THE MINERAL INDUSTRIES OF

EQUATORIAL GUINEA AND SÃO TOMÉ E PRÍNCIPE

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EQUATORIAL GUINEA

The Republic of Equatorial Guinea consisted of the Rio Muni enclave on the African mainland and a number of islands and islets, which included Bioko in the Gulf of Guinea; Corisco, Elobey Chico, Elobey Grande, and Mbañe in Corisco Bay; and Annobón in the South Atlantic Ocean. The nation encompassed a total area of 28,051 square kilometers (km^2). Control of the island of Mbañe (and the associated maritime boundary) was disputed with Gabon. In 2002, the gross domestic product (GDP) of Equatorial Guinea was estimated to be $2.6 billion, and the population was estimated to be about 498,000 (U.S. Central Intelligence Agency, 2002a§[1]; International Monetary Fund, 2003§).

Mineral resources were the property of the State. The country's mineral industry revolved around the development of offshore oil and natural gas resources. Exploration and production contracts were administered by the Ministry of Mines and Energy, which also promoted the mainland's bauxite, columbite, diamond, gold, and tantalite occurences. Oil and natural gas exploration and production were regulated by decree law No. 7/1981 and its amendments. The national oil company, GEPetrol, which was established by decree law No. 9/2001, promoted investment opportunities in the nation's petroleum sector and managed the Government's interest in crude oil production operations.

Among African crude oil producers, Equatorial Guinea ranked eighth by volume of produced oil (U.S. Energy Information Administration, 2003§). Most of the oil was exported. In addition to oil, natural gas, and associated products, there was some production of crude construction materials (clay, gravel, sand, and volcanic rock) and gold. Imports fulfilled the nation's other mineral commodity requirements.

Review of Mineral Industry Activity

Alba Block, Block D, and Onshore Facilities.—In January 2002, Marathon Oil Co. (a subsidiary of Marathon Oil Corp., which was USX HoldCo. Inc. until July 2001 and USX Corp. from July to December 2001) completed the acquisition of CMS Energy Corp.'s and CMS Oil & Gas Ltd.'s interests in Equatorial Guinea, which included a 52.38% interest in the offshore Alba field, a 45% interest in Atlantic Methanol Production Co. LLC's (AMPCO) methanol plant, a 43.2% interest in the Punta Europa liquified petroleum gas (LPG) plant, and a 37.6% interest in block D. In June, Marathon acquired Globex Energy, Inc. and Globex International's 10.87% interest in the Alba field, 9.4% interest in block D, and 9% interest in the Punta Europa LPG plant. In 2002, Ocean Energy, Inc. withdrew from the block D concession, and at yearend, Marathon held an 84.6% interest in the block with SK Corporation of Korea (9.4%) and the Government (6% carried interest). Marathon Equatorial Guinea Production Ltd. (the local subsidiary) was the operator for the Alba field and block D. Two development wells were successfully drilled on the Alba block in 2002, and a three-dimensional (3D) seismic survey was acquired.

The Government approved two proposed expansion projects. Phase 2A, which consisted of the construction and installation of two shallow-water production platforms, the drilling of 12 production and gas-injection wells, and the expansion of the onshore condensate processing facilities, was expected to be completed in late 2003. The 2A expansion was projected to increase condensate production by 10.6 million barrels per year (Mbbl/yr), and total natural gas production would be increased to 8.3 billion cubic meters per year. Much of the dry gas that will remain after processing would be reinjected. The proposed 2B expansion included a new LPG plant and gas fractionation facilities. Phase 2B was expected to be online in late 2004 and would allow increased condensate recovery of nearly 3 Mbbl/yr and LPG production increase of nearly 5 Mbbl/yr (Marathon Oil Corp., 2003, p. 9; Noble Energy, Inc., 2003, p. 9-10). A planned Phase 3 expansion program included the construction of a liquified natural gas plant to be built by 2007.

AMPCO's 2,500-metric-ton-per-day-capacity methanol plant was closed from March 30 until June 3, 2002, for repairs (Noble Energy, Inc., 2002).

Blocks B and C.—The joint venture of Mobil Equatorial Guinea Inc., Ocean Equatorial Guinea Corp., and the Government continued the development of block B with eight successful wells. The Zafiro field on block B was the largest oilfield in Equatorial Guinea with production of about 51 million barrels of oil in 2002. Initial production from the planned Zafiro southern expansion field

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

on block B was scheduled for September 2003. Several of the 19 wells planned in the field [in water depths that range from 425 to 850 meters (m)] had been drilled. The conversion of the floating, production, storage, and offloading vessel (FPSO) *Serpentina* from a 307,431 dead-weight-ton crude oil tanker was expected to be completed in early 2003. The *Serpentina* was designed with 110,000-barrel-per-day (bbl/d)-capacity crude oil processing facilities (Petroleum Economist, 2002; Keppel Corp., 2003; Ocean Energy, Inc., 2003, p. 6). In 2002, the joint venture drilled an exploration well on block C. The joint venture proposed to drill five wells on block B and one new well on block C in 2003.

In April, the Governments of Equatorial Guinea and Nigeria consented to a transborder unitization agreement that formed the Zafiro-Ekanga block from block B in Equatorial Guinea and oil prospecting license (OPL) 102 and oil mining lease (OML) 115 in Nigeria. Equatorial Guinea was to receive 40% of the contractual governmental revenue from the unitized block, and Nigeria, the remainder. At yearend, unitization negotiations between the operators of the concessions (Exxon Mobil Corp. on block B, Oriental Energy Resources Ltd. on OML 115, and TotalFinaElf S.A. on OPL 102) were still underway.

Block E.—In 2002, TotalFina Elf relinquished the block after drilling the Hippocampo-1 wildcat in 2001.

Blocks F and G.—The partnership of Energy Africa Ltd. and Triton Equatorial Guinea, Inc. [a subsidiary of Amerada Hess Corp. (AHC)] successfully drilled the F-2 exploration well on block F; the discovered oil pool was named the Ebano prospect. Also in 2002, the Abang prospect was discovered with the G-10 exploration well about 23 kilometers (km) northeast of the Ceiba field, and an additional petroleum reservoir was discovered with the G-13 wildcat about 16 km southwest of the Ceiba field.

The partnership's development of the Ceiba field on block G continued; AHC's and Energy Africa's financial difficulties, however, curbed the planned rapid development of the oil discoveries on blocks F and G (Africa Energy Intelligence, 2002; Grant, 2002§). AHC proposed to drill additional production and water-injection wells in the Ceiba field, three additional exploration wells on blocks F and G in 2003, and appraisal wells on the Abang, the Akom, and the Ebano prospects in 2004. The partnership also submitted development plans for the Elon, the Okume, and the Oveng prospects; initial production was scheduled in 2005.

In January, the 160,000-bbl/d-of-liquids-production-capacity FPSO *Sendje Ceiba* replaced the 60,000-bbl/d-of-liquids-production-capacity FPSO *Sendje Berge*. The FPSO *Sendje Ceiba* would allow better reservoir maintenance with its water injection capacity of 135,000 bbl/d (Amerada Hess Corp., 2001).

Block H.—Atlas Group and Roc Oil Co. Ltd. evaluated a 1,400-km^2 3D seismic survey on block H. Sasol Petroleum International Ltd. acquired 20% equity interest in the block from Atlas. Atlas subsequently renegotiated the production-sharing contract and increased its equity interest in the block to 45% while reducing Roc Oil's interest to 35%. The joint venture planned to drill an exploration well on the block in 2004.

Blocks L, M, N, and O.—In 2002, Vanco Energy Co. evaluated a 3D seismic survey of block L (Corisco Deep) and acquired 10% equity interest in block N (Corisco Bay) with partners Petronas Carigali Overseas Sdh. Bhd. (60%) and Ocean (30%). The partnership acquired and evaluated a 3D seismic survey on block N and proposed to drill an exploration well in 2003. On block L, the partnership of Chevron Equatorial Guinea Ltd. (65% equity interest), Triton (25%), and Sasol (10%) proposed to drill a wildcat well in 2003. Deepwater block M was acquired by Fruitex Group. The joint venture of Glencore (a subsidiary of Glencore International AG) and GEPetrol acquired block O, which was the former block A (concession grids B-14, B-15, C-14, and C-15).

Other Concession Areas.—In early 2002, GESeis (the joint venture of GEPetrol and Terra Energy Services AS of Norway) acquired an 850-km^2 3D seismic survey across concession grid blocks H-17 and I-17 and acquired an 866-km two-dimensional deepwater (more than 3,000 m) reconnaissance survey in the vicinity of Annobón. Terra Energy Services subsequently merged with InSeis AS to form InSeis Terra AS.

Infrastructure

Luba Freeport Ltd. operated a deepwater (10 m) oilfield logistics port, service facility, and duty-free zone at Luba, on the southern end of Bioko, under a 25-year concession from the Government. In 2002, the Government negotiated for the construction of an additional oilfield port at Malabo.

SÃO TOMÉ E PRÍNCIPE

The Democratic Republic of São Tomé e Príncipe consisted of the main islands of São Tomé and Príncipe and several islets (Bombom, Caroço, Rolas, Tinhosa Grande, Tinhosa Pequena, Vabras, and Varoco) in the Gulf of Guinea. Situated offshore Gabon between Equatorial Guinea's Bioko and Annobón, the nation encompassed a total area of 1,001 km^2. In 2002, the nominal GDP of São Tomé e Príncipe was estimated to be $55 million, and the population was estimated to be about 170,000 (U.S. Central Intelligence Agency, 2002b§; International Monetary Fund, 2003§).

The mineral industry was administered by the Ministry of Public Works, Infrastructure, Natural Resources, & Environment. There was some clay and volcanic rock production. All other mineral product requirements were imported.

In 2002, the Nigeria-São Tomé & Príncipe Joint Development Authority was established to resolve problems associated with petroleum exploration in an area of overlapping maritime exclusive economic zones. The treaty that authorized the Joint Development Authority and defined the zone's coordinates had been signed in 2001 after 14 months of negotiations. In 2002, the Government began the renegotiation of existing petroleum agreements it had with Chrome Energy Corp. of the United States (an indirect subsidiary of Chrome Group of Nigeria), which was formerly known as Environmental Remediation Holding Corp. of the United States, ExxonMobil, and Petroleum Geo-Services ASA of Norway to conform with Joint Development Authority strictures.

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Major Source of Information

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Ministerio de Minas y Energia, 2002, Hydrocarbons and Mining in Equatorial Guinea: Malabo, Ministerio de Minas y Energia, 21 p.

TABLE 1

EQUATORIAL GUINEA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Thousand 42-gallon barrels unless otherwise specified)

Commodity[3]		1998	1999	2000	2001	2002
Crude oil and condensate		30,000	33,000	39,000	66,000 r	69,000
Gold	kilograms	500	500	500	500	500
Liquified petroleum gases		660	800	800	800	700
Methanol	metric tons	--	--	--	600,000	719,000
Natural gas[4]	million cubic meters	78	83	98	790	1,050

[r]Revised. -- Zero.

[1]Includes data available through April 7, 2003.

[2]Estimated data are rounded to no more than three significant digits.

[3]In addition to the commodities listed, Equatorial Guinea presumably produced a variety of crude construction materials (clay, gravel, and sand).

[4]Marketed gas estimate.