



2010 Minerals Yearbook

ANGOLA

THE MINERAL INDUSTRY OF ANGOLA

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Angola's mineral industry was dominated by diamond and petroleum production. In 2009, Angola accounted for about 11% of the world's total diamond production by volume and for about 13% of the world's total diamond production by value. Other mineral commodities produced in the country included cement, granite, gypsum, marble, and salt. The country's undeveloped mineral resources included beryllium, clay, copper, gold, iron ore, lead, lignite, manganese, mica, nickel, peat, phosphate rock, quartz, silver, tungsten, uranium, vanadium, wolfram, and zinc (Kimberley Process Certification Scheme, 2010; National Private Investment Agency, 2011).

Government Policies and Programs

A new mining code has been in the process of being ratified since 2006. The new code is aimed at regulating the distribution of the revenues that would be generated by diamond producers. The law would require diamond companies to use 50% of their revenues to pay operational costs and the remaining 50% to pay taxes and investors and help the local community. The current law stipulates that mining companies should pay 35% of their profits in taxes to Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), which is a Government-owned diamond company. Also, the new code would require the submittal of environmental impact studies to be evaluated and approved by the Government (Almeida, 2010).

Production

In 2010, crude petroleum production increased by 3.8% to reach 676,000 million barrels (Mbbbl) compared with about 651,000 Mbbbl in 2009. Production data for other mineral commodities included in table 1 were estimated for 2010.

Structure of the Mineral Industry

The Ministerio da Geologia e Minas (MGM) is the Government entity responsible for the negotiation of mineral rights contracts, for enforcing mining laws, and for executing the Government's policy regarding geologic and mining activities. The MGM is also the entity responsible for coordinating efforts regarding Kimberley Process Certification Scheme (KPCS) compliance. The KPCS is an international certification scheme established to prevent trade in conflict diamond. Corpo Especial de Fiscalização y Segurança de Diamantes (CSD) is the Government entity responsible for ensuring the security of Angola's diamonds as they travel to the capital city of Luanda for export from mining operations and buying houses located throughout the country. The CSD reports directly to the President through the *Chefe do Serviço de Informações* [Chief of Information Services]. CSD has administrative, financial, and operational autonomy but works closely with the National Police and Customs. ENDIAMA is responsible for creating partnerships with international

companies prospecting for diamond and is a partner in all diamond ventures. ENDIAMA can also enter into joint ventures with foreign diamond companies operating in the country. Sociedade Nacional de Combustíveis de Angola (Sonangol) is the Government-owned company responsible for petroleum exploration and production. ENDIAMA's subsidiaries include Sociedade de Comercialização de Diamantes de Angola (SODIAM), which is in charge of the marketing, sale, and trade of all diamond produced in Angola and the entity responsible for KPCS compliance; and ENDIAMA *Prospecção e Produção S.A.R.L.*, which oversees all ENDIAMA's mining and prospecting interests. Table 2 is a list of major mineral industry facilities.

Mineral Trade

Angola's exports to the United States were valued at about \$12 billion in 2010 compared with about \$9.3 billion in 2009. Crude petroleum accounted for about \$11.5 billion of these exports; fuel oil, about \$300 million; and gem-quality diamond, about \$132 million. Imports from the United States were valued at about \$1.3 billion in 2010 compared with \$1.4 billion in 2009; these included nearly \$316 million in drilling and oilfield equipment and about \$14.4 million in excavating machinery (U.S. Census Bureau, 2011a, b).

Commodity Review

Metals

Copper.—AP Services and Genius Mineral of Angola held prospecting, exploration, and production licenses for the 10,000-square-kilometer (km²) Mavoio mining region, which is located in Uige Province near the border with the Democratic Republic of the Congo [Congo (Kinshasa)]. Copper exploration in the Mavoio region was expected to begin during the year. Other mineral occurrences within the region included calcite, iron, pyrite, and sulfur (Capitão, 2010).

Gold.—The Government, in association with the state-owned iron ore company Empresa Nacional de Ferro de Angola (FERRANGOL), planned to begin gold exploration in Jamba, Huila Province, by 2012. In June, the Government announced that assessment of the gold deposits was underway to determine the ore grade. The assessment work was expected to be completed by 2011, at which time the Government planned to launch a public tender for the granting of the concession areas (Agencia AngolaPress, 2010e; Martins, 2010).

Iron Ore.—The Government, in association with FERRANGOL, continued with its plans to redevelop the Cassinga iron ore mines, which are located in Jamba, Huila Province. In November, the Government announced its plans to begin exploration for iron ore and manganese by 2013. The Cassinga Mines include the Cassala-Kitungo deposits, which

were estimated during the colonial era to contain reserves of about 600 metric tons (Mt) of iron, of which 100 Mt was proven, and 35 Mt of manganese. The Government was in the process of completing the reconstruction of the Caminhos de Ferro railway (formerly known as the Mocamedes railway). The railway would be used to transport the iron ore from the Cassinga Mines to the Namibe Port (formerly known as the Mocamedes Port). The railway was expected to be completed by 2011 (Agencia AngolaPress, 2010b–d, f).

Industrial Minerals

Cement.—In Angola, cement was produced by two companies, Companhia de Cimento do Lobito S.A. (Secil-Lobito) and Nova Cimangola S.A. (Cimangola). The Cimangola cement plant, which is located in the city of Luanda, had an annual capacity of about 1.2 million metric tons per year (Mt/yr) of cement. The construction of a new mill was underway to increase the production capacity at Cimangola to about 1.8 Mt/yr by 2011. The new mill was expected to produce 600,000 metric tons per year (t/yr) of cement. The Secil-Lobito plant, which is located in the city of Lobito, Benguela Province, had an annual capacity of about 250,000 metric tons (t) of cement. The Secil-Lobito plant was owned by Investimentos e Participações SARL (Secil Angola) of Portugal (51%) and Empresa Nacional de Cimento (ENCIME) (49%), which is a Government-owned investment company. Plans were underway to build a new cement plant at Lobito, which would have a production capacity of about 500,000 t/yr of clinker and about 650,000 t/yr of cement (Agencia AngolaPress, 2010g, 2011b; International Finance Corporation, 2011).

The Palanca Cements S.A. project, which was a joint venture of Camargo Correa Cimentos of Brazil and ESCOM S.A. of Portugal (60%) and Gema Group of Angola (40%), planned to build a new cement plant in Lobito, Benguela Province, at a cost of about \$430 million. The plant, which would have a production capacity of 1.6 Mt/yr, was expected to be completed by 2013 and to generate about 500 jobs (ESCOM S.A., 2010).

Diamond.—Trans Hex Group Ltd. of South Africa held a 33% interest in the Luana project in joint venture with ENDIAMA, which held a 39% interest. Privately owned Angolan firms held the remaining 28% interest. In May, Trans Hex signed a mining contract and took on the general, operational, and financial management of the project, which is located about 80 kilometers northeast of Lucapa in Lunda Norte Province. Luana, which began diamond production in June, produced about 20,510 carats of diamond in 2010. Indicated resources from the west bank of the Luana River were estimated to be about 3 million carats and inferred resources were estimated to be about 10 million carats. The joint-venture partners planned to continue exploration work to delineate diamond resources in the east bank of the Luana River. Trans Hex's Luarica (35%) and Fucauma (32%) projects continued to be on care-and-maintenance status during the year (Thomson Reuters, 2010; Trans Hex Group Ltd., 2011, p. 6, 14).

In December, International Gold Exploration Resources AB (IGE) of Sweden announced that it would not proceed with the Luxinge diamond project because the project did not meet the

expectations established by the earlier bulk sampling results. In June, a diamond exploration contract was signed among IGE (42%), ENDIAMA (18%), and Compesa Angola, Sheffield of Angola, and Syntechron Triade of Angola (10% each). In October, ENDIAMA announced the inauguration of the project, which was expected to produce about 3,000 carats per month during its first phase. The Luxinge project, which is located in Lunda Norte Province, covers an area of about 160 km² and contained estimated resources of about 1.1 million carats of rough diamond (Agencia AngolaPress, 2010a; Empresa Nacional de Diamantes de Angola E.P., 2010; IGE Resources AB, 2010, 2011).

De Beers UK Ltd. of London held a 49% interest in the Lunda Nordeste project in joint venture with ENDIAMA, which held a 51% interest. The joint venture explored for diamond at the Lunda Nordeste and the Dando-Kwanza concessions, which together cover a total area of 6,000 km². The company reported that it had relinquished its diamond exploration activities at the Dando-Kwanza concession because none of the 44 kimberlites discovered in the past 4 years had proved to be economical. The company completed the bulk sampling program of the Mulepe-1 deposits at Lunda Nordeste and 100 carats of diamond were recovered from the deposit for revenue determination purposes. De Beers moved the Mulepe-1 deposit into the investment evaluation phase, which was expected to be completed by the second quarter of 2011. Thereafter, if the project meets the criteria of the De Beers investment committee, the company planned to conduct additional drilling and engineering studies to complete a feasibility study by 2012 (De Beers Group, 2011, p. 14).

Gypsum.—Angola began producing gypsum from its Fábrica de Gesso do Sumbe plant in 2009. The plant had a production capacity of about 17,000 metric tons per month of gypsum, about 10,000 t of which was crushed gypsum to be used in the manufacture of cement, 4,000 t was nonchemical soil additives to be used in the agricultural sector, and 3,000 t was calcined gypsum to be used in the construction sector. The plant was located in Alto Chingo within the municipality of Sumbe in Cuanza Sul Province (Jornal de Angola, 2009).

Mineral Fuels

Natural Gas.—Construction works were underway for the Angola Liquefied Natural Gas (LNG) project, which was a joint venture of Chevron Corp. of the United States (36.4%), Sonangol (22.8%), and BP p.l.c. of the United Kingdom, Eni S.p.A. of Italy, and Total S.A. of France (13.6% each). The joint venture expected to invest about \$10 billion in the construction of the project, which is located in Soyo, Zaire Province. In 2008, Angola LNG Ltd. awarded the contract for the construction of the new LNG plant to California-based Bechtel Corp. Under the terms of the contract, Bechtel was to provide the engineering, procurement, and construction management services for the development of the 5.2-Mt/yr LNG plant. The project would require the construction of a 500-km high-pressure pipeline that would deliver gas to the plant from offshore blocks. The plant was expected to be completed by 2012 (Angola LNG, 2010; Angola-Today, 2011; Bechtel Corp., 2011).

Petroleum.—Angola was a member of the Organization of the Petroleum Exporting Countries. The country produced

petroleum from both onshore and offshore deposits, including offshore the enclave of Cabinda. International petroleum companies operating in Angola included BP, Chevron, Eni, Exxon Mobil Corp. of the United States, and Total (U.S. Department of the State, 2011).

Angola had one petroleum refinery, which produced about 40,000 barrels per day (bbl/d). Construction works were underway at the Lobito refinery, which was located about 10 kilometers (km) north of Lobito City, Benguela Province. In 2008, Sonangol had awarded the contract for the construction of the new refinery to Texas-based KBR Inc. The Lobito refinery was expected to be completed by 2014 and to produce 115,000-bbl/d during its first phase of operation and 200,000-bbl/d by 2015, at which time it was expected to reach nameplate capacity (Agencia AngolaPress, 2011a).

Outlook

Despite the global financial crisis that affected the country's economy in 2008 and 2009, Angola is expected to rank 15th in terms of its forecasted 7.1% GDP increase among the world's fastest growing economies in 2011 (International Monetary Fund, 2010). Government revenues are likely to continue to be led by the diamond and oil sectors. The Government's plans to establish a new mining code, and the required submittal of environmental impact studies suggest that the country is on its way to attract foreign investments in the diamond sector and also for the mineral sector to contribute to the development of local communities. In the longer run, new projects in the nonfuel minerals sector, such as the redevelopment of the Cassinga iron ore mine, the possibility of redeveloping the country's copper deposits, and the possibility of developing new gold deposits, are likely to add significantly to such growth. The country's dilapidated infrastructure will continue to present challenges to investors in the short run. Plans to increase capacity at the existing cement and gypsum plants, to increase the country's installed electricity capacity, and to rehabilitate the country's infrastructure (including ports, railways, and roads) are all likely to attract foreign direct investment in the mineral sector and to increase interest in nonfuel mineral prospecting.

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

Commodity		2006	2007	2008	2009	2010 ^c
INDUSTRIAL MINERALS						
Cement:						
Hydraulic	thousand metric tons	1,373 ³	1,400	1,780	1,800	1,500
Clinker	do.	500	500	500	500	500
Diamond ^{4,5}	thousand carats	9,175 ³	9,702 ³	8,907 ³	13,828 ^{r,3}	13,000
Granite	cubic meters	35,000 ³	46,000 ³	50,000	50,000	50,000
Gypsum	metric tons	--	--	--	120,000	200,000
Marble	cubic meters	100	100	100	100	100
Salt	metric tons	35,000 ³	35,000	35,000	35,000	45,000
MINERAL FUELS AND RELATED MATERIALS						
Petroleum:						
Crude	thousand 42-gallon barrels	513,560 ⁶	628,900 ⁶	684,375 ⁶	651,000 ^{r,6}	676,000 ⁶
Refinery products ⁷	do.	12,600	13,000	13,000	15,000	15,000

^rRevised. do. Ditto. -- Zero.

¹Estimated data are rounded to no more than three significant digits.

²Table includes data available through July 5, 2011.

³Reported figure.

⁴Production was approximately 90% gem quality and 10% industrial grade.

⁵Source: Kimberley Process Certification Scheme.

⁶Source: BP p.l.c.

⁷Includes asphalt and bitumen.

TABLE 2
ANGOLA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement		Companhia de Cimento do Lobito S.A. (TecnoSecil Investimentos e Participações SARL, 51%, and Government, 49%)	Lobito, Benguela Province	250,000.
Do.		Nova Cimangola S.A. (Government, 89%, and private investors, 11%)	Luanda	1,200,000; 540,000 clinker.
Diamond	thousand carats	Associação em Participação Chitotolo [Empresa Nacional de Diamantes de Angola (ENDIAMA), 45%; ITM Mining Ltd., 40%; LUMANHE Lda., 15%]	Chitotolo alluvial mine, 95 kilometers southeast of Dundo	28.
Do.	do.	Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 51%; New Millenium Resources Ltd., 34%; Mombo Lda., 15%	Rio Lapi Mine, 45 kilometers northeast of Saurimo, Lunda Sul Province	240.
Do.	do.	Luó-Sociedade Mineira do Camatchia-Camagico [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA) and Espirito Santo Group]	Lunda Norte Province	18.
Do.	do.	Sociedade de Desenvolvimento Mineiro de Angola S.A.R.L. (SDM) [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 50%, and Odebrecht Mining Services Inc., 50%]	Luzamba alluvial mine, Cuango Valley, Lunda Norte	70.
Do.	do.	Sociedade Mineira de Catoca Lda. [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 32.8%; ALROSA S.A., 32.8%; Daumonty Financing Co. B.V., 18%; Odebrecht Mining Services Inc., 16.4%]	Catoca kimberlite mine, 36 kilometers south of Saurimo, Lunda Sul Province	6,500.
Do.	do.	Sociedade Mineira do Cuango [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 41%; ITM Mining Ltd., 38%; LUMANHE Lda., 21%]	Cuango alluvial mine, Cuango Valley, Lunda Norte Province	31.
Do.	do.	Sociedade Mineira do Lucapa Ltd. [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 51%, and Sociedade Portuguesa de Empreendimentos, 49%]	Mufuto Norte alluvial mine	25.
Do.	do.	Sociedade Mineira do Lucapa Ltd. (SME) [Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 51%, and Sociedade Portuguesa de Empreendimentos, 49%]; LUMANHE Lda.; ITM Mining Ltd.	Calonda alluvial mine, Lucapa, Lunda Norte Province	27.
Do.	do.	Trans Hex Group Ltd., 35%, and Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 40%	Fucauma Mine, northeastern Angola	120.
Do.	do.	Trans Hex Group Ltd., 32%, and Empresa Nacional de Diamantes de Angola E.P. (ENDIAMA), 40%	Luarica Mine, northeastern Angola	90.
Gypsum	thousand metric tons	Fábrica de Gesso do Sumbe	Gypsum plant, city of Sumbe, Cuanza Sul Province	200.
Petroleum	thousand 42-gallon barrels per day	AP Moller-Maersk A/S, 50%; Occidental Petroleum Corp., 30%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%	Block 8, offshore	NA.
Do.	do.	AP Moller-Maersk A/S, 50%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%; Devon Energy Corp., 15%; Odebrecht S.A., 15%	Block 16, offshore	NA.
Do.	do.	AP Moller-Maersk A/S, 50%; Occidental Petroleum Corp., 30%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%	Block 23, offshore	NA.
Do.	do.	BP p.l.c., 50%, and Sonangol-Sinopec International, 50%	Block 18, offshore	240.
Do.	do.	BP p.l.c., 26.67%; Exxon Mobil Corp., 25%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%; Statoil ASA, 13.33%; Marathon Oil Corp., 10%; Total S.A., 5%	Block 31, offshore	150.
Do.	do.	Canadian Natural Resources, 100%	Block 4, Kiame field, offshore	NA.

See footnotes at end of table.

TABLE 2—Continued
ANGOLA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum— Continued	thousand 42-gallon barrels per day	Chevron Corp., 31%; Eni S.p.A., 20%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%; Total S.A., 20%; Galp Energia, 9%	Block 14, offshore	100.
Do.	do.	China Petroleum and Chemical Corp., 40%; Petróleo Brasileiro S.A., 30%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%; Falcon Oil Holding Angola S.A., 5%; Gema Group Angola, 5%	Block 18/06, offshore	NA.
Do.	do.	Eni S.p.A., 35%; Sonangol-Sinopec International, 20%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 15%; Total S.A., 15%; Falcon Oil Holding Angola S.A., 5%; Petróleo Brasileiro S.A., 5%; Statoil ASA, 5%	Block 15/06, offshore	NA.
Do.	do.	Eni S.p.A., 50%; Total S.A., 25%; Galp Energia, 10%; Ina-Industrija Nafta, 7.5%	Block 1, offshore	NA.
Do.	do.	Exxon Mobil Corp., 45%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%; Total S.A., 15%; Falcon Oil Holding Angola S.A., 10%; Galp Energia, 5%; Naphta-Israel Petroleum Corp. Ltd., 5%	Block 33, offshore	NA.
Do.	do.	Exxon Mobil Corp., 40%; BP p.l.c., 26.67%; Eni S.p.A., 20%; Statoil ASA, 13.33%	Block 15, offshore	700.
Do.	do.	Petróleo Brasileiro S.A., 80%, and Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%	Block 26, offshore	NA.
Do.	do.	Petróleos Brasileiros S.A., 40%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%; InterOil Exploration & Production ASA, 20%; Falcon Oil Holding Angola S.A., 10%; Initial Oil, 10%	Block 6, offshore	NA.
Do.	do.	Roc Oil Co. Ltd., 60%; Force Petroleum Group Ltd., 20%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%	Cabinda South, onshore	NA.
Do.	do.	Sociedade Nacional de Combustíveis de Angola (Sonangol), 100%	Area A (Kwanza), onshore	NA.
Do.	do.	do.	Block 3, Canuka field, offshore	NA.
Do.	do.	do.	Block 4, Kiabo field, offshore	NA.
Do.	do.	Sociedade Nacional de Combustíveis de Angola (Sonangol), 83.6%, and Chevron Corp., 16.4%	Area B (Soyo), onshore	NA.
Do.	do.	Sociedade Nacional de Combustíveis de Angola (Sonangol), 41%; Chevron Corp., 39.2%; Total S.A., 10%; Eni S.p.A., 9.8%	Block 0, offshore Cabinda	340.
Do.	do.	Sociedade Nacional de Combustíveis de Angola (Sonangol), 52.5%; Petróleo Brasileiro S.A., 27.5%; Chevron Corp., 20%	Block 2/85, offshore	NA.
Do.	do.	Sociedade Nacional de Combustíveis de Angola (Sonangol), 70%, and Sociedade Petrolífera Angolana, 30%	Block 2/05, offshore	NA.
Do.	do.	Sociedade Nacional de Combustíveis de Angola (Sonangol), 90%, and Sociedade Petrolífera Angolana, 15%	Block 3/05, Bufalo, Impala, Impala SE Pacassa, and Palanca fields, offshore	NA.
Do.	do.	Sociedade Nacional de Combustíveis de Angola (Sonangol), 51%; Soco Cabinda Lda., 17%; Teikoku Oil Co., 17%; Angola Consulting Resources, 15%	Cabinda North, onshore	NA.

See footnotes at end of table.

TABLE 2—Continued
ANGOLA: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum— Continued	thousand 42-gallon barrels per day	Sociedade Nacional de Combustíveis de Angola (Sonangol), 50%; Statoil ASA, 20%; Angola Consulting Resources, 15%; Sociedade Petrolífera Angolana, 15%	Block 4/05, Gimboa field, offshore	60.
Do.	do.	Statoil ASA, 50%; Petróleo Brasileiro S.A., 30%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%	Block 34, offshore	NA.
Do.	do.	Total S.A., 50%; Eni S.p.A., 15%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 6.25%	Block 3/91, Oombo field, offshore	NA.
Do.	do.	Total S.A., 50%; Eni S.p.A., 15%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 6.25%; Ajoco Exploration Company Ltd., 12.5%; Ina-Industrija Nafta, 5%	Block 3/85, Cobo and Pambe fields, offshore	NA.
Do.	do.	Total S.A., 30%; Marathon Oil Corp., 30%; Sociedade de Combustíveis de Angola (Sonangol), 20%; Exxon Mobil Corp., 15%; Galp Energia, 5%	Block 32, offshore	NA.
Do.	do.	Total S.A., 30%; Sociedade Nacional de Combustíveis de Angola (Sonangol) 30%; Sonangol-Sinopec International, 27.5%; Angola Consulting Resources, 5%; Falcon Oil Holding Angola, S.A., 5%; Partex (Angola) Corp., 2.5%	Block 17/06, offshore	NA.
Do.	do.	Total S.A., 40%; Statoil ASA, 23.33%; Exxon Mobil Corp., 20%; BP p.l.c., 16.67%	Block 17, offshore	700.
Do.	do.	Tullow Oil plc., 50%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%; Prodoil SARL, 20%; Force Petroleum Group Ltd., 10%	Block 1/06, offshore	NA.
Do.	do.	Vaalco Energy Inc., 40%; InterOil Exploration & Production ASA, 40%; Sociedade Nacional de Combustíveis de Angola (Sonangol), 20%	Block 5, offshore	NA.
Petroleum refinery products	do.	Fina Petróleos de Angola (Total S.A., 64.1%, and Government, 34%)	Refinery	14,600.
Steel		Chung Fong Holding Co., 51%, and Government, 49%	Relaunching of steel plant (under development)	36,500.
Do.		Grupo Ferpinta	Two pipe mills at Viana, 30 kilometers east of Luanda	6,000.

Do., do. Ditto. NA Not available.