



2013 Minerals Yearbook

NIGERIA

THE MINERAL INDUSTRY OF NIGERIA

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As Africa's leading crude oil producer, Nigeria accounted for 26.6% of African and about 2.7% of total world crude oil production in 2013. The state-owned Nigerian National Petroleum Corp. (NNPC) reported that crude oil and condensate output in 2013 decreased to 800.5 million barrels (Mbbbl) from about 852.8 Mbbbl in 2012 (BP p.l.c., 2014, p. 10; Nigerian National Petroleum Corp., 2014, p. 29).

The Federal Government holds all mineral rights and is responsible for issuing exploration and development licenses. The Minerals and Mining Act, 2007; the Minerals and Mining Regulations, 2011; and the Petroleum Act of 1969 form the legal basis for exploration and production activity in the mineral sector.

Minerals in the National Economy

In 2013, the Nigerian hydrocarbon sector, which included the production of crude oil, natural gas, and refined petroleum products, accounted for 13.2% of the nominal GDP at market price (which was \$513 billion).² The contribution to the GDP of other minerals-related activity included the construction sector, which accounted for 3.3% of the GDP; the manufacturing and distribution of cement, 0.6%; the manufacturing and distribution of basic metals (primarily iron and steel), 0.2%; and the production of coal, metal ores, and other minerals, 0.1% (table 1; National Bureau of Statistics, 2014b).

The Nigerian hydrocarbon sector accounted for about 75% of Government revenue. Exports of natural gas and petroleum accounted for about 95% of total Nigerian exports (which were valued at \$88 billion). Crude oil exports accounted for 82.9% of total exports. In 2013, total imports into Nigeria were valued at \$43 billion, of which refined petroleum products accounted for 16% (International Monetary Fund, 2014, p. 10; National Bureau of Statistics, 2014a, p. 9, 15).

Production

In addition to crude and refined hydrocarbons, Nigeria produced a small suite of minerals, which included barite, coal, gemstones, gold, iron ore, niobium, salt, sand, stone, tantalum, and tin, and some mineral-based commodities, such as aluminum, cement, nitrogenous fertilizers, and steel. The production of refined petroleum products was estimated to have increased by 29% in 2013, and natural gas liquids, by 18%. In 2013, the production of aluminum decreased by 92%; lead-zinc ores, by 33%; iron ore, by 29%; and natural gas, by 18% (table 1).

Structure of the Mineral Industry

The Ministry of Mines and Steel Development (MMSD) manages much of the solid minerals sector. The Nigerian Mining Cadastre Office, which is a department of the MMSD, processes mineral title applications, including exploration licenses, mining licenses, quarrying licenses, and small-scale mining licenses. The Nigerian Geological Survey Agency (NGSA) explores mineral deposits and collects geoscience information. Small-scale artisanal miners operated most of the mines and quarries. Nigeria also had a large ferrous and nonferrous metal recycling sector.

The Federal Ministry of Petroleum Resources is responsible for the oversight of the natural gas and petroleum sectors. The NNPC was the major partner in natural gas and petroleum production joint ventures, which were operated by subsidiaries of large international oil companies or domestic oil companies. Crude oil also was produced under production-sharing contracts, service contracts, and by sole risk operators (primarily independent domestic companies). Government-operated refineries accounted for more than 99% of national petroleum refining capacity. Most Nigerian natural gas output was associated with crude oil production.

Commodity Review

Metals

Aluminum.—Aluminum Smelter Co. of Nigeria, Ltd. (ALSCON), which was a joint venture of United Company RUSAL Plc of Russia and the Government, produced about 2,000 metric tons of aluminum in 2013, which was about 2% of nameplate capacity. The lack of a reliable supply of natural gas to operate the smelter's powerplant, ongoing ownership issues, transportation issues that affected alumina imports and aluminum ingot exports, and the poor world market for aluminum continued to adversely affect operations. BFIG Group Divino Corp. of the United States continued its litigation concerning the validity of BFIG's contract to acquire ALSCON in 2004 (Odey, 2013; United Company RUSAL Plc, 2014, p. 32, 53).

Iron Ore.—In 2013, KCM Mining Ltd., which was a subsidiary of Kogi Iron Ltd. of Australia, completed a reverse circulation drill program on the Agbaja project. Kogi subsequently initiated an environmental and social impact assessment study and a prefeasibility study of the project that were expected to be completed in early 2014. The company also planned to complete a feasibility study by the end of 2014. Depending on the results of the studies, Kogi could produce 5 million metric tons per year of iron ore at Agbaja starting in late 2016 or early 2017. The Agbaja magnetite deposit was located about 15 kilometers north of Lokoja, Kogi State (Kogi Iron Ltd., 2014).

¹Deceased.

²Where necessary, values have been converted from Nigerian naira (NGN) to U.S. dollars (US\$) at an average rate of NGN158=US\$1.00 for 2013.

Mineral Fuels

Petroleum.—In 2013, companies affiliated with Exxon Mobil Corp. of the United States, which included Esso Exploration and Production Nigeria Ltd. and the Mobil Producing Nigeria Unlimited joint venture with NNPC, accounted for about 30% of Nigerian crude oil production. Associated companies of Royal Dutch Shell plc, which included Shell Nigeria Exploration and Production Co. and the Shell Petroleum Development Company of Nigeria Ltd. joint venture with NNPC, accounted for 22% of crude oil production. Affiliated companies of Chevron Corp. of the United States, which included the Chevron Nigeria Ltd. (CNL) and the NNPC joint venture, the Chevron (Pennington) operation, and Star Deep Water Petroleum Ltd., accounted for about 20% of crude oil production (Nigerian National Petroleum Corp., 2014, p. 3).

Reported incidents of crude oil and refined petroleum product pipeline vandalization increased to 3,505 incidents in 2013 from 2,320 incidents in 2012. Stolen crude oil was smuggled through the Niger River Delta to small tankers anchored offshore or was illegally refined in the delta region for local consumption. The small (30- to 150-barrel-per-day) refineries, which operated intermittently (primarily at night to avoid detection by Government forces), typically produced diesel fuel, gasoline, and kerosene. In 2013, the Ministry of Defense's Joint Task Force destroyed 1,951 illegal refineries compared with 3,778 refining camps destroyed in 2012. Reported pipeline ruptures, which were associated with mechanical and structural failures of the pipelines, increased to 65 occurrences in 2013 from 26 in 2012 (Niyi, 2013; Onuorah, 2013; Stakeholder Democracy Network, 2013, p. 15–19; Nigerian National Petroleum Corp., 2014, p. 68).

American imports of Nigerian hydrocarbons continued to decrease in 2013. About 102.6 Mbbl of Nigerian crude oil and petroleum products were exported to the United States in 2013 compared with 161.6 Mbbl in 2012 and 413.9 Mbbl in 2007. Crude oil accounted for 85.2% of these exports in 2013, 91.9% in 2012, and 95.6% in 2007. The dramatic decrease in crude oil exports to the United States was attributed to lower demand for imported oil owing to increased production of oil from shale formations in the United States. In the past few years, increased volumes of Nigerian crude oil had been shipped to Europe, especially to France, Italy, the Netherlands, and the United Kingdom (Lidji, 2012; Nigerian National Petroleum Corp., 2014, p. 32; U.S. Energy Information Administration, 2014a, b).

Outlook

For the past few years, the Government's ongoing promotion of the diversification of the mineral sector has become more important because crude oil revenues have decreased. The NGS has increased its mineral exploration activity. The MMSD identified barite, bitumen, coal, gold, limestone, iron ore, lead, and zinc as strategic minerals that are to be targeted for priority development. The intermittent availability of electrical power, however, is expected to continue to affect mineral-processing and other businesses in Nigeria. Corruption,

high local-community expectations, ongoing issues concerning the privatization of former state-owned enterprises, illegal mining and associated environmental damage, inadequate availability of funding for mineral projects, poor transportation infrastructure, and security issues in various parts of the country also adversely affect mineral-related activity (U.S. Department of State, 2013; KPMG Advisory Services, 2014, p. 2, 12).

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

(Metric tons unless otherwise specified)

Commodity ³	2009	2010	2011	2012	2013
METALS					
Aluminum	13,000	21,200	17,600	26,000	2,000 ⁴
Gold kilograms	1,350	3,718 ⁴	4,000	4,000	4,200
Iron and steel:					
Iron ore, gross weight thousand metric tons	99 ⁴	63 ⁴	70 ⁴	70	50
Steel	100,000	100,000	100,000	400,000	400,000
Lead-zinc ore	530,000	680,000	800,000	600,000	400,000
Niobium (columbium) and tantalum concentrates:					
Gross weight	331	281	311	310	300
Niobium (columbium) content	23	20	22	22	21
Tantalum content	68	58	64	63	60
Tin, mine output, cassiterite concentrate:					
Gross weight	510	680	740	740	740
Sn content	400	520	570	570	570
INDUSTRIAL MINERALS					
Barite ⁵	19,400 ⁴	13,249 ^{r,4}	4,988 ^{r,4}	10,000 ^r	10,000
Cement, hydraulic thousand metric tons	10,000	11,000	12,800	16,400	18,000
Clays, includes kaolin	154,000 ⁴	139,000 ⁴	155,000 ⁴	140,000	140,000
Feldspar	1,700	1,616 ⁴	1,700	1,700	1,700
Gypsum	300,000	320,000	320,000	350,000	350,000
Nitrogen, N content of ammonia	40,000	95,000	80,000	240,000	240,000
Sand and stone:					
Laterite thousand metric tons	2,740 ⁴	2,322 ⁴	2,573 ⁴	2,600	2,500
Limestone do.	4,237 ⁴	5,671 ⁴	8,280 ⁴	11,000	12,000
Marble do.	190	--	--	--	--
Sand, construction do.	1,050 ⁴	1,254 ⁴	1,394 ⁴	1,400	1,400
Sand, industrial (silica) do.	32	30	30	30	30
Stone, crushed (aggregate):					
Granite do.	10,104 ⁴	7,739 ⁴	9,621 ⁴	10,000	10,000
Marble do.	8,995 ⁴	9,356 ⁴	10,185 ⁴	10,000	10,000
Other do.	3,762 ⁴	3,673 ⁴	4,074 ⁴	4,000	4,000
Shale do.	7,235 ⁴	6,690 ⁴	7,452 ⁴	9,000	9,000
Topaz kilograms	1,077 ⁴	1,000	1,000	900	900
MINERAL FUELS AND RELATED MATERIALS					
Coal, bituminous	40,612 ⁴	45,713 ⁴	39,213 ⁴	40,000	40,000
Natural gas: ⁴					
Gross million cubic meters	52,026	67,758	67,972	73,063	65,869
Marketed ⁶ do.	24,413	45,903	38,343	37,946	31,231
Petroleum:					
Crude and condensate ⁴ thousand 42-gallon barrels	780,348	896,043	866,245	852,777	800,488
Natural gas liquids do.	15,500	14,700	18,600	15,700	18,573 ⁴
Refinery products:					
Liquefied petroleum gases do.	1,200	1,900	1,200	1,000	1,880 ⁴
Gasoline do.	3,102 ⁴	6,400	10,900	9,700	10,500 ⁴
Kerosene do.	2,530 ⁴	5,000	5,800	4,700	5,790 ⁴
Distillate fuel oil do.	4,168 ⁴	7,000	8,200	7,200	7,600 ⁴
Residual fuel oil do.	4,060 ⁴	6,600	9,300	6,500	8,960 ⁴
Unspecified do.	1,617 ⁴	3,000	6,100	4,400	4,490 ⁴
Total do.	16,677 ⁴	29,900	41,500	34,000	44,000

¹Revised. do. Ditto. -- Zero.

²Estimated data are rounded to no more than three significant digits; may not add to totals shown.

³Table includes data available through January 23, 2015.

⁴In addition to the commodities listed, amethyst, aquamarine, bitumen, secondary copper, diamond, emerald, garnet, ilmenite, refined or remelted lead, lime, manganese, monazite, phosphate rock, rolled-steel products, ruby, rutile, salt, sapphire, soda ash, talc, tourmaline, tungsten, and zircon are produced, but available information is inadequate to make reliable estimates of output.

⁵Reported figure.

⁶Considerably more barite is produced but it is considered to be commercially unusable.

⁷Total natural gas production less flared gas, gas used for fuel, gas used for gas lift, and reinjected gas.

TABLE 2
NIGERIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum	Aluminum Smelter Co. of Nigeria, Ltd. (ALSCON) (United Company RUSAL Plc, 85%)	Smelter at Ikot Abasi	96 ¹
Cement	Ashakacem Plc (Lafarge S.A., 58.61%)	Ashaka	900
Do.	Benue Cement Company Plc (Dangote Industries Ltd.)	Gboko	2,800
Do.	Cement Co. of Northern Nigeria Plc (BUA International Ltd., 50.7%)	Sokoto	500
Do.	Dangote Cement Works Ltd. (Dangote Industries Ltd.)	Ibese	6
Do.	Edo Cement Co. Ltd. (BUA International Ltd., 87%)	Okpella	350
Do.	Lafarge Cement WAPCO Nigeria Ltd. (Lafarge S.A., 59.95%)	Ewekoro	1,320
Do.	do.	Ewekoro II	2,500
Do.	do.	Shagamu	600
Do.	Obajana Cement Plc (Dangote Industries Ltd.)	Obajana	10,250
Do.	United Cement Company of Nigeria Ltd. (Unicem) (Nigeria Cement Holdings BV and Flour Mills of Nigeria Ltd.)	Mfamosing	2,500
Coal	Kogi State government	Ogboyoga Mine	NA
Do.	Zuma 828 Coal Ltd. (ETA-ZUMA Group)	Zuma Mine, near Ankpa	NA
Copper, secondary	Sun & Sand Industries Ltd.	Otta	NA
Iron and steel:			
Iron ore	National Iron Ore Mining Co. Ltd. (Government, 100%)	Itakpe	NA
Steel:			
Crude	African Steel Mills Ltd. (Liberty Group)	Electric arc furnace at Ikorodu	170
Do.	Ajaokuta Steel Co. Ltd. (Government, 100%)	Blast furnace at Ajaokuta	1,350 ¹
Do.	Continental Iron and Steel Co.	Electric arc furnace at Ikeja	60
Do.	Delta Steel Co. Ltd. (Asset Management Company of Nigeria)	Electric arc furnaces at Aladja	1 ²
Do.	Federated Steel Mills Ltd.	Electric arc furnace at Ikeja	140
Do.	Nigerian Spanish Engineering Co.	Electric arc furnace at Kano	100
Do.	Sankyo Steel Mill Company Ltd.	Electric arc furnace at Ikeja	80
Do.	Universal Steel Co.	do.	50
Rolling mills	African Steel Mills Ltd. (Liberty Group)	Ikorodu	100
Do.	Ajaokuta Steel Co. Ltd. (Government, 100%)	Ajaokuta	130 ²
Do.	Delta Steel Co. Ltd.	Aladja	300 ²
Do.	Jos Steel Rolling Co. Ltd. (Zuma Steel West Africa Ltd.)	Jos region	210 ²
Do.	Katsina Steel Rolling Co. Ltd. (Dana Steel Ltd.)	Katsina	207
Do.	Oshogbo Steel Rolling Co. Ltd. (Kura Holdings Ltd.)	Oshogbo	210
Do.	Sunflag Steel (Nigeria) Ltd.	Lagos	120
Natural gas, liquefied	million metric tons Nigeria Liquefied Natural Gas Ltd. [Nigerian National Petroleum Corp. (NNPC), 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 6 at Finima, Bonny Island	21
Niobium (columbium) and tantalum	Artisanal miners	Jos region	NA
Nitrogen, urea	Notore Chemical Industries Ltd.	Onne	500
Petroleum:			
Crude	Nigerian National Petroleum Corp. (NNPC)/Chevron Nigeria Ltd. joint venture (NNPC, 60%, and Chevron Nigeria Ltd., 40%)	Various locations	NA
Do.	Nigerian National Petroleum Corp. (NNPC)/Elf Petroleum Nigeria Ltd. joint venture (NNPC, 60%, and Elf Petroleum Nigeria Ltd., 40%)	do.	NA
Do.	Nigerian National Petroleum Corp. (NNPC)/Mobil Producing Nigeria Unlimited joint venture (NNPC, 60%, and Mobil Producing Nigeria Unlimited, 40%)	do.	NA
Do.	Nigerian National Petroleum Corp. (NNPC)/Nigerian Agip Oil Company Ltd. (NAOC) joint venture (NNPC, 60%; NAOC, 20%; Phillips Oil Company Nigeria Ltd., 20%)	do.	NA
Do.	Nigerian National Petroleum Corp. (NNPC)/Pan Ocean Oil Corp. joint venture (NNPC, 60%, and Pan Ocean Oil Corp., 40%)	Oil Mining Lease 98	NA

See footnotes at end of table.

TABLE 2—Continued
NIGERIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum—Continued:				
Crude—Continued		Nigerian National Petroleum Corp. (NNPC)/Shell Petroleum Development Company of Nigeria (SPDC) joint venture [NNPC, 55%; SPDC, 30%; Total E&P Nigeria Ltd., 10%; Nigerian Agip Oil Company Ltd. (NAOC), 5%]	Various locations	NA
Do.		Nigerian National Petroleum Corp. (NNPC)/Texaco Overseas Petroleum Company of Nigeria Ltd. joint venture (NNPC, 60%; Texaco Overseas Petroleum Company of Nigeria Ltd., 20%; Chevron Nigeria Ltd., 20%)	do.	NA
Do.	million 42-gallon barrels	Star Deep Water Petroleum Ltd. [Chevron Nigeria Ltd., 68.2%, and Nigerian National Petroleum Corp. (NNPC), 15.9%]	Agbami Project	91
Do.		Other Nigerian National Petroleum Corp. (NNPC) joint ventures	do.	NA
Do.	million 42-gallon barrels	Esso Exploration and Production Nigeria Ltd., 56%, and Shell Nigeria Exploration and Production Co., 44%	Erha Project	55
Do.	do.	Shell Nigeria Exploration and Production Co., 55%, and Esso Exploration & Production Nigeria (Deepwater) Ltd., 20%	Bonga Project	73
Do.		Domestic and foreign oil companies engaged in numerous production-sharing contracts, service contracts, or sole risk operations	Niger River Delta and offshore	NA
Refined petroleum products	thousand 42-gallon barrels	Port Harcourt Refining Co. Ltd. (Government, 100%)	New Port Harcourt refinery	55,000
Do.	do.	do.	Old Port Harcourt refinery	22,000
Do.	do.	Warri Refinery and Petrochemicals Co. Ltd. (Government, 100%)	Warri refinery	43,000
Do.	do.	Kaduna Refinery and Petrochemicals Co. Ltd. (Government, 100%)	Kaduna refinery	38,000
Do.	do.	Niger Delta Petroleum Resources Ltd. (Niger Delta Exploration & Production PLC)	Topping plant at the Ogbele oilfield, about 45 kilometers northwest of Port Harcourt	100
Tin		Artisanal miners	Mines in the Jos area	NA

Do., do. Ditto. NA Not available.

¹Under rehabilitation.

²Care-and-maintenance status.