina refineries;
- time-limited contracts for fuel imports from the Middle East;
- spot product purchases from Singapore; and
- overseas crude processing deals (CPD).

Pertamina resorted to overseas crude processing in late 2000 for the first

time in more than a decade. In its first CPD with Shell Singapore, Pertamina delivered domestic Minas crude and diverted imported Arabian Light to Shell's 436,000 b/d Pulau Bukom refinery in Singapore. Pertamina processed a combined average of about 50,000 b/d of domestic and imported crude from October to December 2000 and then again from January to March 2001. The deal was not subsequently renewed.

Pertamina is now negotiating another CPD with Caltex Singapore with a target fee of \$1.70-\$1.80 per barrel. The figures are based on a calculation of Pertamina's own cost basis at its most economical refinery. Different from the earlier Shell deal, Caltex would procure the crude and charge Pertamina on a crude plus freight plus fee basis.

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



Pricing

Petroleum product prices are government-administered and remain

a matter of great sensitivity in Indonesia. Kerosene, diesel and fuel oil prices remain heavily subsidized and continue to be cross-subsidized by premium gasoline to minimize the impact on lower income groups.

After postponement of an increase originally planned for April 1, the Indonesian Government raised fuel prices by an average of 12 percent on October 1, 2000. (The new prices were still substantially below world prices.) This was the first general fuel price increase since 1993. Pertamina, which has the authority to set prices on premium gasoline, had earlier raised the prices of "Premix," an automotive fuel with additives, and "Super TT," unleaded gasoline, effective April 8. The price of Premix was increased 15.3 percent to Rp 1,500/liter (US 16.6 cents at Rp 9000/US\$) and Super TT by 14.3 percent to Rp 1,600/liter (US 17.8 cents).

The Indonesian government instituted a second, selective price increase on April 1, 2001. According to Presidential Decree no. 45/2001, dated March 29, 2001, fuel consumers would pay different prices based on membership in three groups.

- Group I prices applied to all fuel products consumed by household and small business entities. The prices also applied to gasoline, automotive diesel oil (ADO), industrial diesel oil (IDO), and fuel oil used by local transportation companies and Indonesia's state electricity company PLN. These prices remained unchanged from October 2000, and represent about 77 percent of Indonesia's fuel consumption.

- Group II prices were set at international levels and apply to petroleum production sharing contractors, mining contracts of work (excluding coal), and international shipping lines. Group II fuel consumption is negligible.
- Group III prices applied to the industrial sector, service sector, and the fishing industry (both fishing vessels and barges or tankers carrying fuel for the fishing industry). Prices were set at 50 percent of the international market price and represent 23 percent of Indonesian fuel consumption.

The Indonesian Government instituted a third round of price increases, averaging 30 percent, on June 15, 2001, for Group I consumers. The price increase included a 26.1 percent increase in the price of premium gasoline, 14.3 percent for kerosene, 50 percent for automotive diesel oil (ADO), 82 percent for industrial diesel oil (IDO) and 125 percent for marine fuel oil (FO). With an assumption of domestic fuel consumption at 52.7 million kiloliters, the fuel price hike was projected to cut the government's fuel subsidy from Rp 66.8 trillion to Rp 53.7 trillion. Fuel subsidy costs for the first six months of 2001 had already reached Rp 35.17 trillion.

For budgetary purposes, the GOI assumes an estimated annual crude oil price and an exchange rate for the year. Any deviation in the actual world price of crude oil and/or a change in the rupiah exchange rate vis-à-vis the dollar affects the budget's net oil profit or oil product

subsidy. In its 2002 budget, the GOI calculated a \$22.00/barrel crude oil price and an exchange rate of Rp 9,000 to the U.S. dollar. The budget assumes a domestic oil production level of 1.232 million barrels per day and incorporates a 30-percent average fuel price increase in January. If implemented, the price increase would reduce the Indonesian Government's fuel subsidy burden from Rp 53.7 trillion in 2001 (21 percent of central government spending) to Rp 32.3 trillion (13 percent).

Domestic Fuel Products Prices
(Rp/Liter)

Product	May 5 1998	May 16 1999	Oct 1 2000	June 15* 2001
IDO	500	500	550	1,000
Fuel Oil	350	350	400	900
Kerosene	350	280	350	400
Gasoline	1,200	1,000	1,150	1,450
ADO	600	550	600	900

*)Prices applied to households and small business entities. Prices at Pertamina's pump stations including 10% Value Added Tax

Unleaded Gasoline

In one of his last decisions in October 1999, the outgoing Minister of Mines and Energy signed a ministerial decree stipulating an increase in unleaded gasoline use by 2003. To meet this goal, the government will need to increase unleaded gasoline production capacity. Due to financial difficulties, however, the government delayed the construction of three catalytic reformer units (CRU) needed to produce unleaded gasoline. The originally planned CRU projects, at an estimated cost of \$225.2 million, were to be installed at the Musi refinery (13,500 B/D capacity), the Balikpapan refinery (8,000 B/D) and the Cilacap refinery (20,000 B/D). Despite the delay, the government remains committed to

implementing its "Blue Sky" program to eliminate leaded fuel.

Pertamina and the Indonesian Government took the first step toward this goal with the July 2001 phase-out of leaded gasoline sales in the greater Jakarta area. Pertamina adopted a transitional arrangement, increasing imports of High Octane Mogas Component (HOMC) to substitute for the use of tetraethyl lead used to boost gasoline octane levels. Pertamina also revamped its Blue Sky strategy eventually to expand unleaded gasoline production by dropping the Musi refinery project and focusing on new facilities and upgrades at the Balongan and Cilacap refineries.

U.S. company UOP LLC. will complete the Front End Engineering Design study by mid-December 2001 for the installation of a grassroots naphtha complex at the Balongan refinery. The 52,000 barrels per stream day (BPSD) complex will cost an estimated US \$163 million. Pertamina is also conducting a technical evaluation of two projects for a total estimated cost of US \$82 million at Cilacap: a revamp and upgrade of existing reformers to add processing capacity of 7,000 BPSD of heavy naphtha and installation of a new 21,000 BPSD light naphtha isomerization unit.

Public Refineries

Pertamina foresees requiring the refineries to buy crude oil at market prices and also to sell fuel products to the government at market prices. The newly passed oil and gas law, once fully implemented, will permit foreign investors to produce, import

and distribute oil-based lubricants and thus end Pertamina's monopoly.

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.

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.

Balikpapan

An accidental fire shut down the 20,000 b/d platformer at Pertamina's

Balikpapan refinery in August 2001, necessitating more gasoline imports.

Deregulating Domestic Refining

Prior to the economic crisis, Pertamina estimated that Indonesia would need to double refining capacity from 1.0 million to 2.0 million B/D of oil by 2003 to keep pace with growing domestic demand. 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. Until the issuance of Presidential Decree (PD) No. 31/1997, the major stumbling block to private investment in refining was Pertamina's inability to guarantee a crude oil supply or to commit to purchasing the fuel produced by the refineries.

Under 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 can be set up by Indonesian companies in partnership with foreign firms or with Pertamina;
- Pertamina buys 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 those private refineries is based on the international market price;
- Oil products produced by private refineries which are not needed by Pertamina can be sold by the private companies on the international markets;
- Pertamina will remain the sole distributor of fuel in the domestic market.

Private refineries are permitted to market domestically products, such as lubricants, not otherwise prohibited by Pertamina.

Further Reforms

PD 31 was only one step toward rationalizing Indonesia's petroleum and energy supply industry. Indonesia faces a number of challenges, such as shortages of capital for infrastructure development, in its efforts to upgrade and expand its refining capacity. The new oil and gas law, if implemented well, will further advance the reforms begun with PD 31 by:

- Eliminating Pertamina's monopoly position;
- Ensuring that investors and participants are given equal regulatory and legal treatment;
- Establishing a transparent pricing regime based on market prices;
- Rationalizing, simplifying and streamlining downstream administration;

- Allowing private companies to import oil products; and
- Permitting private companies to construct, own and operate filling stations.

Indonesia remains committed to opening its downstream sector by 2003 under the ASEAN Free Trade Area scheme.

Private Refinery Projects

In 2000, the Directorate General of Oil and Gas recommended that the Investment Coordinating Board (BKPM) issue foreign investment approvals to five oil refinery projects located in Aceh, West Nusa Tenggara, East Java, Riau and South Sulawesi, with total investment of US \$10 billion. The Government expects the 1.1 million B/D capacity will help meet the increasing domestic demand for petroleum-based fuel.

PT Mayhill International Trading & Services (MITS) Ltd. of the U.K and Gehad Dairwan of the United Arab Emirates, will develop the first two projects (the Sumbawa and Sabang oil refineries) at a cost of US \$2.8 billion. The refineries will process Iran Light Crude to produce LPG, naphtha, gasoline and kerosene for export.

HiTech International Group of Saudi Arabia will build a third refinery. The company signed a Heads of Agreement with Pertamina in June 2001 for a US \$2 billion investment in an oil refinery in Tuban, East Java. Scheduled for completion in 2005, the refinery is designed to process 150,000 to 200,000 B/D, of which 50,000 B/D will be Aramco light

crude, to produce mainly gasoline, kerosene and diesel oil.

Saudi Arabian and American investors will construct the fourth and fifth refineries, at a capital investment of US \$6 billion, in Pare-Pare, South Sulawesi and in Rempang Island, Riau. Both refineries will have a processing capacity of 300,000 B/D. The planned facilities will produce LPG, petrochemical, naphtha, gasoline, jet fuel, kerosene, asphalt, diesel fuel and sulfur.

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. According to Indonesian law, 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 implemented any measures to start the project.

Pertamina is the only sanctioned importer of lubricants with greater than 70% mineral oil content, with general importers allowed to bring in products that do not meet this 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

NATURAL GAS

Production

The GOI estimates Indonesian gas reserves at 170.3 trillion standard cubic feet (TSCF) or about 30,314 billion barrels of oil equivalent, of which 94.7 TSCF are proven and 75.6 TSCF are probable. Indonesia has increased its estimated reserves by 25 percent in the past two years from 1998's gas reserves estimate of 158.3 TSCF. Gas reserves are equivalent to three times Indonesia's oil reserves and can supply the country for 50 years at current production rates. Over 71 percent of natural gas reserves are located offshore, with the largest reserves found off Natuna Island (33.3 percent), East Kalimantan (30.2 percent), Irian Jaya (15.1 percent), Aceh (6.8 percent) and South Sumatra (6.4 percent). The discoveries by Arco, now BP, in the Wiriagar and Berau fields located offshore Irian Jaya represent some of Indonesia's most promising recent finds.

Natural gas production declined by 5.4 percent to 2.9 trillion cubic feet (TCF) in 2000 from 3.1 TCF in 1999. Natural gas producer rankings changed dramatically, with sharp increases for some and equally strong declines for others. TotalFinaElf, with its Tunu North and Peciko fields producing, increased its production by 23 percent to 841 billion cubic feet (BCF) so that its

production was nearly double that of ExxonMobil and Vico, the number two and three producers respectively. ExxonMobil, once the largest gas producer in Indonesia, lowered production by nearly 42 percent to 459 BCF from its maturing Arun gas field in North Sumatra. Natural gas production from Vico's Badak field in East Kalimantan also declined slightly by 5.2 percent to 452 BCF. Unocal's production was essentially level at 166 BCF, a 2.1 percent increase from the previous year. TotalFinaElf, Vico, and Unocal are major suppliers of gas to the Bontang LNG plant in East Kalimantan. BP, the largest supplier of domestic gas after it acquired Arco, saw gas output from its fields offshore Java and Madura decline slightly by 1.8 percent to 293 BCF after an 80 percent increase from 1998's 166 BCF to 1999's 298 BCF. Conoco increased its production by 141 percent to 21 BCF, becoming Indonesia's 12th largest natural gas producer.

Roughly 55 percent of Indonesia's natural gas was marketed as LNG or liquefied petroleum gas (LPG) for export, 7.7 percent for electricity, 7.4 percent for fertilizer and 2.2 percent for city gas. Less than six percent was flared.

A total of 18 wildcat and appraisal gas wells were drilled in 2000. Oil companies, however, do not actively explore for

Natural Gas Production by
Major Producers (MMSCF)

Producers	1998	1999	2000	% total
Total Ind.	604,447	684,565	841,419	29.0
Mobil Oil	921,865	794,299	458,929	15.8
Vico	456,954	477,368	452,456	15.6
Arco	165,937	298,327	293,034	10.1
Pertamina	270,330	259,132	285,692	9.8
Unocal	143,764	162,903	166,316	5.7
Gulf Res.	75,076	166,449	165,226	5.7
Others	340,479	225,306	238,230	8.3
Total	2,978,852	3,068,349	2,901,302	100.0

Source: MIGAS

gas in Indonesia, due to disincentives in the pricing for domestic gas. Rather, as the ratio of gas to oil accumulations is high in Indonesia, most gas fields have been discovered during oil exploration.

Piped Gas Exports Begin

Indonesia exported its first piped gas beginning in 2001, and concluded two more international export deals. The pipelines that are laid as part of these deals can further development of the Trans-ASEAN Gas Grid and stimulate further progress on Indonesia's domestic gas transmission system.

West Natuna to Singapore

Pertamina and Singapore's SembCorp Gas Pte Ltd celebrated the first delivery of natural gas on January 15, 2001, exactly one year after signing a gas sales agreement (GSA). The GSA provides for the supply of 325 million standard cubic feet per day (mmscfd) from Indonesia's West Natuna fields to Jurong Island, Singapore for a period of 22 years. SembGas has a take-or-pay requirement while Pertamina is obliged to invest in specified facilities whether or not it is economical to do so. Sales revenue is projected to reach US \$8 billion over the contract term.

The gas will be delivered from three production blocks -- the South Natuna Sea Block B, operated by Conoco Indonesia Inc Ltd; the Kakap Block, operated by Gulf Indonesia Resources; and Natuna Sea Block A, operated by Premier Oil Natuna Sea Limited. The three production sharing contractors (PSC's) and their

non-operating co-venturers act as the West Natuna Group (WNG). WNG invested US \$1.5 billion to construct the West Natuna Transportation System, a 656-kilometer underwater pipeline system with six distinct parts and one of the longest underwater pipelines in the world. The pipeline has a current capacity of 700 million standard cubic feet per day with the capacity to expand to one billion standard cubic feet per day with additional gas compression.

South Sumatra to Singapore

Indonesia and Singapore concluded another gas sales agreement February 12, 2001 in which Pertamina committed to supply natural gas to Gas Supply Pte Ltd., a Singapore Power subsidiary, via a 500-kilometer pipeline that must be operational in 30 months. Under the terms of the 20-year contract, Pertamina will start selling gas to Singapore in mid-2003 at 150 million cubic feet per day (mmcf) stepping up to 350 mmcf by 2009. At current prices, the project will generate US \$9 billion dollars in gas sales revenue over its 20-year life, while sales of associated condensate and liquefied petroleum gas (LPG) could bring in another US \$4 billion. The gas will be supplied from three fields in South Sumatra -- the Jabung Block operated by Devon Energy Jabung Ltd., a subsidiary of Oklahoma-based Devon Energy Corporation, and the Corridor and South Jambi B Blocks, both operated by Gulf Resources. Talisman is partnered with Gulf in the Corridor Block and Devon is partner in the South Jambi B Block, while Amerada Hess and Kerr-McGee are partnered with Devon in the Jabung Block.

Pertamina and Petronas Sign Agreement

Pertamina President Baihaki Hakim signed a contract on March 28, 2001 with his Malaysian counterpart, state oil and gas company Petronas President Mohammad Hassan Marican, to deliver natural gas from the Block B PSC in the West Natuna sea to Malaysia. Under the deal, Pertamina will supply Petronas with a total of 1.5 trillion cubic feet (TCF) of natural gas over a 20-year period, generating approximately US \$4 billion in gas sales revenue for the South Natuna Block B PSC operated by Conoco Indonesia Inc Ltd. Associated condensate, liquefied petroleum gas (LPG), and crude oil will bring another estimated \$4 billion.

A subsea pipeline will deliver gas to the Petronas Carigali Duyong offshore gas facility by August 2002 at a rate of 100 million cubic feet per day, ramping up to a full volume of 250 mmcf/d by 2007. Conoco Indonesia (40 percent), Japanese firm Inpex (35 percent), and Texaco (25 percent) are partnered in the Block B production sharing contract. Conoco and its partners will spend US \$2.5 billion to develop Block B further by constructing major production platforms; a 96-kilometer subsea pipeline; a floating production, storage, and offtake (FPSO) vessel (LPG facility); and a floating storage and offtake vessel (FSO). (Note: South Natuna Block B has another 0.8 TCF of uncommitted gas reserves available for further exploitation in addition to the Petronas and SembCorp sales.)

On August 20, 2001, Conoco awarded engineering, procurement, construction, and installation contracts worth US \$744 million for the FPSO unit and two wellhead platforms for the Belanak field. The \$587 million FPSO contract went to PT Brown and Root Indonesia, and another \$157 million dollar contract to PT J. Ray McDermott's yard in Batam to build the wellhead platforms, pipelines, and oil offloading buoy. McDermott's Batam yard, a Brown and Root subcontractor, will also be fabricating the FPSO topside facilities. When completed, the Belanak field will have two wellhead platforms, 38 wells, a floating storage and offloading unit for LPG, a gas export pipeline, and infield pipelines in addition to the FPSO unit. Belanak has approximately 550 billion cubic feet of gas and 100 million barrels of oil, condensate, and LPG. A company spokesman earlier said Conoco had finished construction of the moveable offshore gas production unit (MOGPU), "Hang Tuah," part of the West Natuna Transportation System that would process and deliver gas to Singapore.

Other Gas Projects and Discoveries

Peciko Gas Field

In April 2000, the Government officially inaugurated the operation of the first stage of the Peciko gas field development project, located offshore East Kalimantan. Developed over ten years with a US\$560 million investment, the Peciko gas field entered the production stage in December 1999. TotalFinaElf Indonesia is now the largest gas supplier for LNG/LPG plants and has

supplanted ExxonMobil as Indonesia's largest gas producer.

Gas reserves at Peciko field combined with even larger reserves at the nearby Tunu field to bring certified proven commercial gas reserves in the Mahakam block to 24.4 TCF, an increase of 19.5 TCF or around 3.5 billion barrels of oil equivalent. TotalFinaElf, with 50 percent interest, is the operator under a PSC in partnership with Inpex of Japan. Production at Peciko started at a rate of around 100 million MMSCF/D in 1999 and exceeded 250 MMSCF/D in 2000. Peciko field increased TotalFinaElf's daily production to more than 840 MMSCF/D in 2000. At that time the company supplied 728 MMSCF/D the Bontang LNG plant's requirements.

Phase IV of TotalFinaElf's Tunu Development Project, which produces and delivers gas to the eighth gas liquefaction train (train "H") at Bontang, was completed in mid-1998.

Tangguh

BP's largest project in Indonesia is Tangguh, a world-class LNG project in Papua with proven natural gas reserves of 14.4 TCF and additional probable reserves of 3.9 TCF. Pertamina announced in July 2001 that it had given the Tangguh marketing lead to BP, a break from a tradition in which Pertamina did the marketing for Indonesia's two other LNG plants. This acknowledged BP's advantages in making a key sale to supply LNG to China. In March 2001, the China National Offshore Oil Corporation (CNOOC) announced that it would enter final negotiations to provide BP with a 30% stake in a

planned US \$600 million LNG receiving terminal in Guangdong province. Completion of the project will enable the Chinese to purchase some 3 million tons of LNG per year starting around 2005. BP is sticking with its schedule to finish the Tangguh LNG plant by the fourth quarter of 2005.

LNG plants have traditionally been developed as a complete package from production to sale, dubbed "trains." BP is breaking new ground with the Tangguh project, expressing a willingness to start construction on the plant even before all of its output has been sold. BP also announced on August 17, 2000 that it had placed an order for construction of two LNG ships with South Korea's Samsung Heavy Industries, with options to purchase a further three vessels. LNG ships in the past have only been built to support a specific LNG plant's output.

BP now has a stake in all three PSC blocks that will supply natural gas to the project: Wiriagar, Berau, and Muturi. BP announced July 6, 2001 that it had bought out the Muturi Block shares of Cairns Ltd, a subsidiary of Malaysia's Genting Berhad, for a lump sum of US \$107 million and a deferred share of future profits from the Tangguh project. BP now has 45% in the Muturi Block with UK-based BG Exploration and Production holding 50% and Nissho Iwai the remaining 5%. BP (80%) and Kanematsu (20%) jointly own Wiriagar. BP owns another 48% stake in Berau, with Nippon Oil (17.1%) Kanematsu (12%), and Mitsubishi (22.9%) owning the rest. (Mitsubishi purchased its shares from Occidental Petroleum in July for US \$480 million. According

to press reports, the purchase increased Mitsubishi's natural gas and crude oil reserves by a third.)

Timor Sea

Tokyo-based Inpex announced on December 8, 2000 that its Abadi-1 exploration well in the Timor Sea Masela Block flowed natural gas and condensate at a rate of 25 million cubic feet per day of natural gas and 260 barrels per day of condensate. This was the first such Indonesian discovery in the Timor Sea. Inpex acquired a 100% stake of the Masela block from Indonesia's state-run Pertamina in November 1998, and started test drilling from October 2000. Inpex said it would continue to evaluate data from the field to determine economic viability of commercial production.

While Inpex is an operator only in the Masela block, it has a substantial stake in Indonesia's oil and gas production. In East Kalimantan, Inpex has 50 percent of the Unocal-operated Attaka oil field and the TotalFinaElf-operated Peciko field, and shares in other fields supplying gas to the Bontang LNG plant. It has a 17.5 percent stake in the South Natuna Sea Block B Project, and holdings in the Offshore Northwest Java block and Offshore Southeast Sumatra block. Inpex is also a shareholder in ZOCA 91-12 and 91-01 in the Timor Gap Zone of Cooperation A through an Australian subsidiary.

Expanding Future Production

Indonesia has significant gas reserves but much of the gas is non-exportable. There is also a geographical mismatch

between location of gas reserves and energy demand location. In addition to geographical constraints, other disincentives to developing Indonesia's gas resources include unattractive fiscal terms, long project lead time, and the lack of incentives to explore and exploit gas reserves. To address these problems, the GOI should follow through on a past commitment to accelerate the time it takes to discover and produce gas by instituting direct buyer/seller negotiations and by reducing red tape. The GOI has also proposed a reduction of its share in gas production sharing contracts.

With more competitive fiscal terms and a market-based pricing system, there would be an incentive to exploit more of Indonesia's natural gas reserves. Four key areas have been identified by the private sector to increase gas development in Indonesia:

- increase incentives to find and produce natural gas;
- promote private investment and ownership, as well as stability and cost recovery for those firms that invest in major gas facilities;
- encourage multi-buyer and multi-seller gas marketing; and
- establish incentives for domestic gas usage.

Domestic Gas Usage

The World Bank and the Asian Development Bank (ADB) have urged Indonesia to adopt a pricing regime more conducive to providing companies with an incentive to find and produce gas. If gas were able to

compete on price with alternative energy forms in the market place, the full value and potential of Indonesia's gas reserves would be realized. Without pricing changes, the domestic gas market is constrained by the economic terms for development, which do not provide exploration incentives, and producers are offered few incentives to develop gas fields too small to support LNG but large enough for domestic gas supplies. A second, major constraint is the absence of a predictable basis for forecasting the future value of gas, such as an indexed price formula. A final constraint has been the subsidy provided for alternative fuels.

Under the current system for determining gas prices, price in supply contracts is reached through negotiations on a field-by-field basis between Pertamina and individual producers after the discovery of the gas field. Prices are fixed for a designated supply for the duration of the contract. Hence, the producer price for gas is different for each PSC. Consumer prices are set on a cost-plus basis.

Domestic Gas Pricing
(Per MMBTU)

I. FUEL	
1. Fertilizer Plant	\$1.00 – 2.00
2. Steel Industry	\$2.00
3. Electricity	\$2.45 - 3.00
4. Cement Industry	\$2.70 - 3.00
5. Paper Industry	\$1.30
6. Refinery	\$1.49
7. Plywood	\$0.97
8. City Gas	Rp 2,500 - 4,150
II. FEEDSTOCK	
1. Fertilizer	\$1.00 – 2.00
2. Steel Industries	\$0.65
3. Methanol Plant	\$1.42 – 2.00

Electricity Projects

Electric power plants, mainly operated by state electricity company Perusahaan Listrik Negara (PLN) Persero, are the largest consumers of domestic gas. A large percentage of industrial users, however, continue to rely on GOI-subsidized diesel fuel for electricity supply. Introduction of a market mechanism for setting prices and allocating supply would encourage greater use of gas, especially for electricity generation.

In September 1997, as part of the effort to reduce budgetary outlays and contain the current account deficit, the GOI released Presidential Decree (PD) No. 39 listing projects being undertaken by or in conjunction with state-owned entities, including state electricity company PLN. The projects were divided into three categories: continued, postponed or under review. Under PD 39, the GOI postponed or placed under review 16 of the 26 independent power producer (IPP) private power projects. Of the ten power projects allowed to continue, only one gas-fired project, PT Energi Sengkang, was allowed to move forward.

PT Energi Sengkang (U.S. El Paso International, Australian Energy Equity and PT Trihasra Sarana Jaya Purnama) constructed a 135 megawatt combined-cycle gas plant in South Sulawesi which is currently generating power into PLN's South Sulawesi grid. Five other combined-cycle gas projects remain postponed -- Palembang Timur in South Sumatra; Pasuruan in East Java; Samarinda in East Kalimantan; Serpong in West Java; and Batakan in East Kalimantan.

In a related development, Arco (now BP) and Pertamina signed a Memorandum of Understanding on June 26, 1999 with PGN to supply 80-115 MMSCF/D of natural gas to PLN's 2X505 MW combined-cycle power plant at Tambak Lorok in Central Java. The gas will be supplied from BP's Kepondang Muriah gas field in Central Java, which has recoverable natural gas reserves of 600 BSCF over the life of the project. BP agreed to supply the gas for 15 years starting in 2003 when PLN will have converted the Tambak Lorok plant from diesel fuel to natural gas. BP will invest US \$400 million in the construction of a 205-kilometer underwater gas transmission pipeline. On July 12, 2001 PLN and Pertamina signed a technical supply agreement for 160 billion SCF/day natural gas from the field.

Integrated Transmission System

The South Sumatra pipeline is part of a state gas company Perusahaan Gas Negara (PGN) plan for an integrated gas transmission pipeline system, known as the Integrated Transmission System (ITS). The ITS is scheduled (in four parts) to eventually link the islands of Sumatra, Java and Kalimantan via a 3,588-kilometer integrated gas pipeline. Reputed to be Southeast Asia's longest, the pipeline is being partially funded by the World Bank, ADB and other institutions. Scheduled to be completed in 2010, PGN's network will flow 2.2 BCFD of natural gas.

PART ONE: GRISSIK/DURI PIPELINE: With a total cost of US \$231.7 million, phase one became operational in October 1998. The

544-kilometer Grissik/Duri gas transmission pipeline transports 310 MMSCF/D of natural gas from Gulf Indonesia Resources' fields in South Sumatra, known as the "Corridor Block." The project will supply Caltex's Duri Steam Flood Project in Central Sumatra for 15 years. Gulf Indonesia Resources is the gas producer, Caltex is the gas buyer and PGN is the owner of the pipeline network. A consortium of five companies led by Mannesmann of Germany completed the construction work. In March 1998, Nova Gas International Ltd. (NGI), a Canadian company, signed a two-year working contract valued at US \$2.26 million with PGN. The contract covers gas pipeline operation and maintenance and related services for the Grissik-Duri gas transmission pipeline.

The Grissik/Duri pipeline project is the first part of a 850-kilometer gas transmission pipeline to link South Sumatra to Singapore. Phase two, which covers the 330-kilometer Sakernan (Jambi) to Singapore leg by way of Batam Island is described at the beginning of this chapter. Phase three, the 150-kilometer looping line from Grissik to Sakernan, is projected to cost close to \$100 million.

PROJECT II: SOUTH SUMATRA-WEST JAVA PIPELINE: The first phase is the 174-kilometer West Java distribution pipeline; the second is the 370-kilometer Pagardewa (South Sumatra) to Cilegon (West Java); and the third is the 180-kilometer pipeline from Gulf Indonesia Resources' contract area in South Sumatra to Pagardewa.

The press reported that Pertamina and PGN signed a heads of agreement on

September 13, 2001 for the supply of natural gas from South Sumatra to the industrial area of West Java, with the first delivery of gas expected in the first quarter of 2005. Under the agreement, Pertamina committed to invest US \$500 million to develop its 22 gas fields in Prabumulih, which have a potential to produce 50 MMCFD from a gas reserve of 3.8 TCF. In return, PGN will construct a 640-kilometer gas pipeline to deliver the gas to consumers in West Java.

PROJECT III: EAST KALIMANTAN-JAVA: The most ambitious of the four projects, the 1,100-kilometer East Kalimantan-Java pipeline includes: phase one, the 600-kilometer Samarinda (Bontang)-Balikpapan-Banjarmasin (South Kalimantan) pipeline; and phase two, the 500-kilometer Banjarmasin-Surabaya (East Java) pipeline. The project will transport about 700 MMSCF/D of natural gas. PGN plans to begin the project in 2005.

PROJECT IV: EAST/WEST JAVA: This project consists of two phases, the 292-kilometer Cirebon (West Java) to Semarang (Central Java) pipeline and the 388-kilometer Semarang to Surabaya link. The project will transport about 700 MMSCF/D of natural gas and is projected for implementation in the 2004-2007 timeframe.

LNG AND LPG

Production and Exports

Indonesia is the world's leading exporter of LNG with about 26.1 percent market share in the world market and over 34.5 percent share in the Asia and Pacific market. In 2000, 55 percent of Indonesia's marketable natural gas was converted into LNG. The remainder was used in the production of LPG, used as fuel for electric power generation, as fuel and feedstock for the petrochemical and fertilizer industries, and consumed or flared in connection with the production of oil. Indonesia signed its first long-term LNG contract in 1973, with the first shipment from Bontang in 1977 and the first shipment from Arun in 1978. Indonesia signed a number of additional LNG contracts between 1973 and 1995. Indonesia's LNG exports are under long-term contracts between Pertamina and its customers.

Currently, Indonesia has the capacity to produce a total of 31.6 million MT of LNG at the Arun plant in North Sumatra and the Badak plant in East Kalimantan. Actual production reached 27.3 million MT in 2000, 8.4 percent lower than the 29.8 million MT produced in 1999. Most of this production is exported. LNG exports decreased by 6.8 percent to 27 million MT in 2000. A major cause of LNG production and export declines was the closure of two of the Arun LNG plant's six original trains in April 2000.

LNG remained a significant earner of foreign exchange, with a 51.5 percent increase in earnings in 2000. LNG exports were valued at \$6.8 billion from \$4.5 billion in 1999. Japan remained Indonesia's top market for LNG, with 67 percent of the total, followed by South Korea (23 percent) and Taiwan (10 percent).

World LNG Trade in 2000

Exporting Country	Billion M3	%
Indonesia	35.7	26.1
Algeria	26.3	19.2
Malaysia	21.0	15.3
Qatar	14.0	10.2
Australia	10.1	7.4
Brunei	8.8	6.4
UAE	6.9	5.0
Nigeria	5.6	4.1
Trinidad	3.5	2.6
Oman	2.5	1.8
USA	1.7	1.2
Libya	0.8	0.6
Total	136.9	100.0

Japanese customers (the largest being Kansai, Chubu, Kyushu and Osaka Gas) have contracted to import 18.2 MMT a year of LNG for the contract period 1999 to 2017. Korea Gas has contracted to import 8.2 MMT/Y and

Taiwan 3.1 MMT/Y over the same period.

The Government announced a priority to develop the Tangguh LNG project in Irian Jaya. (A description of the Tangguh project is in the "Natural Gas" chapter.) Another important LNG project is the potential development of train "T" at the Badak LNG plant in Bontang, East Kalimantan. The Indonesian government maintains that it can find sufficient buyers to make both projects possible, and is taking preliminary steps to develop both. With 6.0 million MT/Y from the new Tangguh LNG facility projected to come on line in 2005, Indonesia is still well positioned as a major LNG supplier for the near future. The Arun facility, however, is expected to produce only 3.0 million MT in 2010.

Arun

ExxonMobil Indonesia was forced to suspend natural gas production for a four-month period – from March to July 2001 -- from its onshore Arun, South Lhoksukon, and Pase fields in North Aceh due to deteriorating security. While ExxonMobil had continued to operate even as clashes between separatist Free Aceh Movement (GAM) forces and the Indonesian military rose over the last two years, company officials said attacks and harassment had been increasingly targeted on ExxonMobil facilities and personnel beginning in January 2001.

The decision to suspend gas production also forced the Arun LNG plant, fertilizer plants PT Pupuk Iskandar Muda and PT ASEAN Fertilizer, and a pulp paper plant facilities which depend on ExxonMobil's natural gas and condensate supplies to suspend operations. ExxonMobil continued to produce 300 million standard cubic feet of gas per day from its North Sumatra Offshore (NSO) field during the suspension, sufficient to maintain minimal safety and electrical systems at its own operations and the associated facilities. Arun resumed LNG shipments with the loading of LNG tanker Wakaba Maru on August 16.

ExxonMobil has extracted about 70 percent of the gas reserves in its Arun gas field and gas deliveries to the four-train Arun LNG plant have started to decline. LNG production from the PT Arun Liquefied Natural Gas plant decreased in 2000 to 6.7 million MT, compared with 11.4 million MT in 1999. Arun is operated

by PT Arun LNG Company, of which 55 percent is owned by Pertamina, 30 percent by ExxonMobil Indonesia and 15 percent by Japan Indonesia LNG Company (JILCO). ExxonMobil is the sole supplier of natural gas to Arun, whose production capacity is now about seven million MT per annum.

Production from the original Arun gas field was supplemented with development of discoveries at three other locations: the South Lhoksukon gas field, located 15 kilometers from Arun; the Pase gas field, located north of Arun; and the North Sumatra Offshore (NSO) gas field. The NSO field, which sits 100 km offshore from the Arun LNG plant in approximately 108 meters of water, is the deepest offshore production platform in Indonesia.

Bontang

The eight-train (A through H) Bontang facility in Badak, East Kalimantan has 21.6 million MT of production capacity.

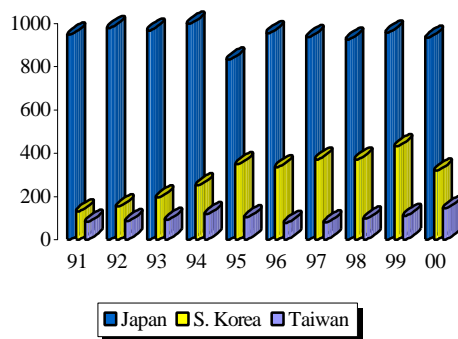
The plant is operated by PT Badak NGL Company, which is 55-percent owned by Pertamina, 20-percent by Vico (which is 50-percent owned by BP), 10-percent by TotalFinaElf, and 15-percent by Japan Indonesia LNG Company (JILCO). Gas is supplied from production sharing arrangements between Pertamina, Unocal, Vico and Total. LNG production from the Bontang facility in 2000 was 20.6 million MT, up from 18.4 million MT in 1999.

In 1995, Pertamina signed two 20-year contracts for Bontang's "H" train with Korea Gas Company and Chinese Petroleum Corporation (Taiwan).

Indonesia advanced plans to build a ninth LNG train (train I) at the Bontang facility with a request in 2001 for technical bids on a Front End Engineering & Design (FEED) package. Among the bidders were Kellogg, Brown, and Root & JGC; Technip & Rekayasa Industri; and Chiyoda and IKPT. The Engineering, Procurement, and Construction (EPC) tender is scheduled to be issued at the end of 2001. The project is expected to be completed in 2004, with a designed capacity of 3.0 million metric tons per year.

Australia, Hong Kong and Singapore. LPG is sold at LPG stations in Jakarta, Bandung and Denpasar.

LNG Exports (Million MMBTU)



Liquid Petroleum Gas

Total LPG production continued to decline in 2000 to 2.09 million MT, from 2.26 million MT in 1999 and 2.35 million MT in 1998. LPG production at five of Pertamina's refineries, however, increased to 767,000 MT in 2000 from 606,000 MT in 1999. The Arun LNG plant reported no LPG production from its LPG extraction plant in 2000, whereas it produced 216,000 MT in 1999. Over 62 percent of LPG production in 2000, valued at just under \$400 million, was exported to major markets: Japan, Taiwan,

PETROCHEMICALS AND FERTILIZERS

Introduction

The Asian economic crisis had an adverse impact on Indonesia's petrochemical industry. Petrochemical producers faced soaring prices for imported materials, shrinking domestic demand, and severe financial problems. According to the GOI, the petrochemical industry currently owes some Rp 10 trillion to the banking sector. As a result, Indonesia's plans to expand petrochemical production have been put on hold.

One company caught with massive debt obligations was Chandra Asri Petrochemical Center (CAPC), a producer of ethylene and propylene. CAPC's costs of producing ethylene are higher than competitors' in South Korea and Thailand. CAPC's debts amounted to US \$463.6 million to the Indonesian Bank Restructuring Agency (IBRA) and US \$723.6 million to private lenders led by Marubeni Cooperation of Japan.

On October 27, 2001, the media reported that the Government and Marubeni had agreed to a debt-for-equity swap arrangement to settle CAPC's debts. Marubeni agreed to convert US \$147 million of its loans into a 24-percent equity share, retreating from an earlier position to convert \$100 million for a 20-percent stake. CAPC must pay the remainder of its debts to Japanese lenders, US \$576.6 million, at an interest rate of 125 basis points above the London Interbank Offer Rate (LIBOR) with payment over 15 years.

CAPC was established by former President Soeharto's second son Bambang Trihatmodjo's Bimantara Group, Prayogo Pangestu of the Barito Group, Henry Pribadi of the Napan Group and Sudwikatmono, a cousin of former President Soeharto. In 1996, CAPC received protection in the form of a 40-percent duty on imports of olefin products, including ethylene and propylene. CAPC sells all of its propylene to Tri Polyta, in which the company's partners have a share.

Tariff Protection Reduced

In December 1998, the Government lowered import tariffs on petrochemical products (ethylene, propylene, styrene, polyethylene, polypropylene, polystyrene and polyvinyl chloride) and their derivatives from the previous rate of 25-35 percent to 10-20 percent effective January 1, 1999. Minister of Finance Decree No. 187 of May 2000 went a step further by reducing import tariffs for 708 items, including upstream and midstream petrochemical products. This decree lowered import duties on selected petrochemical products (ethylene, propylene, styrene, polyethylene, polypropylene, and their derivatives) as of June 1, 2000. Tariffs on ethylene are now zero percent and on propylene, five percent (CAPC produces both petro-chemicals). Tariffs for polyethylene (produced by PT Petrokimia Nusantara Interindo and CAPC) and polypropylene (produced by PT Tri Polyta Indonesia and PT Polyrama Propindo) have been reduced from 20 percent to 5 percent.

This is the fifth time the GOI has changed import tariffs for petrochemical products in the last three

years. The Government also committed to reduce tariffs further in 2003 to comply with the Common Effective Preferential Tariff (CEPT) and ASEAN Free Trade Agreement (AFTA) schemes.

Benzene & Paraxylene

Import Tariffs of Selected Petrochemical Products (%)

Products	Pre Jan 1 1999	Jan 1 1999	Jun 1 2000
Ethylene	25	10	0
Propylene	25	10	5
Polyethylene	35	20	5
Polypropylene	35	20	5
Polystyrene	25	20	10
Polyvinyl Chloride	35	20	10

Benzene and paraxylene are currently produced by Pertamina's Cilacap refinery with production capacity of 123 thousand MT/Y and 270 thousand MT/Y respectively. Production rates of the two products are insufficient to meet domestic demand. According to the Department of Industry and Trade, domestic demand of benzene and paraxylene will increase to 125 thousand MT and 2.2 million MT, respectively, in 2003. After a substantial increase in 1999, imports of paraxylene mainly for the purified terephthalic acid (PTA) industry declined slightly to 934.3 thousand MT valued US\$438.6 million in 2000 from 984.3 thousand MT valued at US \$338 million in 1999. Affected by a sharp increase in domestic consumption, benzene imports rose to 274.6 thousand MT in 2000 from 247.2 thousand MT in 1999.

PTA

The growth of Indonesia's textile industry and the demand for polyester raw materials provided the stimulus for Pertamina and private investors to enter into the production of purified terephthalic acid (PTA). Since 1998, five PTA plants have been in operation -- Pertamina Plaju Aromatic, Bakrie Kazei PTA, Amoco Mitsui PTA Indonesia, Polysindo Eka Perkasa and Polyprima Karya Reksa, with a combined capacity of 1.8 MMT/Y. The bulk of production is sold to Indonesian polyester makers. In 2000, domestic demand for PTA increased to 980,000 MT from 889,000 MT in 1999 but exports declined significantly to 244,800 MT valued at US \$117.5 million from 304,700 MT and US \$116 million in 1999. China, Thailand, Hong Kong and Pakistan are the largest export markets for Indonesian PTA.

Three Japanese partners led by Mitsubishi Kasei Corp. own Bakrie Kasei, the largest PTA producer in Indonesia with a total capacity of 500 thousand MT/Y. (PT Bakrie Brothers sold its 20 percent share in the company to its former partners in late 2000.) Bakrie Kasei's first PTA production unit commenced operation in 1994 and the second unit in 1996.

Amoco-Mitsui PTA Indonesia, a joint venture between Amoco Chemical (50 percent), now incorporated into BP, Mitsui Petrochemical Industries (45 percent) and Mitsui Company (5 percent), commissioned a PTA factory in Merak, West Java, in February 1998, with an annual production capacity of 350 thousand MT/Y.

PT Polysindo Eka Perkasa of the Texmaco Group started PTA plant operation in April 1997 with capacity of 360

thousand MT/Y. PT Polyprima Karyareksa of the Napan group commenced commercial production in 1997 with annual capacity of 285 thousand MT/Y.

In 1998/99, the Capital Investment Coordinating Board (BKPM) licensed another six PTA projects with total projected capacity of 1.5 MMT and total investment of \$1.2 billion. Most of these projects are on hold because of financing difficulties.

Polypropylene

Polypropylene exports continued to decline in 2000 to 36,600 MT valued at US \$21.8 million from 41,300 MT valued at \$21 million in 1999. With a significant increase of domestic demand, from 450,000 MT in 1999 to 647,800 MT in 2000, Indonesia imported 189,200 MT of the product at a cost of US \$105.8 million in 2000. Polypropylene imports were up sharply from 54,400 MT at US \$42.8 million in 1999. Three plants, with a total production capacity of 600 thousand MT/Y, produce polypropylene, which is made from propylene. They are Pertamina's plant in Plaju, South Sumatra, with production capacity of 60,000 MT/Y; Tri Polyta's plant in Cilegon, West Java, with a capacity of 360,000 MT/Y; and Polytama Propindo, located near Pertamina's Balongan refinery in West Java, with a capacity of 180,000 MT/Y.

Majority-owned by the Tirtamas Group, the Polytama Propindo plant had plans to increase production and

develop into a midstream petrochemical project. These plans are still on hold.

Ethylene

Chandra Asri Petrochemical Center (CAPC), the only ethylene producer in Indonesia, produced 420,000 MT of ethylene in 2000, or 81 percent of its designed capacity. Statistics released by the Department of Industry and Trade indicated that domestic demand of ethylene increased to 856,000 MT in 2000 from 838,700 MT in 1999 because most downstream industries were increasing production. Ethylene imports rose to 54,900 MT valued at US \$55.8 million in 2000 from 41,900 MT valued at US \$39.8million.

Polyethylene

Indonesia's first polyethylene plant, PT PENI in Merak, West Java, came on stream in 1993, with production capacity of 250,000 MT. PT PENI is majority owned and operationally managed by BP Chemicals. In August 1998, the company completed its expansion project and increased its annual capacity to 450,000 MT. In 1999, CAPC increased the country's total polyethylene production capacity to 750,000 MT. Domestic demand for polyethylene continued to increase in 2000 to 501,000 MT from 442,000 MT in 1999 from 361,000 MT/Y in 1998. Indonesia exported 135,500 MT valued at US \$77.6 million and imported 145,300 MT valued at US \$113.3 million in 2000.

Methanol

PT Kaltim Methanol Industry in Bontang, East Kalimantan, which

came on stream in 1998, brought Indonesian methanol production capacity to 990,000 MT/Y. Prior to 1998, methanol was produced only by Pertamina's Bunyu Refinery, now owned by Medco Energi. PT Kaltim Methanol has plans to be a major methanol supplier to Asia. The first shipment of methanol to Japan was in March 1998. PT Kaltim, a subsidiary of Humpuss Group, has production capacity of 660,000 MT. In the first half of 2001, Humpuss offered its majority share in the plant to Nissho Iwai and Daicel Corporation of Japan.

Humpuss Group, controlled by former President Soeharto's son Hutomo (Tommy) Mandala Putra, currently holds a 70-percent share in PT Kaltim, followed by Nissho Iwai with 25 percent and Daicel Chemical Industries with 5 percent. Nissho Iwai is scheduled to take the bulk of the methanol for direct export to Japan, South Korea, Taiwan and other Asian countries. The natural gas feedstock comes from nearby gas fields operated by Pertamina, Total, Unocal and Vico.

In April 1997, operation of the Bunyu plant was turned over to PT Medco, which supplies additional natural gas to the plant from its gas field in Tarakan Island by an undersea pipeline. Medco aimed to restore plant productive capacity to 330,000 MT/Y from less than 200,000 MT/Y when Medco took over its operation.

In 2000, due to an increase of domestic consumption, methanol exports declined to 530,200 MT valued at US \$60.3 million from 694,100 MT valued at \$51 million in 1999.

The Projects

TUBAN PETROCHEMICAL COMPLEX: Construction of the \$2.3 billion Tuban Petrochemical Complex was suspended in December 1997 due to lack of financing. The project is controlled by Trans Pacific Petrochemical Indotama (TPPI), a Singapore-based company, headed by Indonesian businessman Hashim Djojohadikusumo. Currently, TPPI has a 60-percent share, Tuban Petrochemical Pte. Ltd 20-percent, Japan's Nissho Iwai and Itochu Corp 5-percent each, and Tirtamas Majutama, also controlled by Hashim, 10-percent. The complex would have the capacity to produce 700,000 MT/Y of ethylene; 500,000 MT/Y of paraxylene; and 300,000 MT/Y of benzene.

TPPI requires an additional US \$475 million to revive a naphtha cracker and aromatics project that was mothballed midway through construction. TPPI offers Pertamina to participate in the project. If the project is revived, it would have a short lead time compared to other expansion projects planned in Asia. It would likely affect the market relatively quickly once it is confirmed to be back on track.

OTHER PROJECTS: In 1996, the Capital Investment Coordinating Board (BKPM) approved several aromatic center new or expansion projects to meet domestic demand and reduce reliance on imports: PT Kresna Aromatic Persada; PT Nilaprima Aditama; PT Bakrie Petrochemical; PT Humpuss Aromatic; and an expansion program for PT Chandra Asri. All of these projects are currently on hold.

PT KRESNA AROMATIC PERSADA is a joint venture between Indonesian PT Kresna Tara Utama and Japanese Tomen. The plant was scheduled to be located in Cilacap, Central Java and to produce benzene, paraxylene, heavy aromatics and fuel products.

PT NILSPRIMA ADITAMA, planned for Serang, West Java, was to produce benzene and paraxylene. The project is jointly owned by PT Taniaraya Dutabuana (70 percent) and PT Trimitra Suburperdana (30 percent).

PT BAKRIE PETROCHEMICAL, also in Serang, West Java, was to produce paraxylene. Over 80 percent of the aromatic center's paraxylene was to be supplied to PT Kansei Bakrie, a Bakrie company producing PTA, with the rest for the export market.

PT HUMPUSS AROMATIC, located in Lhokseumawe in North Sumatra near the Arun gas fields, was scheduled to produce benzene and paraxylene, but currently only produces naphtha, kerosene, diesel oil and LPG. An indefinite delay has been imposed on the plant's plans for a paraxylene facility in Arun.

PT CHANDRA ASRI PETROCHEMICAL CENTER (CAPC), located in Cilegon, Java, began production in 1995 and produces a full range of olefins and aromatics. The planned expansion would add polybutene, MBTE, butane and butadiene to its product line.

Fertilizers

Given Indonesia's abundant supply of natural gas and strong domestic and export demand for fertilizer in Asia, the fertilizer industry presents a potential area for growth, provided the GOI loosens its tight control over the industry. Installed production capacity at Indonesia's 12 fertilizer plants operated by six companies (five state-owned companies and one ASEAN joint venture) is 7.0 million MT of urea and 4.6 million MT of ammonia per year.

In 2000, urea and ammonia production increased slightly to 6.3 million MT and 4.3 million from 6.0 million MT and 4.2 million MT respectively in 1999. Total fertilizer exports declined slightly to 2.0 million MT from 2.1 million MT in 1999, with main destinations being Vietnam, Taiwan, the Philippines, Thailand, Malaysia and Bangladesh. Designated a strategic commodity, the government directs state-owned fertilizer companies to fulfill domestic demand first. The remainder can be exported.

**Fertilizer Production and Exports
In 1000 MT**

	1999	2000
Urea		
Pupuk Sriwijaya	1,997	1,924
Pupuk Kaltim	1,904	2,277
Pupuk Kujang	560	580
Asean Fertilizer	685	586
PIM	551	664
Petrokimia Gresik	271	341
Total	5,968	6,332
	4,198	4,339
	2,052	1,910.6
- Value (\$million)	184.8	204.4

Source: Department of Industry and Trade

This year, fertilizer production is expected to decline because two large fertilizer plants in Aceh (ASEAN Aceh

Fertilizer, AAF, and Pupuk Iskandar Muda, PIM) suspended operations for over five months. The suspension, caused by a loss of feed stock gas from the ExxonMobil gas fields, caused a total loss of US \$75 million for the two plants. Fertilizer exports are also expected to decline in order to guarantee domestic supply. AAF announced force majeure status to overseas buyers of ammonia and urea. After ExxonMobil resumed operations in August, the Government instructed Pertamina and Exxon to prioritize gas supply to the plants.

Domestic demand for fertilizers continues to increase at average of 2.5 percent per year. The government estimates domestic demand will reach 6 million MT for urea and 1.3 million MT for phosphate by 2005. The largest Indonesian fertilizer import is potassium chloride, which is used as an additive to enhance performance of other fertilizers. This particular additive is mainly imported for use in plantations that produce soybeans, tobacco and tea. In 2000, imports of potassium chloride decline to 359,500 MT from 530,000 MT in 1999.

The fertilizer industry utilizes about 210 BSCF of natural gas per year and purchases gas in U.S. dollars at the government's subsidized price of US\$1.3/MMBTU. (The government reduced the natural gas price from a range of US \$1-2/MMBTU as a development incentive to the fertilizer industry.) Recently, a number of plants have had difficulty paying their dollar-denominated gas bills to Pertamina. Fertilizer is sold to farmers in rupiah at government-administered prices.

The Indonesian Government decided to resume five delayed fertilizer projects affected by the financial crisis due to the anticipated increase of domestic demand. The five projects are the \$310 million Pupuk Iskandar Muda (PIM) II; \$304.6 million Kujang IB; \$359.7 million Pupuk Kaltim IV; \$26.2 million Petrokimia Gresik NPK fertilizer plant; and \$34 million ASEAN Aceh Fertilizer's hydrogen peroxide plant.

The PIM II project, which was originally scheduled for completion in 2001, is now slated for commercial operation in the second half of 2002. The plant will produce 570,000 MT of urea and 366,000 MT of ammonia per year with 50 percent of production exported.

In March 2001, the contract for construction of the 570,000 MT/year capacity Kujang IB was signed by Toyo Engineering. The project is expected to be operational in 2004 and designed to replace the current plant, which has been in service for 22 years.

Private developer PT Kaltim Parna Industry (KPI) has officially started the construction of a US \$240 million ammonia plant in East Kalimantan. KPI is a joint venture between two Japanese companies (Mitsubishi 55 percent and Asahi Chemical Industry -- 10 percent) and two Indonesian companies (PT Parna Raja -- 25 percent and PT Pupuk Kaltim -- 10 percent). The project, which had been postponed for three years due to the economic crisis, is scheduled for completion in 2002, with an annual capacity of 500,000 MT/year. The project will consume 55 MMSCF/D from three gas fields operated by Total, Unocal and Vico. KPI signed a

20-year gas purchase agreement with Pertamina in July 1999.

PT ASEAN ACEH FERTILIZER:
The ASEAN-sponsored urea fertilizer plant is located near the Arun gas fields at Lhokseumawe in North Sumatra and is 60-percent owned by Indonesia, 13-percent by Malaysia, 13-percent by the Philippines, 13-percent by Thailand, and 1-percent by Singapore. The plant produced 586,000 MT of urea and 405,000 MT of ammonia in 2000.