The Mineral Industry of Brunei

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Brunei is a small country on the northwestern coast of Borneo Island in Southeast Asia. The country's land area is about 5,270 square kilometers, and its population was about 358,000 in 2003. Brunei's per capita income was among the highest in Asia and the Pacific region because of its rich resources of petroleum and natural gas. Brunei's per capita gross domestic product (GDP) based on purchasing power parity was estimated to be $15,407 (International Monetary Fund, 2004a§[1]). The country's proven reserves of crude petroleum and natural gas were estimated to be 1.35 billion barrels and 390.77 billion cubic meters, respectively (Oil & Gas Journal, 2003a). In addition to petroleum and natural gas, Brunei also has small resources of carbonate rocks, coal, kaolin, sand and gravel, and silica sand (Quazi, 1996, p. 1-7). In the region, Brunei ranked fourth in the production of liquefied natural gas (LNG), seventh in the production of crude petroleum, and eighth in the production of natural gas in 2003 (Oil & Gas Journal, 2003a; Alexander's Gas & Oil Connections, 2003§).

In 2003, Brunei's real GDP grew by 3.6% compared with 3.2% in 2002 owing to the increased output of oil and gas and higher Government development spending. The country's GDP, in current prices, was estimated to be $4.76 billion compared with $4.28 billion in 2002 (International Monetary Fund, 2004a§). In 2002 (the last year for which data were available), the output of oil and gas accounted for 37% of the GDP; exports of oil and gas, which were estimated to be $3.46 billion, accounted for 89% of Brunei's total export earnings ($3.87 billion); and the oil and gas industry contributed 87% of the Government's revenues (International Monetary Fund, 2004b§).

The 6 key members (Brunei, Indonesia, Malaysia, the Philippines, Singapore, and Thailand) of the 10-member Association of Southeast Asian Nations (ASEAN) agreed to cap tariffs on imports from within ASEAN at 5% effective January 1, 2003. These six countries, which were the first signatories to the ASEAN Free Trade Area (AFTA) agreement, had substantially achieved the aim of reducing tariffs in the region to 5% or less on almost all products under the Common Preferential Tariff (CEPT) system (BruDirect.com, 2003d§).

In November, Brunei Shell Petroleum Company Sdn. Bhd. (BSP), which was Brunei's major producer of oil and natural gas, shipped surplus lead compound and sludge from two tetra-ethyl-lead storage vessels that had been demolished at the Seria Oil Refinery to the United Kingdom. The surplus lead compound and sludge had been classified as hazardous waste that needed to be properly recovered, treated, and disposed of in a safe and environmentally approved manner. BSP's action was in response to the call made by the Government for a lead-free Brunei and supported a worldwide drive toward a lead-free environment. It was also in full compliance with the Basel Convention, which is a major international environmental protection treaty that regulates the transportation and movement of hazardous waste (BruDirect.com, 2003c§).

In September, the Brunei Economic Development Board (BEDB) and Alcoa Inc. of the United States signed a memorandum of understanding (MOU) to undertake a feasibility study on the establishment of an aluminum smelter and its associated infrastructure in Brunei. According to the BEDB, development of downstream and manufacturing industries, power supply, and infrastructure in the major industrial site of Sungai Liang was an integral part of the plans to diversify Brunei's oil- and gas-based economy and to create jobs and opportunities for its people. As a necessary condition of the study, an assessment of the environmental impact of the aluminum smelter would need to be completed before a final investment decision could be made. According to the MOU, Alcoa was to carry out the study in two phases during a 2-year period that was to begin in the fourth quarter of 2003. If the project were approved, then a smelter to produce primary aluminum would be built, which would involve foreign investment of up to $1.5 billion and would create about 1,000 jobs (BruDirect.com, 2003g§).

Brunei's mineral industry consisted of a small sector of industrial minerals and a larger sector of oil and gas. The industrial minerals sector comprised more than 20 small privately owned companies that engaged in the production and marketing of cement, construction aggregates, and sand and gravel. The cement company operated a 500,000-metric-ton-per-year (t/yr) cement-grinding plant near Muara. The plant used imported clinker and gypsum to produce portland cement and such specialty cements as oil well cement and slag cement. Cement production averaged 230,000 t/yr, or about 50% of its capacity, in the past 4 years.

The oil and gas sector comprised the following operating companies: Brunei Shell Companies, Shell New Zealand Ltd., and Total S.A. (formerly TotalFinaElf S.A.). Brunei Shell consisted of BSP, Brunei Shell Marketing Sdn. Bhd. (BSM), Brunei LNG Sdn. Bhd. (BLNG), and Brunei Shell Tankers Sdn. Bhd. (BST). BSP conducted oil and gas exploration, produced and refined crude petroleum, produced and processed natural gas, marketed crude petroleum, and traded natural gas, crude petroleum, and refined petroleum products. BSM marketed refined petroleum and petrochemical products in the domestic market. BLNG processed and marketed LNG in the overseas markets. BST transported LNG to overseas markets. Total and Shell New Zealand conducted oil and gas exploration and produced natural gas and natural gas liquid (condensate).

In 2003, a consortium of Total (60%), BHP Billiton Ltd. (25%), and Amerada Hess Corp. (15%) and a consortium of Royal Dutch/Shell Petroleum Co. (50%), ConocoPhillips Company (25%), and Mitsubishi Corp. (25%), which had been awarded offshore deepwater blocks J and K, respectively, within the Brunei's Exclusive Economic Zone (EEZ) offshore Brunei by Brunei National Petroleum Company (PetroleumBRUNEI)

[1]References that include a section mark (§) are found in the Internet References Cited section.

in early 2002, began exploring for oil and gas (Petroleum Economist, 2003).

In January 2003, Total reported that it had made a significant natural gas and condensate discovery in its joint-venture block B, which was located about 50 kilometers offshore north of the nation's capital Bandar Seri Begawan. The joint-venture block was owned by Total (37.5%), Royal Dutch/Shell (35%), and local partners (27.5%) (BruDirect.com, 2003h§).

In June, Total announced that it had suspended exploration work in its joint-venture block J in May because of a territorial dispute between Brunei and Malaysia. The consortium that was led by Royal Dutch/Shell reportedly also was to put exploration work in its joint-venture block K on hold until the two countries' overlapping claims were resolved (BruDirect.com, 2003a§, e§).

During 2003, Brunei and Malaysia were in a maritime border dispute that began soon after Malaysia's state-owned Petroliam Nasional Bhd. signed a production-sharing contract with Murphy Oil Corp. for oil exploration blocks L and M off Sabah, Malaysia; these blocks overlapped blocks J and K. Brunei and Malaysia began discussions in mid-2003 to resolve the border issue. According to a local press report, the United Nations and the International Courts had considered asking the members of the ASEAN to act as a peace-keeping force if the conflict worsened (BruDirect.com, 2003e§, f§, i§). By yearend, the Brunei and Malaysia maritime border dispute remained unresolved.

Output of crude petroleum, which included condensate, averaged about 208,000 barrels per day. Output of natural gas was estimated to be 32.9 million cubic meters per day. In 2003, BSP produced crude petroleum, natural gas, and natural gas liquid (condensate) from 772 producing wells in 8 offshore fields (Ampa Southwest, Champion, Champion West, Enggang, Fairley, Fairley-Baram, Iron Duke, and Magpie) and two onshore fields (Rasau and Seria-Tali). Total and Shell New Zealand jointly produced natural gas and natural gas liquid from seven producing wells in the offshore Maharaja Lela Field (Oil & Gas Journal, 2003b). In 2002 (the last year for which data were available), crude petroleum was exported to Thailand (27.3%), Australia (17.3%), the Republic of Korea (16.1%), China (12.5%), Japan (12.2%), and other countries that included Indonesia, New Zealand, the Philippines, Singapore, and the United States (Petroleum Unit, 2003§).

Of the natural gas produced in 2002 (the last year for which data were available), 85% was consumed by the LNG plants for LNG production; 9%, by the domestic powerplants for electricity generation; and 6%, by the oil and gas industry. Production of LNG by BLNG at the Lumut plant in Seria was about 6.8 Mt/yr, or about 10.2 billion cubic meters per year. The production capacity of the LNG plant was 7.2 Mt/yr. The LNG plant comprised five trains, each of which was capable of processing 5.3 million cubic meters per day of gas, and three storage tanks that had a total capacity of 176,000 cubic meters. In February 2003, BLNG signed a contract with Kellogg Brown & Root International Inc. (a subsidiary of Halliburton Co. of the United States) to replace the old units with new Main Heat Cryogenic Exchange (MCHE) units. MCHE units are the largest and most sophisticated equipment in the LNG train for liquefying natural gas. BLNG placed an order for four new 100-metric-ton spiral-wound aluminum MCHE units from Linde AG of Germany in March 2002 (BruDirect.com, 2003b§).

In 2002 (the last year for which data were available), most of the LNG was exported to Japan (85.5%) and the Republic of Korea (11.6%). The major customers of the long-term contracts were Osaka Gas Co. Ltd., Tokyo Electric Power Co. Ltd., and Tokyo Gas Co. Ltd. of Japan (1993-2013) and Korea Gas Corp. of the Republic of Korea (1997-2013). In 2002, Brunei made its first spot delivery of LNG in small quantities to Spain and the United States (Poten.com, 2003§).

Brunei's economy and the mining sector will continue to be dominated by the oil and gas industry during the next 4 to 5 years. Because of the conflicts in the Middle East, the oil price in the world market is expected to increase. As a result, the export earnings from oil and gas are expected to rise, and the economy is expected to continue growing during the next 2 years. Brunei's GDP is forecast to grow by 2.0% in 2004 and 1.6% in 2005 (International Monetary Fund, 2004a§).

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Major Source of Information

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TABLE 1
BRUNEI: PRODUCTION OF MINERAL COMMODITIES[1]

Commodity[2]		1999	2000	2001	2002	2003
Cement	thousand metric tons	208	232	227	241 r	235
Gas, natural:						
Gross	million cubic meters	11,206	11,627	11,687	11,790 r	12,702
Marketed	do.	11,627	10,751	10,967	11,120 r	12,024
Petroleum:						
Crude[3]	thousand 42-gallon barrels	66,741	70,482	71,199	72,000 r	75,642
Refinery products:	do.					
Gasoline	do.	1,630	1,581	1,647	1,646 r	1,717
Kerosene	do.	--	575	579	616	634
Distillate fuel oil	do.	1,146	1,063	1,112	1,109 r	1,195
Residual fuel oil	do.	531	475	497 r	463 r	511
Other[4]	do.	659	554	533 r	626 r	582
Total	do.	3,966	4,248 r	4,368 r	4,460 r	4,639

rRevised. -- Zero.
[1]Table includes data available through April 30, 2004.
[2]In addition to the commodities listed, crude construction materials, such as sand and gravel and other varieties of stone, presumably are produced, but available information is inadequate to make reliable estimates of output levels.
[3]Includes condensate.
[4]Includes jet fuel, refinery fuel, and refinery losses.

Sources: Prime Minister's Department, Petroleum Unit and U.S. Geological Survey Minerals Questionnaire, 2000-2003.