

# Indonesia's Refining Growth

Indonesia is the only Southeast Asian member of OPEC, although the country became a slight net oil importer in 2004. Indonesia had 97.8 trillion cubic feet (Tcf) of proven natural gas reserves as of January 2007. Indonesia is the 10<sup>th</sup> largest holder of proven natural gas reserves in the world and the single largest in the Asia-Pacific region.

## Oil and Gas Industry

<b>Organization</b>	Mixed. State-owned PT Pertamina maintains an important role in the oil and gas sectors, while production is dominated by international oil majors.
<b>Foreign Company Involvement</b>	BP, Chevron, CNOOC, ConocoPhillips, ExxonMobil, Inpex, KG, Mitsubishi, Nippon Oil, PetroChina, Petronas, Total, Vico
<b>Major Oil Fields</b>	Duri, Minas, Belida, Ardjuna, Arun, KG/KRA, Widuri, Nilam, Attaka
<b>Major Natural Gas Fields</b>	Sumatra: Arun, Alur Siwah, Kuala Langsa, Musi, South Lho Sukon, Wampu. East Kalimantan: Attaka, Badak, Bekapai, Handil, Mutiara, Nilam, Sembelah, Tunu. Natuna Sea: Natuna. Java: Pagerungan, Terang/Sirasun. Irian Jaya: Tangguh
<b>Major Refineries (capacity, bbl/d)</b>	Cilicap, Central Java (348,000); Balikpapan, Kalimantan (240,920); Balongan (125,000); Dumai, Central Sumatra (114,000); Musi, South Sumatra (109,155).

\* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data. \*\*GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

Indonesia has the largest population in Southeast Asia and the fourth largest population in the world (behind China, India, and the United States). In 1962, Indonesia joined the Organization of the Petroleum Exporting



Countries (OPEC) and became a net importer of oil in 2004.

## DownStream/Refining

As of January 2007, Indonesia had 992,745 bbl/d of refining capacity at 8 facilities, all of which are operated by PT Pertamina. The largest refineries are the 348,000-bbl/d Cilicap facility in Central Java, the 241,000-bbl/d Balikpapan plant in Kalimantan, and the 125,000-bbl/d Balongan refinery in West Java. PT Pertamina announced in August 2006 of its plans to spend \$10 to \$11 billion on boosting Indonesia's downstream sector over the next 5 years. As part of this effort, there have been various proposals to upgrade existing refineries or build new facilities, as well as to expand the country's transmission, distribution, and marketing network. However, the only project that has moved forward significantly is the planned refinery at Pare-Pare. Local firm PT Intanjaya Agromegah Abadi, with financial backing from Saudi investors and U.S. based Inter Global Technolo-

gies, began construction on the facility in February 2006, which is slated to be Indonesia's first privately-owned refinery. The facility will have a nameplate capacity of 300,000 bbl/d and is expected to be completed in 2010.

Various other refinery projects have also been proposed. In December 2006, PT Pertamina and China's Sinopec completed a feasibility study of a proposed 200,000-bbl/d refinery in Tuban, East Java. While a MOU was reached between the two companies in 2005, there are no firm plans to begin construction on the proposed project. PT Elnusa, a subsidiary of PT Pertamina, has studied the possibility of building a 300,000-bbl/d refinery in a consortium with Venezuela's Petroleos de Venezuela SA (PdVSA), Iran's National Iranian Oil Refinery and Distribution Company (NIORDC), and Japanese investors.

However, since 2007, many developments have taken place in the downstream sector. Earlier this year it was announced that PT Pertamina, aiming to reduce fuel imports by boosting domestic supply, plans to construct two new refineries and upgrade an existing facility.

A Pertamina spokesperson stated that two of the planned refineries would be new: one in Bojonegara, Banten, and another in Tuban, East Java. The third project, meanwhile, will be an expansion of the existing refinery at Balongan in West Java.

The total capacity of the three planned refineries will be 400,000 bbl/d, while it was mentioned that

Pertamina is looking for partners for oil supplies as well as for financing of the new facilities. The decision to construct new refineries comes as Indonesia's domestic demand has far outstripped Pertamina's production.

In 2008, Pertamina produced 227.2 million bbl of fuels and imported 142.1 million bbl. In 2007, Pertamina produced 226.1 million bbl of fuels and imported 138.7 million bbl.

A state official commented on the country's refining capabilities earlier this year by stating that premium gasoline consumption under the PSO this year had been set at 123.856 million bbl, while the refineries could produce only 68.35 million bbl, leaving Pertamina to import 55.506 million bbl.

In a bid to boost the country's production, a state official said that Royal Dutch Shell PLC could improve its chances of participating in the Natuna D-Alpha Block by transferring its oil refining operations to Indonesia from Singapore. This is the first time that Indonesia has used its upstream assets as a bargaining chip to bolster its downstream industry. This clearly exemplifies the urgency in the government's attitude towards its refining capabilities.

In the last 12 to 18 months Pertamina has made great headway in increasing the nation's refining capacity. Key developments are listed below:

1. Pertamina's collaboration with Kuwaiti investors for the construction of an oil refinery (July 2008)
2. Pertamina's decision to build



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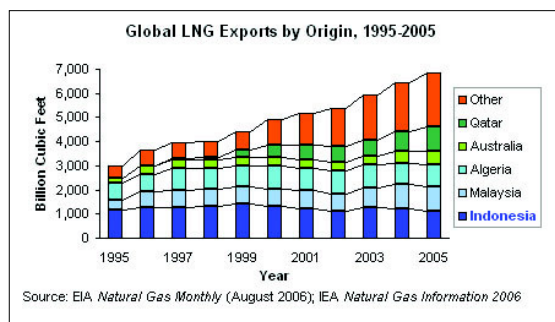
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- an oil refinery with Wahana (November 2007)
3. Japanese investors' decision to invest US\$6.6 billion in oil refinery and LNG projects in Indonesia (March 2008)
  4. Expedition of the construction of the Senoro LNG plant (January 2008)
  5. Cilacap refinery upgrade (ongoing)
  6. Pertamina's Selayar Island oil refinery (January 2008)
  7. PGN LNG receiving terminal

### Liquefied Natural Gas

Media reports suggest that Indonesia was surpassed by Qatar in 2006 as the single largest exporter of LNG.

Indonesia is a leading LNG exporter. Indonesia was the world's largest exporter of LNG in 2005, although some reports suggest that the country was surpassed by Qatar sometime in 2006. During 2005, Indonesia exported 23 million tons (MMt, or 1,123 Bcf) of LNG, or about 16 percent of the world total.



Indonesia produces LNG from two terminals: the Bontang facility in Badak, East Kalimantan and the Arun plant in North Sumatra. The Bontang LNG terminal was Indonesia's first to begin commercial operations, shipping its first LNG exports in 1977. The eight-train Bontang plant is the largest

LNG facility in the world, with a capacity to produce 21.6 MMt/y (1.1 Tcf/y). However, production has stood below full capacity in recent years, with 2004 output estimated at 19.6 MMt (955 Bcf) of LNG. The Bontang terminal is operated by PT Badak NGL Company, 55% owned by PT Pertamina, 20% by Vico (a BP-Eni joint venture), 10% by Total and 15% by the Japan Indonesia LNG Company (JILCO). Recently, the Bontang plant faced underproduction for a variety of reasons, which forced the Indonesian government to divert some natural gas supplies to domestic fertilizer companies. In 2005, Bontang LNG supply contracts were renegotiated so that more of the project's output could supply domestic customers.

The Arun LNG facility is operated by PT Arun Natural Gas Liquefaction Company, which is 55% owned by PT Pertamina, 30% by ExxonMobil and 15% by JILCO. Arun is a six-train facility with a total capacity to produce more than 10 MMt/y (487 Bcf/y) of LNG, although in 2004 production stood at 6.4 MMt (312 Bcf). ExxonMobil supplies LNG for the Arun plant from its nearby Aceh fields, although the company estimates that it has depleted 90%

of the recoverable reserves. This shortfall also contributed to the government's effort to redirect some natural gas production designated for export to domestic users. In 2005, this forced the Indonesian government to turn to spot LNG markets to meet its contractual obligations to foreign buyers.

### Tangguh LNG Project

One project that holds promise for Indonesia's future in worldwide LNG markets is the BP-led Tangguh project in Papua province. The Tangguh fields contain 14.4 Tcf of proven natural gas reserves found onshore and offshore the Wiriagar and Berau blocks. The project received final approval from the government of Indonesia in March 2005, and is led by its operator BP (37.16 percent stake) and a consortium including the China National Offshore Oil Corporation (CNOOC, 16.96 percent), Mitsubishi (16.3 percent), Nippon Oil (12.23 percent), KG (10 percent), and LNG Japan (7.35 percent). The first LNG train is set to begin production in 2007, with the second due for completion by 2009. The project will initially supply 4.2 MMt/y (205 Bcf/y) of LNG, eventually reaching 8.4 MMt/y (410 Bcf/y) when both trains are producing. According to BP, the Tangguh LNG facility has already secured four long-term LNG sales contracts, including: the Fujian LNG project in China, K-Power in Korea, POSCO in Korea, and Sempra Energy in Mexico. The project is now nearing total completion with cargoes set to be transported.

Despite having huge reserves of natural gas, Indonesia remains a net importer due to its low refining capabilities. This has clearly been highlighted and the nation's powers-that-be have responded in a positive fashion through the construction of various refining infrastructure as well as by upgrading present refineries. With these downstream investments Indonesia's bullish move to reduce its energy deficit is made clear. **HA**