



2007 Minerals Yearbook

NIGERIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF NIGERIA

By Philip M. Mobbs

As Africa's leading crude oil producer, Nigeria, which was a member of the Organization of the Petroleum Exporting Countries (OPEC), accounted for 23% of African, and about 3% of total world crude oil production in 2007. Crude oil production in Nigeria again declined in 2007. The average price of Bonny Light, which is a Nigerian crude oil standard, rose to \$74.96 per barrel in 2007 compared with \$66.38 per barrel in 2006 and \$55.43 in 2005. Despite the increase in the prices received for crude oil, Government revenue from hydrocarbons declined to \$35.5 billion¹ (which was about 79% of total revenue) compared with \$41 billion (about 88%) in 2006 (BP p.l.c., 2008, p. 9; Central Bank of Nigeria, 2008, p. 199, 230).

Notable legislative changes in 2007 included the replacement of the Mining and Minerals Decree (law No. 34 of 1999) with the Minerals and Mining Act, 2007. The Petroleum Act of 1969 formed the legal basis for activity in the petroleum exploration and development sector.

Minerals in the National Economy

The Federal Government held all mineral rights and was responsible for the allocation of exploration and development licenses. According to data compiled by the National Bureau of Statistics, crude oil and natural gas activity accounted for about 31% of the nominal Nigerian gross domestic product in 2007; solid mineral production accounted for about 0.2%. In an attempt to diversify the economy, Government policy emphasized that solid minerals (as opposed to natural gas and oil) should be a strategic sector of the Nigerian economy (Central Bank of Nigeria, 2008, p. 214).

Total official exports in 2007 were provisionally valued at about \$65 billion, of which the value of exported crude oil was \$58 billion, and natural gas exports, \$5 billion. Of the total official crude oil exports from Nigeria, the United States imported 43%; India, 8%; Spain, about 6%; France, about 5%; Italy, about 5%; and Côte d'Ivoire, about 3% (Central Bank of Nigeria, 2008, p. 236, 242).

Production

In 2007, the continued decline in crude oil production was attributed to the civil disturbances in the Niger Delta region and criminal violence directed at the international oil company facilities and personnel; repeated vandalism of domestic crude oil, natural gas, and petroleum products pipelines; and an additional reduction in the OPEC crude oil production ceiling allocation (quota) of 42,000 barrels per day (bbl/d) that became effective in February 2007 (table 1; Central Bank of Nigeria, 2008, p. 95; Organization of the Petroleum Exporting Countries, 2008, p. 6).

¹Where necessary, values have been converted from Nigerian naira (₦) to U.S. dollars (US\$) at the average rates of ₦125.72=US\$1.00 for 2007 and ₦128.65=US\$1.00 for 2006.

Only the two adjacent refineries of Port Harcourt Refining Co. Ltd. processed crude oil in 2007, which resulted in the net decline in the output of refined petroleum products. Kaduna Refinery and Petrochemicals Co. Ltd. and Warri Refinery and Petrochemicals Co. Ltd. (which had operated intermittently since the February 2006 vandalism incidents that shut down the Escravos-Warri pipeline that supplied crude oil to the refineries) processed intermediate petroleum products that were received from the Port Harcourt refinery complex. Other significant production declines were posted for barite, iron ore, limestone, shale, and tin ore. Notable production increases were posted for cement, clays, gold, gypsum, lead and zinc ore, natural gas, niobium (columbium), and tantalum (Platts, 2006; Nigerian National Petroleum Corp., 2008, p. 11).

Structure of the Mineral Industry

In 2007, the iron and steel section of the former Ministry of Power and Steel was transferred to the former Ministry of Solid Minerals Development. The combined groups were renamed the Ministry of Mines and Steel Development, which managed much of the solid minerals sector. The Ministry of Industry managed the cement sector.

The Minister of State for Petroleum Resources was responsible for the management of petroleum resources. Reorganization of the petroleum sector continued in 2007 with the establishment of the National Energy Council (NEC), which was tasked with the restructuring of the Nigerian National Petroleum Corp. (NNPC). The NEC established the National Petroleum Co. of Nigeria, which, as the national oil company, was to oversee Nigeria's petroleum refineries and the distribution of petroleum products. State-owned NNPC was the major partner in natural gas and petroleum production joint ventures with subsidiaries of large international oil companies, such as Chevron Corp. and Exxon Mobil Corp. of the United States, Eni SpA of Italy, Royal Dutch Shell plc of the United Kingdom, and Total S.A. of France. Crude oil also was produced under production-sharing contracts, service contracts, and by sole risk operators (primarily independent domestic companies). Most Nigerian natural gas output was produced as a coproduct of crude oil production.

Commodity Review

Metals

New metal exploration in Nigeria included CGA Mining Ltd.'s Segilola gold project in Osun State and Geneva Resources, Inc.'s copper and zinc prospects in Plateau State. In 2007, Fugro N.V. was awarded the contract to acquire and process 1 million line kilometers of airborne magnetic and radiometric data for the Ministry of Mines and Steel Development.

Aluminum.—United Company RUSAL of Russia acquired 77.5% interest in the Aluminium Smelter Co. of Nigeria (ALSCON). Other owners of ALSCON included the Government, with 15% interest, and Ferrostaal AG of Germany, with 7.5% interest. RUSAL expected to resume production from the 193,000-metric-ton-per-year-(t/yr)-capacity ALSCON smelter in 2008 (Osadolor and Udonquak, 2007).

Iron and Steel.—In 2007, the National Assembly continued its investigation into the previous Administration's decision (in 2004) to award Global Steel Holdings Ltd. (formerly known as Global Infrastructure Holdings Ltd.) the right to manage Ajaokuta Steel Co. Ltd. and National Iron Ore Mining Co. Global Steel also held majority equity interest in Delta Steel Co., which operated Nigeria's other steel plant.

In the past few years, several small steel-rolling mills had started operations in Nigeria. Aarti Steel Nigeria Ltd., which was a joint venture of Rockland Steel Trading Pvt. Ltd. of India and Shivalikview Steel Trading Pvt. Ltd. of India, proposed to build a 50,000-t/yr-capacity steel galvanizing plant at Sango Otta, Ogun State, which was located about 39 kilometers (km) north of Lagos (Multilateral Investment Guarantee Agency, 2007),

Mineral Fuels

Natural Gas.—Nigeria LNG Ltd. began production from the 4.1-million-metric-ton-per-year (Mt/yr)-capacity liquefied natural gas (LNG) train 6 in December. The proposed 8.4-Mt/yr-capacity LNG train 7 was tentatively scheduled to come online in 2012. Bechtel Corp. of the United States started the site preparation for the proposed 2-train, 10-Mt/yr-capacity Brass LNG Ltd. facility, which was located adjacent to the Nigerian Agip Oil Co. terminal on Brass Island. Initial production was scheduled for 2011. Partners in the Olokola LNG (OK LNG) project agreed to build the proposed 4-train, 22-Mt/yr-capacity LNG facility. Construction of the OK LNG facility, which was located about 120 km east of Lagos, was expected to proceed in two 11-Mt/yr-capacity phases (Izundu, 2007; BG Group plc, 2008, p. 22; Nigeria LNG Ltd., undated).

In late 2007, the December 31, 2007, deadline to eliminate the burn-off (flaring) of natural gas was extended again; December 31, 2008, was designated as the new deadline. In 2007, about 33% of produced natural gas was flared compared with about 37% in 2006 (Nigerian National Petroleum Corp., 2007, p. 9; 2008, p. 9; Uwugaiaren, 2008).

Petroleum.—In 2007, the NNPC joint venture operated by Mobil Producing Nigeria Unlimited became Nigeria's leading crude oil producer. The NNPC joint venture that was operated by Shell Petroleum Development Co. of Nigeria Ltd. dropped to second, the NNPC joint venture that was operated by Chevron Corp. was third, and the NNPC joint venture that was operated by Total S.A.'s subsidiary Elf Petroleum Nigeria Ltd. was fourth. Many of the onshore operations in the western Niger River delta region remained suspended in 2007 because of the ongoing civil unrest, especially the activity of the joint venture that involved NNPC and Shell, which formerly had been the leading crude oil producer. Incidents of pipeline damage in Nigeria reportedly declined in 2007 to 3,224 successful acts of sabotage and vandalism and 20 pipeline ruptures, which

was down from a total of 3,685 occurrences in 2006. Pipeline incidents had been below 1,000 per year as recently as 2004 (Nigerian National Petroleum Corp., 2008, p. 17; Royal Dutch Shell plc, 2008, p. 25).

In March, the Government revoked 17 licenses to construct privately owned crude oil refineries, which had been expected to be able to refine about one-half of Nigeria's crude oil output. The licenses had been awarded in 2002 with the expectation that construction of the refineries would begin by 2005. The companies that had proposed to build the refineries cited their inability to secure financing and foreign technical partners, owing in part to the lack of international confidence in the Nigerian business environment. Also cited was the lack of a guaranteed oil supply (Lawal, 2007).

In May, the Government's Bureau of Public Enterprises awarded the Kaduna and the Port Harcourt refinery companies to the Bluestar Oil Services Consortium, which was a joint venture of the Dangote Group, Transnational Corp., and Zenon Petroleum of Nigeria. By July, the Bluestar Consortium, which had paid about \$721 million for 51% equity interest in the refinery companies, withdrew from the transaction because of problems discovered during the Consortium's due diligence investigation. Legislative investigation into the transaction and the objections raised by organized labor may also have influenced the Bluestar Consortium's decision to withdraw (Lawal and Okwe, 2007).

Outlook

The Government's action to diversify the mineral sector included the updated Mining Law, the ongoing reorganization of state-owned companies in the mineral sector, and the increased efforts to attract local and foreign investors to explore for and develop economic mineral deposits. Most mineral occurrences in Nigeria need additional evaluation to begin to generate international investor interest. Such basic mineral reconnaissance work is expected to continue across Nigeria with funding from the European Union, the U.S. Trade and Development Agency, and the World Bank. The ongoing civil unrest in southern Nigeria, however, is expected to continue to adversely affect international investor interest in the Nigerian solid minerals sector.

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TABLE 1
NIGERIA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2003	2004	2005	2006	2007
METALS					
Gold kilograms	50	30	30	50 ^r	120
Iron ore, gross weight thousand metric tons	--	--	60	88 ^{r,4}	58 ⁴
Lead:					
Lead-zinc ore	250	200	--	492,000 ^{r,4}	582,000 ⁴
Metal, refined	5,000	5,000	5,000	5,000	5,000
Niobium (columbium) and tantalum concentrates:					
Gross weight	383 ⁴	100	99	110	180
Niobium (columbium) content	160	40	35	40	70
Steel	--	40,000	100,000	500,000 ^r	500,000
Tin:					
Mine output, cassiterite concentrate:					
Gross weight	2,341 ⁴	1,300	1,700	1,818 ⁴	229 ⁴
Sn content	1,800	1,000	1,300	1,400	180
Metal, smelter	25	25	25	--	--
INDUSTRIAL MINERALS					
Barite ⁵	5,000	6,000	6,000	6,300	5,000
Cement, hydraulic thousand metric tons	2,300	2,300	2,700 ^r	3,300 ^r	4,700 ^r
Clays:					
Kaolin	52,000	58,000	93,000	100,000	100,000
Unspecified	150,000	150,000	150,000	160,000	200,000
Feldspar	500	1,000	1,100	1,200	1,200
Gypsum	150,000	160,000	150,000	169,000 ^r	579,000 ⁴
Shale thousand metric tons	1,200	1,200	1,200	1,300	83
Stone:					
Granite do.	2,500	2,000	2,000	--	--
Limestone do.	7,408 ⁴	2,100	1,200	15,300 ⁴	3,300 ⁴
Marble do.	840 ⁴	150	149	200	200
Topaz kilograms	10	10	--	10	10
MINERAL FUELS AND RELATED MATERIALS					
Coal, bituminous	23,089 ⁴	--	8,000 ^r	530,000 ^r	530,000
Natural gas:					
Gross million cubic meters	53,000	57,747 ⁴	57,369 ⁴	57,754 ⁴	68,404 ⁴
Dry do.	31,000	34,411 ⁴	34,744 ⁴	39,000	46,046 ⁴
Petroleum:					
Crude thousand 42-gallon barrels	825,000	900,400 ⁴	923,500 ⁴	869,197 ^{r,4}	803,000 ⁴
Refinery products:					
Liquefied petroleum gases do.	200	20 ⁴	700	NA	16 ⁴
Gasoline do.	6,000	4,600 ⁴	14,800	8,500	2,450 ⁴
Kerosene do.	5,700	4,900 ⁴	10,100	6,100	2,550 ⁴
Distillate fuel oil do.	10,300	8,800 ⁴	15,800	9,400	4,645 ⁴
Residual fuel oil do.	15,000	12,400 ⁴	19,200	14,400	6,670 ⁴
Unspecified do.	3,900	3,400 ⁴	4,300	1,000	1,681 ⁴
Total do.	41,100	34,100 ⁴	65,000	39,400	18,012 ⁴

^rRevised. do. Ditto. NA Not available. -- Zero.

¹Estimated data are rounded to no more than three significant digits; may not add to totals shown.

²Table includes data available through December 11, 2008.

³In addition to the commodities listed, amethyst, aquamarine, bitumen, copper (secondary), diamond, emerald, garnet, ilmenite, lime, monazite phosphate rock, ruby, rolled-steel products, rutile, sand and gravel, sapphire, soda ash, talc, tourmaline, tungsten, zinc, and zircon are produced, but available information is inadequate to estimate output.

⁴Reported figure.

⁵Considerably more barite is produced but it is considered to be commercially unusable.

TABLE 2
NIGERIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2007

(Metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facilities	Annual capacity
Aluminum		Aluminum Smelter Co. of Nigeria, Ltd. (ALSCON) (United Company RUSAL, 77.5%)	Smelter at Ikot Abasi	193,000 ¹
Cement		Obajana Cement Plc (Dangote Group)	Lines 1 and 2 at Obajana	5,000,000 ²
Do.		United Cement Co. of Nigeria (Egyptian Cement Co., 70%, and Flour Mills of Nigeria Ltd., 30%)	Calbar	2,500,000 ³
Do.		West Africa Portland Cement Co. Plc (Lafarge S.A., 59.95%)	Ewekoro	1,320,000
Do.		Ashakacem Plc (Lafarge S.A., 50.11%)	Ashaka	900,000
Do.		Benue Cement Co. Plc (Dangote Group)	Benue State	900,000 ⁴
Do.		West Africa Portland Cement Co. Plc (Lafarge S.A., 59.95%)	Shagamu	600,000
Do.		Cement Co. of Northern Nigeria Plc (Scancem International INS, 50.7%)	Sokoto	500,000
Do.		Edo Cement Co. Ltd. (Scancem International INS, 87%)	Okpella	450,000
Coal		Kogi State government	Ogboyoga Mine	NA
Copper, secondary		Sun & Sand Industries Ltd.	Ota	NA
Fertilizer:				
Single superphosphate		Heikio Consortium Ltd.	Kaduna	100,000 ¹
Urea		Notore Chemical Industries Ltd.	Onne	600,000 ¹
Iron and steel:				
Iron ore		National Iron Mining Co. Ltd. (Government, 100%)	Itakpe	5,500
Steel:				
Steel, crude		Ajaokuta Steel Co. Ltd. (Government, 100%)	Blast furnace at Ajaokuta	1,350,000 ¹
Do.		Delta Steel Co. Ltd. (Global Steel Holdings Ltd.)	Electric arc furnaces at Aladja	1,000,000
Do.		African Steel Mills Ltd. (Liberty Group)	Electric arc furnace at Ikorodu	170,000
Rolling mills		Delta Steel Co. Ltd. (Global Steel Holdings Ltd.)	Aladja	300,000
Do.		Jos Steel Rolling Co. Ltd. (Zuma Steel West Africa Ltd.)	Jos rolling mill	210,000 ¹
Do.		Katsina Steel Rolling Co. Ltd. (Dana Steel Ltd.)	Katsina rolling mill	207,000 ¹
Do.		Oshogbo Steel Rolling Co. Ltd. (Kura Holdings Ltd.)	Oshogbo rolling mill	210,000 ¹
Do.		Ajaokuta Steel Co. Ltd. (Government, 100%)	Ajaokuta	130,000
Do.		African Steel Mills Ltd. (Liberty Group)	Rolling mill at Ikorodu	100,000
Do.		Sunflag Steel (Nigeria) Ltd.	Rolling mill at Lagos	30,000
Natural gas, liquefied	million metric tons	Nigeria Liquefied Natural Gas Ltd. [Nigerian National Petroleum Corp., 49%; Shell Gas B.V., 25.6%; Total LNG Nigeria Ltd., 15%; ENI International (N.A.) S.a.r.l., 10.4%]	Trains 1 through 5 at Finima, Bonny Island	17
Do.	do.	do.	Train 6 at Finima, Bonny Island	4 ³
Do.	do.	Brass LNG Ltd. [Nigerian National Petroleum Corp., 49%; Brass Holdings Co. Ltd., 17%; ENI International (N.A.) S.a.r.l., 17%; Phillips (Brass) Ltd., 17%]	Trains 1 and 2 on Brass Island	10 ³
Niobium (columbium) and tantalum				
		Artisanal miners	Jos region	NA
Petroleum:				
Crude	million 42-gallon barrels	Produced under various joint ventures with Nigerian National Petroleum Corp., production-sharing contracts, service contracts, and sole risk operations	Niger Delta and offshore	980
Refined petroleum products	do.	Port Harcourt Refining Co. Ltd. (Government, 100%)	New Port Harcourt refinery	55
Do.	do.	do.	Old Port Harcourt refinery	22
Do.	do.	Warri Refinery and Petrochemicals Co. Ltd. (Government, 100%)	Warri refinery	43
Do.	do.	Kaduna Refinery and Petrochemicals Co. Ltd. (Government, 100%)	Kaduna refinery	38
Tin				
		Artisanal miners	Mines at Dutse Nkura	30
Do.		do.	Mines at Gurum, near Jos	30

Do., do. Ditto. NA Not available.

¹Under rehabilitation.

²Lines 3 and 4 with an additional annual capacity of 5 million metric tons are under construction.

³Under construction.

⁴Expansion to 2.7 million metric tons per year is underway.