

THE MINERAL INDUSTRY OF

BRUNEI

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Brunei, a small country on the northwest coast of Borneo Island in southeast Asia, had extensive reserves of petroleum and natural gas. According to the *Oil & Gas Journal*, Brunei's estimated proven reserves of crude petroleum and natural gas were 1.35 billion barrels and 399.27 billion cubic meters, respectively (*Oil & Gas Journal*, 1997). However, estimated proven reserves of crude petroleum and natural gas, according to the *World Oil*, were 1.09 billion barrels and 381.79 billion cubic meters, respectively (*World Oil*, 1997). In the Asia and Pacific region, Brunei ranked fourth in liquefied natural gas (LNG) production and seventh in crude petroleum and natural gas production in 1997.

In addition to its large oil and gas reserves, Brunei has considerable reserves of coal, kaolin, limestone, sand and gravel, and silica sand. Among industrial mineral resources, only construction aggregates and sand and gravel were produced for domestic consumption. Kaolin and silica sand, which had attracted foreign investors in the past year, were still undeveloped in 1997 (*Far Eastern Economic Review*, 1998). The potentially exploitable resource of kaolin, which was estimated at 310,000 cubic meters, is located in the Tungku area, about 8 kilometers northwest of Bandar Seri Bagawan, the national capital. The silica sand resource suitable for glass-making, which was estimated at 20 million metric tons, is located along the coast of the Tutong area (Halim, 1996).

The oil and gas sector remained the major sector of Brunei's economy in 1997. Brunei's economy, as measured by real gross domestic product (GDP), grew 3% in 1995, 3.5% in 1996, and an estimated 3% in 1997. Brunei's economic growth in the past 3 years was fueled mainly by Government spending in its fiscal budgets (*Far Eastern Economic Review*, 1998). However, the output of the oil and gas sector contributed about 53% to Brunei's real GDP. Brunei's GDP, in current dollars, was estimated at \$4.8 billion. The export earnings from crude petroleum, refined petroleum products, and LNG accounted for more than 92% of Brunei's total export earnings (*International Monetary Fund*, 1997). Brunei's export earnings from crude petroleum, refined petroleum products, and LNG were estimated at \$2.3 billion in 1997.

The oil and natural gas industry consisted of three operating companies, Brunei Shell Companies, Elf Aquitaine-Jasra, and Fletcher Challenge Petroleum. In 1997, Brunei Shell Companies conducted oil and gas exploration, produced and refined crude petroleum, produced and processed natural gas, marketed crude petroleum, refined petroleum product, and processed natural gas products. Elf and Fletcher only conducted oil and gas exploration in 1997.

Within Brunei Shell Companies, exploration and production of crude petroleum and natural gas, trading of crude petroleum and natural gas, and refining of crude petroleum were by Brunei Shell Petroleum Co. Sdn. Bhd. (BSP). Marketing of refined petroleum and petrochemicals products in the domestic market was by Brunei Shell

Marketing Sdn. Bhd. (BSM). Production and marketing of LNG were by Brunei LNG Sdn. Bhd. (BLNG). Transport of LNG was by Brunei Shell Tankers Sdn. Bhd. (BST), which owned seven LNG tankers and chartered to BLNG to deliver LNG to customers in Japan and the Republic of Korea. The Government of Brunei and a company in the Royal Dutch/Shell Group of Companies are equal shareholders of BSP, BSM, and BST. However, BLNG was owned 50% by the Government of Brunei, 25% by the Royal Dutch/Shell Group, and 25% by Mitsubishi Corp. of Japan.

In oil and gas exploration, BSP announced in September 1997 that it made a new oil discovery at the Mampak-1 well, located about 6 kilometers southwest of the Magpie Field in a water depth of 40 meters. It was the largest discovery made by BSP since the Iron Duke discovery in the 1980's. The Brunei Government was to auction off 25 offshore blocks in deeper water, beyond Shell's concession beginning in 1997. The auction will expire in mid-1998. In 1997, 31 oil companies had expressed their interest and obtained from the Government the technical data for review (*U.S. Embassy Bandar Seri Begawan*, 1998). In mid-1997, Unocal Corp. joined Fletcher as equal partner in oil and gas exploration in block A and block CD in Baram Delta, while Elf continued its exploration in the Maharaja Lela Field, about 19 kilometers northeast of BSP's Champion Field. Development of the Maharaja Lela Field by Elf was expected in 1999 (*World Oil*, 1997).

In oil and gas production, the output of crude petroleum including condensate averaged 162,100 barrels per day (bbl/d) and natural gas averaged 31.76 million cubic meters per day (Mm³/d) during the first 6 months of 1997 (*General Information on Brunei Darussalam—Economy*, accessed March 9, 1998, at URL <http://www.brunet.bn/brunei/eco.htm>). BSP produced oil and gas from two onshore oilfields and gasfields in Rasau and Seria-Tali and from seven offshore oilfields and gasfields in Southwest Ampa, Champion, Enggang, Fairley, Fairley-Baram, Iron Duke, and Magpie. The offshore Champion Field, about 70 kilometers northeast of Seria, contains about 40% of Brunei's crude petroleum reserves; and the Southwest Ampa Field, about 13 kilometers off Kuala Belait, holds more than 50% of Brunei's natural gas reserves.

In the first half of 1997, BSP exported 152,300 bbl/d of crude petroleum. Of the total crude petroleum exports, 39% went to the Association of Southeast Asian Nations (ASEAN); 28%, to the Republic of Korea; 26%, to Japan; 4%, to Taiwan; and 3%, to New Zealand. About 9,750 bbl/d of crude petroleum was consumed domestically by BSP's 8,600-bbl/d oil refinery at Seria for production of gasoline, distillate fuel oils, and kerosene. BSP sold its natural gas to BLNG for production of LNG at the Lumut LNG plant. The LNG plant operated five trains and each train has a capacity of producing 400 cubic meters per hour of LNG. In the first half of 1997, BLNG produced 31.76 Mm³/d of LNG, of which 82.1% was exported to Japan and the remaining 17.9%, to the Republic Korea.

In the industrial minerals sector, production of construction aggregates, sand and gravel, and stone was by numerous privately owned small-scale companies operated in the Lumapas area for construction aggregates, in the Temburong Valley area for gravel, and in the Tunggulian area for sand. Limestone reserves in the Lumapas had not been estimated by the Government, but reserves of gravel in the Temburong area were estimated at 27 million cubic meters and reserves of sand in the Tunggulian area, 29.8 million cubic meters (Halim, Quazi Abdul, 1996). The top eight stone quarries were Puni Sdn. Bhd., Butir Quarry Sdn. Bhd., Tobishima Jaya Sdn. Bhd., Hock Sin Quarry Sdn. Bhd., Syarikat Perusahaan Brunei Sdn. Bhd., New Temburong Quarry Sdn. Bhd., Bee Seng Quarry Sdn. Bhd., and Kuari Timbunan Sdn. Bhd.

In 1997, a clinker grinding plant with a capacity of 500,000 metric tons per year near the port city of Muara, was owned and operated by Butra Cement Sdn. Bhd. Butra Cement was a joint venture of Brunei, Indonesia, and Taiwan. Brunei imported raw materials including clinker and gypsum from ASEAN neighboring countries for its cement manufacturing. All cement produced by the plant was consumed domestically.

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Major Source of Information

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TABLE 1
BRUNEI: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/

Commodity 2/	1993	1994	1995	1996	1997	
Gas, natural:						
Gross	million cubic meters	9,776 r/ 3/	10,171 r/ 3/	11,152 r/ 3/	11,152 r/ 3/	12,000
Marketed	do.	9,120	9,310 r/	10,210 r/	10,210 r/	10,990
Petroleum:						
Crude 4/	thousand 42-gallon barrels	63,875 r/ 3/	64,970 r/ 3/	63,875 r/ 3/	62,269 r/ 3/	59,100
Refinery products:						
Gasoline	do.	630	620	620	620	620
Distillate fuel oil	do.	440	430	430	430	430
Residual fuel oil	do.	10	10	10	10	10
Other 5/	do.	340	330	340	340	340
Total	do.	1,420	1,390	1,420	1,420	1,420

r/ Revised.

1/ Table includes data available through March 25, 1998.

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/ Reported figure.

4/ Includes condensate.

5/ Includes refinery losses.

Sources: Ministry of Finance, Economic Planning Unit, Brunei Darussalam Statistical Yearbook, 1993-96 ; World Oil, 1997 World crude/condensate production and wells actually producing--1996 versus 1995, v. 218, no. 8, p. 36.