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MOROCCO AND WESTERN SAHARA

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The Mineral Industries of Morocco and Western Sahara

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MOROCCO

In 2013, Morocco was the world's leading exporter of phosphate in all forms and the world's third-ranked producer of phosphate rock after China and the United States. The country was responsible for 16% of the world's production of arsenic; of phosphate rock, 12%; barite, 10%; cobalt, about 2%; and fluorspar, 1%. Morocco also produced a wide range of minerals that included cement, clays, copper, crude oil, feldspar, iron ore, lead, natural gas, pyrophyllite, salt, silver, talc, and zinc (table 1; Edelstein, 2014; Jasinski, 2014; Miller, 2014a, b; Shedd, 2014).

Morocco borders the Atlantic Ocean and the Mediterranean Sea in northwest Africa; its metallogenic provinces include, from the south of the country to the north, the Anti-Atlas, the High Atlas, the Middle Atlas, and the Rif. The Anti-Atlas province contains occurrences of manganese, precious metals (gold and silver), and strategic metals (cobalt, tin, titanium, and tungsten). The Middle and High Atlas provinces (the Atlas Belt) contain occurrences of barite, copper, iron, lead, manganese, and zinc. The Rif province contains occurrences of base metals and industrial minerals (Office National des Hydrocarbures et des Mines, 2014c).

In 2013, the pace of mineral sector development activities, which included exploration and production, took place at faster and higher levels than those in previous years owing to a favorable investment environment, political stability, and security compared with other countries in North Africa. The Government became involved with a record number of international mining and energy companies in both conventional and unconventional offshore and onshore crude oil and natural gas concessions; mining partnerships; and construction of solar and wind energy powerplants (Office National des Hydrocarbures et des Mines, 2014a, p. 10–11).

Minerals in the National Economy

Morocco's economy grew, in real terms, at a rate of 4.4% in 2013 compared with a rate of 2.7% in 2012. The estimated value of the energy and industry sector in 2012 (the latest year for which data were available) was about $31.3 billion, which was 30.2% of the country's nominal gross domestic product (GDP) of $103.8 billion (International Monetary Fund, 2014, p. 27; MEED, 2014, p. 115).

The diversity and total value of the exploited minerals enabled Morocco's mineral sector to play an important role in the national economy by contributing 10% of the country's GDP and by providing about 30% of total exports. Morocco's mineral industry was the leading foreign exchange earning sector for the Government, and the phosphate rock industry, which employed about 41,000 people in 2013, continued to be a major source of export earnings. The contribution of the industrial sector to the country's overall economic growth decreased by 0.3% in 2013 compared with that of 2012. The decrease was attributed to lower mineral commodity prices in the world market (Manar and Mankoub, 2014, p. 3; Office National des Hydrocarbures et des Mines, 2014a, p. 8).

The flow of foreign direct investment (FDI) to Morocco increased by 23% to $3.36 billion in 2013 from $2.73 billion in 2012, and the flow of FDI out of Morocco decreased by 18% to $331 million from $406 million. Seventy-three percent of the FDI inflows went to greenfield projects in 2013 compared with 51% in 2012. The value of FDI stock in Morocco at yearend 2013 was $50.3 billion compared with $8.8 billion at yearend 2000 (United Nations Conference on Trade and Development, 2014, p. 37, 205, 209, 218).

Government Policies and Programs

In July, the Government approved a new national strategy for development of the mining industry that included the drafting of a new mining law; the proposed law was submitted to the Parliament for review and approval, but as of yearend 2013 had not been approved. The new mining law would overhaul the Mining Code Bill No. 1–73–412 of August 13, 1973, and was intended to attract investors, boost exports, and help ensure that companies respect the Government's labor and environmental laws. The new national strategy was intended to triple revenues from the mining industry by 2025, increase the value of investment in mineral exploration by 10 times, and double the number of direct jobs in the mining sector to 30,000. The Government-established targets for the mining industry (other than phosphate rock and phosphate-based fertilizers and products) included increasing the value of the industry's economic activity to more than $2 billion, increasing investment in exploration to $500 million, and creating 15,000 new job opportunities (Ministère de l'Energie, des Mines, de l'Eau et de l'Environnement, 2013, p. 3; 2014a; OCP Group, 2014, p. 10).

Phosphate rock mining and the phosphate fertilizer manufacturing sector accounted for about 4.3% of the country's GDP in 2013. The Government was planning to increase Morocco's share of the world's phosphate commodity market to 40% from 28% by focusing on increasing its exports to other countries in Africa and to Brazil and India (OCP Group, 2014, p. 10).

The Government agency responsible for oversight of the energy and mineral industries is the Ministère de l'Energie, des Mines, de l'Eau et de l'Environnement (MEM) [Ministry of Energy, Mines, Water, and the Environment]. Under the MEM, a wide range of central and regional agencies worked on managing activities related to electricity consumption and production, geologic studies, hydrocarbons exploration and production, mining, and development of renewable energy.

The Office National des Hydrocarbures et des Mines [National Office of Hydrocarbons and Mines] (ONHYM) is the primary agency responsible for the exploration and promotion of the country's mineral resources. The ONHYM was created in 2005 by the merger of the Bureau de Recherches et de Participations Minières [Office of Research and Mining Investments] and the Office National de Recherches et d'Exploitations [Office of Research and Development]. All minerals are the property of the Government, which issues, through ONHYM, permits and licenses for the exploration and exploitation of mineral resources. In 2013, mining legislation continued to be based on the Mining Code Bill No. 1–73–412 of August 13, 1973, and is enforced through Executive orders and the Directorate of Mines. Exploration permits are awarded for an initial 3-year period for an area that covers up to 16 square kilometers (km^2); these permits are renewable for 4 additional years. Exploitation permits are awarded for 4-year periods and are renewable for 12 years in 4-year increments. The Government provides incentives for mining companies that include tax exemptions on imported equipment for investments that exceed $25 million and a reduced tax rate of 17.5% for companies that export their output and for companies that supply ores to mineral processing and beneficiation companies. The Government also contributes 5% of the project value to mining projects that invest more than $25 million. The Government contribution goes to infrastructure development, such as building roads and supplying electricity and water to the project area (Office National des Hydrocarbures et des Mines, 2014b, d).

The Office National de Recherches et d'Exploitations Pétrolières (ONAREP) [Office of Research and Petroleum Exploitation] is responsible for overseeing the energy sector. The Government promotes investment in the hydrocarbon sector by offering fiscal incentives that allow international oil and gas companies to acquire up to a 75% share of production in return for investing a portion of their profits in further exploration in the country's open areas onshore and offshore. The royalty on crude oil is 10% and that on natural gas is 5%, and a corporate tax holiday for 10 years is given for the discovery of crude oil and for natural gas discoveries (Office National des Hydrocarbures et des Mines, 2014d; PetroMaroc Corp. plc, 2014, p. 10).

Production

Phosphate rock was Morocco's most important mineral commodity in terms of the value and volume of production and accounted for most of the value of the country's mining output in 2013. Notable increases in the quantity of mineral commodity production in 2013 compared with that of 2012 included that of phosphate fertilizer (64%), crude oil (15%), phosphoric acid (13%), silver and mined lead (12% each), and cobalt metal (3%). Nickel output decreased about (39%), salt (33%), fuller's earth (28%), copper in concentrate gross weight (21%), zinc in concentrate gross weight (10%), and cement (6%). Refined petroleum products output decreased by 11%, on average, in 2013 compared with that of 2012 (table 1).

Structure of the Mineral Industry

The Office Chérifien des Phosphates [Office of Moroccan Phosphates] (OCP), which is also known as OCP Group, was responsible for phosphate rock and phosphate-based fertilizer production in Morocco. OCP, which was the country's sole Government-owned producer of phosphate rock, exported most of its output and used the revenues to help the Government reduce the country's trade deficit (OCP Group, 2014, p. 10).

Managem S.A., also known as Groupe Managem, was a publicly listed company that produced such base metals as cobalt, copper, lead, and zinc; precious metals, such as gold and silver; and industrial minerals, such as arsenic, fluorspar, and sodium sulfate. In addition to mining, Managem conducted mineral exploration, marketing, processing, and services through its subsidiaries. Managem was the leading metal-mining company in Morocco. It operated mining development projects in Morocco and some other African countries and employed more than 8,000 people in 2013 (Managem S.A., 2014e, p. 16–20).

Although Morocco had a long history of mining, an established infrastructure, and a low sovereign risk, its mineral resources were relatively unexplored compared with many other countries in Africa. By the end of 2013, 42% of the country's total area had undergone geophysical mapping, 35% geologic mapping, and 8% geochemical mapping. The ONHYM had several mining projects ongoing, including 66 drilling programs at Aghracha, Lahjeyra, Laknouk, and Twihinate in Awsered Province; Jabal Lahouanit in Bouarfa Province; Mfis in Errachidia Province; and Iraouene-Mouzared in Tinghir Province. In February, the ONHYM approved a partnership agreement with Maya Gold and Silver Inc. of Canada for the development and exploitation of the Boumadine polymetallic deposit, which is located in the Errachidia Province (Office National des Hydrocarbures et des Mines, 2014a).

In April, the ONHYM approved an exploration agreement with Pharm Mining Inc. of Canada for gold exploration and development of the Tichka East sector property, which is located in Al Haouz, Chichaoua, and Taroudant Provinces. The ONHYM was working with Kasbah Resources Ltd. of Australia on the development of tin resources at the Achmmach tin mine; with Metalex Ventures Ltd. of Canada, which was exploring for diamond and gold in southern Morocco; and with Tolsa Group of Spain, which was exploring for bentonite in northern Morocco (Office National des Hydrocarbures et des Mines, 2014a).

In 2013, the ONHYM conducted 44 exploration studies throughout the country; 28 were ONHYM projects and 16 were carried out in partnership with local and international mining companies. The ONHYM studies included 11 precious metals studies, 9 base metals and energy substances studies, and 6 industrial minerals studies (Office National des Hydrocarbures et des Mines, 2014a, p. 27).

Artisanal mining has been practiced for many years in Morocco, especially in the Tafilalet and Figuig region near Meknes. Artisanal mining for barite, lead, and zinc ores is legal within the Central d'Achat et de Développement de la Région Minière du Tafilalet and Figuig (CADETAF), and mined products were sold to local collection centers, which

were equipped with chemical analysis, storage, and weighing facilities. The Government took steps to support artisanal mining at CADETAF by improving working conditions and increasing productivity and safety (Ministère de l'Energie, des Mines, de l'Eau et de l'Environnement, 2014b).

Mineral Trade

In 2013, Morocco's total exports increased by 3% to about $21.9 billion from $21.3 billion in 2012. Similarly, the value of imports increased by 4% to $44.9 billion from $43.3 billion in 2012. In terms of value of trade, the European Union (EU) (54%), the United States (6.4%), China (5.2%), and Saudi Arabia (4.2%) were Morocco's major trade partners in 2013. Sixty-one percent of Morocco's exports went to the EU, 5.9% to Brazil, 4.2% to the United States, 3.7% to India, and 1.9% to Turkey (European Commission, The, 2014, p. 9; United Nations, 2014, p. 7).

In 2013, Morocco accounted for 28% of world exports of phosphate rock and phosphate-based products. In 2012 (the latest year for which data were available), exports of phosphate fertilizers and chemicals were valued at $2.0 billion; phosphoric acid exports, $1.6 billion; and phosphate rock exports, $1.5 billion. Morocco was Africa's second-ranked hydrocarbon importer, importing 99% of its crude oil and 91% of its natural gas. The value of petroleum products imports was about $13 billion in 2013, which was 20% of the country's total imports. Sulfur imports, which were used to manufacture phosphate fertilizer, increased in value to $827 million in 2012 (the latest year for which comprehensive information was available) from $822 million in 2011 and $366 million in 2010 (United Nations International Merchandise Trade Statistics, 2014).

U.S. exports to Morocco were valued at about $2.5 billion in 2013 compared with about $2.2 billion in 2012. The major exports included, in descending order of value, fuel oil ($856 million), coal and other fuels ($208 million), petroleum products ($72 million), metallurgical-grade coal ($54 million), natural gas liquids ($43 million), steelmaking materials (about $28 million), nonmetallic minerals ($17 million), and iron and steel mill products ($15 million). U.S. imports from Morocco were valued at about $978 million in 2013 compared with $932 million in 2012. This total included, in descending order of value, chemical fertilizers ($255 million), sulfur and nonmetallic minerals ($232 million), semiconductors (about $72 million), and inorganic chemicals (about $3 million) (U.S. Census Bureau, 2014a, b).

Commodity Review

Metals

Cobalt.—Compagnie de Tifnout Tighanimine (a subsidiary of Managem) mined cobalt ore at the Bou-Azzer Mine. The Bou-Azzer underground mine is located 35 kilometers (km) south of Ouarzazate in southern Morocco within the central Anti-Atlas Mountain range. Cobalt production increased slightly (by 3%) in 2013 in terms of metal content compared with that of 2012, which in turn was a decrease of 23.5% compared with that of 2011 (table 1). The mine had the capacity to produce 2,000 metric tons (t) of cobalt metal and employed 1,600 people (Managem S.A., 2014b).

Gold.—Morocco had one gold-producing mine in 2013. The Akka Gold Mine was operated by Managem and had a production capacity of 725 kilograms per year (kg/yr). The mine is located 280 km southwest of Agadir at Iourim in the Anti-Atlas Mountain region (Managem S.A., 2014a). In 2013, Maya Gold held both exploration and exploitation licenses for its 80-km^2 Amizmiz project in southwestern Marrakech Province where it was exploring for high-grade gold deposits. Maya Gold confirmed that the property has polymetallic gold-bearing veins in multiple zones. The drilling at Amizmiz was focused on the AZ and the TRN zones in order to better define the information in the National Instrument (NI) 43–101 technical report, which was filed by Maya Gold with the Canadian Security Administrators in 2011 and stated that the estimated inferred resource was 819,800 t grading 12.98 grams per metric ton (g/t) gold. The NI 43–101 technical report also stated that the estimated inferred resource did not demonstrate economic viability (Maya Gold and Silver Inc., 2014b).

Silver.—In 2013, silver production increased by 12% to 194,077 kilograms (kg) from 173,400 kg in 2012, which ranked Morocco as the world's 16th-ranked producer of silver, according to Silver Institute statistics (Silver Institute, 2014). Silver occurs both as the primary metal in ore deposits and as a byproduct in cobalt, copper, lead, and zinc deposits. Silver was produced at the Imiter Mine. The mine is located in the Anti-Atlas region and was owned by Société Metallurgique d'Imiter. The Imiter Mine, which was the 14th largest silver mine in the world in terms of output, produced 194,000 kg of silver in 2013 (table 2; Mining Magazine, 2013, p. 26; Managem S.A., 2014c).

Maya Gold held exploration and exploitation licenses for five properties in Morocco, among which were the Boumadine Mine and the Zgounder Mine. The Boumadine Mine, which is located in western Morocco near Tinejdad, had an estimated historical (1992) polymetallic reserve of 4 million metric tons (Mt) grading 3.8% zinc, 1.5% lead, 200 g/t silver, and 3.5 g/t gold. In 2013, a new company, Zgounder Millennium Silver Mining, was created as a joint venture of Maya Gold (85% interest) and ONHYM (15% interest) to explore and develop the Boumadine deposit, which was estimated to contain 240,000 t of recoverable material grading 3.25 g/t gold and 192 g/t silver. The Zgounder Mine, which is located 150 km south of Marrakech, had an estimated historical (2004) reserve of 582,000 t with an average grade of 361 g/t silver. The mine also had an estimated additional 500,000 t of tailings at an average grade of 125 g/t silver. Zgounder Millennium Silver Mining also operated the Zgounder Mine, which was expected to re-open in 2014 and was expected to produce about 2,380 kg/yr of silver concentrate (Chadwick, 2013; Maya Gold and Silver Inc., 2014a, c, d).

Tin.—In 2013, Kasbah continued working on the definitive feasibility study of the Achmmach tin project, which was located in the El Hajeb region in the Central Hercynian Massif, about 140 km southeast of Rabat. The project covered a 32-km^2 area. Kasbah's strategy was to increase the size of the deposit's identified resource, to prove the economic viability of the project, and to advance Achmmach to a development decision.

Kasbah owned 100% of the exploration and exploitation rights to Achmmach. In December, Kasbah signed a shareholder agreement with Toyota Tsusho Corp. (TTC) and Nittetsu Mining Co. Ltd. (NMC), both of Japan, for the development of the Achmmach tin mine. Under the new agreement, Kasbah's share in the mine was reduced to 75% whereas TTC's share was 20% and NMC's share was 5%. The company was expected to complete a prefeasibility study, definitive feasibility study, and maiden ore reserves estimates in March 2014. Kasbah was preparing a financing plan for the project; the plan was expected to be completed by the third quarter of 2014. Kasbah updated the measured resource at Achmmach to 1.6 Mt from 500,000 t and the total resource to 14.6 Mt of ore grading 0.85% tin for 124,100 t of contained tin. According to the company, the Achmmach project represented one of the top undeveloped tin deposits in the world and was regarded as the potential leading tin mine in Africa in terms of the volume of production (Kasbah Resources Ltd., 2014a, c, p. 2).

The Bou El Jaj tin project (BLJ) is located about 15 km from the Achmmach tin project and is the southernmost extension of a mineralized corridor that is about 2.5 to 3 km wide and nearly 12 km long in strike. BLJ, which was 100% owned by Kasbah, had a strong surface geochemical signature for tin with outcropping tin mineralization evident along 2,100 meters (m) of strike length. A 5,000-m core-drilling program was initiated in late 2012. No updates were available on the project in 2013 (Kasbah Resources Ltd., 2014b).

Industrial Minerals

Barite.—Morocco's production of barite nearly doubled during the past 5 years. Barite production increased to about 1.1 Mt in 2013 from 1.0 Mt in 2012 and about 0.6 Mt in 2009. Broychim S.A.R.L. was one of the main producers and exporters of barite products in the country. Broychim exported barite to the United States and to countries in Africa, Europe, and the Middle East. The volume of Broychim's exports had increased steadily to 400,000 t in 2013 from 160,000 t in 2009. Other barite producers in Morocco included CADETAF, Compagnie Marocaine des Barytes S.A., Société Nord-Africaine de Recherches et d'Exploitation des Mines d'Argana, and Société Nouvelle Union des Metaux Maroc (tables 1 and 2; Broychim S.A.R.L., 2014).

Cement.—In 2013, cement production decreased by 6% to 14.9 Mt from a revised 15.9 Mt in 2012. Morocco and Western Sahara's cement production capacity increased to more than 24 million metric tons per year (Mt/yr). The capacity included 1.9 Mt/yr of grinding capacity, 0.5 Mt of which is located in Laayoune in the Western Sahara. The major producers of cement in Morocco included Lafarge Maroc S.A., which was 50% owned by Lafarge Group of France (and the country's top producer of cement) and held 38% of the country's total capacity; Holcim Maroc S.A., which was majority owned (61%) by Holcim Ltd. of Switzerland and held 22% of total capacity; Ciments du Maroc S.A., which was majority owned (58.3%) by Italcementi Group of Italy and held about 20% of total cement production capacity; and Ciments de L'Atlas, which held 13% of total capacity (Edwards, 2014).

Fluorspar.—Société Anonyme d'Entreprises Minières produced acid-grade fluorite (CaF_2) from El Hammam Mine, which was the only fluorite mine in Morocco and was located 63 km south of Meknes in the Middle Atlas region of Morocco. In 2013, the company had the capacity to produce 100,000 t/yr of fluorspar and employed 500 people. Fluorite mineralization at the Djebel El Hammam, where the mine is located, occurs in calcium-bearing silicate rocks that include concentrations of copper sufide, lead sulfide, and zinc sulfide. The fluorite veins, which included the El Hammam vein, the Bergamou vein, and the Gouaida vein, are hosted in the series of sandy shales, mudstones, and limestones of Paleozoic metamorphosed levels (Managem S.A., 2014c, d; Mindat.org, 2014).

Phosphate Rock.—In 2013, the areas of Morocco and Western Sahara combined held more than 50 billion metric tons (Gt) of phosphate rock reserves, which was about 75% of global phosphate reserves. OCP, which employed 23,000 people, had committed to investing up to $5 billion during the next decade to develop the infrastructure for new mines and wash plants and to shift the industry more toward beneficiation and fertilizer production (OCP Group, 2014).

In 2013, OCP produced 26.4 Mt of phosphate rock, 4.4 Mt of phosphoric acid (in terms of P_2O_5), and 7.4 Mt of phosphate-based fertilizers, including diammonium phosphate, monoammonium phosphate, and triple superphosphate. The company's capacity in 2013 was 32.2 Mt/yr of phosphate rock, 4.8 Mt/yr (in terms of P_2O_5) of phosphate-based fertilizers, and 4.7 Mt/yr of phosphoric acid. The company's share in the trade market of phosphate rock was 50% for phosphoric acid, 40% phosphate rock, and 21% for phosphate-based fertilizers. OCP, which was the world's leading exporter of phosphate rock, announced plans to increase its production of phosphate rock to 50 Mt/yr by 2020. The company was responsible for the production and sale of phosphate rock and manufactured phosphoric products at the Benguerir, the Khouribga, and the Youssoufia Mines in central Morocco and the Bou Craa Mine in Western Sahara (OCP Group, 2014, p. 11).

In 2013, OCP launched the Jorf Phosphate Hub, which was a $1.2 billion investment at Jorf Lasfar, which is located about 125 km southwest of Casablanca, and tested the slurry pipeline that would transport phosphate rock from the Khouribga phosphate mine to Jorf Lasfar where it would be processed and later exported. A 300-acre site was set aside for phosphate processing plants, factories, storage warehouses, and new harbor facilities to export phosphate-based products (OCP Group, 2014, p. 15).

In February, OCP signed an agreement with the Islamic Development Bank of Saudi Arabia to fund the extension and rehabilitation of Jarf Lasfar Port, and, in September, the company received a $271 million loan from the KfW Development Bank of Germany to finance the OCP water management plan. DuPont OCP Operations Consulting was a joint venture established in May by OCP and E.I. du Pont de Nemours & Co. of the United States to provide OCP mines and plants industrial consultation and service training for better performance, safety, and sustainable development. OCP acquired a 50% interest in Bunge Ltd. of Brazil. The new company, Bunge Maroc Phosphore, would increase the

diammonium phosphate production capacity at Jarf Lasfar to 7 Mt/yr by building two more fertilizer granulation units (OCP Group, 2014, p. 28).

OCP and Potash Corp. of Canada signed a definitive agreement that would enable Potash Corp. to buy OCP's full range of finished phosphate products to meet the needs of its customers in Canada and the United States. The two companies also signed a memorandum of understanding regarding the supply of ammonia to be provided by Potash Corp. to meet OCPs growing ammonia requirements, in particular for its new fertilizer manufacturing complex at Jorf Lasfar (OCP Group, 2014).

OCP and Fertilizantes Heringer S.A. of Brazil signed an agreement that would allow OCP to acquire about 10% of Heringer's shares through investment. This transaction would enable Heringer to expand its fertilizer mixing capacity in its main markets. The two companies also signed an agreement for the long-term supply of phosphate products, which would start after the finalization of the investment (OCP Group, 2014, p. 28).

Mineral Fuels and Other Sources of Energy

In 2013, the Government awarded a total of 52 onshore exploration permits (13 of which were awarded to ONHYM), 90 offshore permits, 4 onshore prospecting zones, and 2 offshore prospecting zones. The Government licensed 12 exploitation concessions, 2 of which were licensed to ONHYM. The combined area for these permits was more than 394 km^2. The permit holders of onshore permits included such companies as Longreach Oil Ltd. of Australia; East West Petroleum Corp., Petromaroc Corp. plc, and Vermillion Energy Inc. of Canada; Circle Oil Maroc Ltd. of Ireland; Repsol Exploration Atlas S.A. of Spain; Cabre Maroc Ltd. (a subsidiary of Gulfsands Plc.) and San Leon Energy Plc of the United Kingdom; and Anadarko Petroleum Corp. of the United States. The companies that held offshore permits were Kosmos Energy Ltd. of Bermuda; Total S.A. of France; Genel Energy Plc of Turkey; Capricorn Exploration and Development Co. Ltd. (a subsidiary of Cairn Energy Plc of the United Kingdom); and Chevron Morocco Exploration Ltd. (a subsidiary of Chevron Corp. of the United States) (Office National des Hydrocarbures et des Mines, 2014a, p. 12, 22).

Natural Gas.—Morocco produced modest quantities of natural gas, which amounted to 45.16 million cubic meters in 2013 compared with 43.45 million cubic meters in 2012. Additionally, the country received royalties for allowing transmission of natural gas from Algeria to Spain through its territory. The Europe-Maghreb Pipeline netted Morocco 708 million cubic meters of natural gas in 2013 compared with 657 million cubic meters in 2012. The country's natural gas consumption, which totaled more than 1 billion cubic meters, was far greater than domestic production of natural gas and natural gas royalties from the Algerian gas pipeline passing through Morocco. Morocco imported natural gas from Algeria at a rate of 640 cubic meters per year under a 10-year contract (Office National des Hydrocarbures et des Mines, 2014a, p. 23, 36; U.S. Energy Information Administration, 2014).

Circle Oil Maroc Ltd. (COML), which was a wholly owned subsidiary of Circle Oil Plc of Ireland, continued exploration and exploitation at the Rharb basin in northwestern Morocco. COML held two permits—the Lalla Mimouna permit and the Sebou Oulad N'Zala permit. The Lalla Minouna permit covers 2,211 km^2 and gives COML 75% interest and ONHYM 25% interest in the project for a period of 8 years and could be renewed to 30 years. In 2013, COML increased its natural gas production at the Sebou Oulad N'Zala to 198,000 cubic meters per day from 127,500 cubic meters per day. In January, the company reported natural gas reserves estimates for the Sebou field, which covers an area of 134 km^2, to be 854 million cubic meters and the remaining reserves at yearend 2013 to be about 730 million cubic meters (Circle Oil plc, 2014).

Petroleum.—Petroleum products made up about 61% of the country's energy consumption in 2012 (the latest year for which comprehensive information was available), followed by coal, 20%, and natural gas, about 7%, The Government's energy strategy, which aimed to reduce dependence on hydrocarbon imports, was to establish financial terms for hydrocarbon exploration agreements that would attract investment in the hydrocarbon sector. The strategy capped the Government's share in hydrocarbon projects at 25%, which was less than the 50% share held by other North African countries (Algeria and Libya). About 40 international oil companies were involved in drilling operations for oil and gas in Morocco, with some licenses extending to 25 years, allowing them to acquire 75% of the value of extractions in return for the companies investing part of their revenues in additional exploration operations and paying fees. In 2013, the ONHYM signed 6 new petroleum agreements, renewed 6 existing agreements, amended 13 existing agreements, and signed 6 memoranda of understanding (Office National des Hydrocarbures et des Mines, 2014a, p. 10).

In 2013, Morocco had 10 known oil shale deposits that contained an estimated 3.5% of the world's oil shale resources. According to U.S. Energy Information Administration estimates, the oil shale deposits in Morocco and Western Sahara contained 567 billion cubic meters of technically recoverable shale gas and 200 million barrels of shale oil in place. Projected production from oil shale deposits was estimated to be 50,000 barrels per day. The oil shale deposits include (1) the Tadla basin in Central Morocco; (2) the Tarafaya basin in southwestern Morocco; (3) Timahdit, which is the second largest deposit in Morocco and is located in the Middle Atlas Mountains; and (4) the Tindouf basin, which extends across Morocco and Western Sahara. In 2012, core drilling at the deposit had identified estimated reserves of 42 Gt of oil shale containing an estimated 15 billion barrels of oil in place (Office National des Hydrocarbures et des Mines, 2014a; Tar Sands World, 2014; U.S. Energy Information Administration, 2014).

Genel was involved in three offshore blocks in Morocco—the Mir Left Block (75% interest), the Sidi Moussa Block (60% interest), and the Juby Maritime Block (37.5% interest)—which cover a total area of 16,500 km^2. In 2013, the company was drilling exploratory wells south of the Moroccan coast bordering the Canary Islands to reach layers of oil associated with Jurassic carbonates. The company planned to continue drilling to a depth of 600 m in order to confirm the size of the oil reserves. Genel estimated oil and gas reserves located between Tan Tan and Tarfaya to be 900 million barrels of oil. Genel planned to carry out further drilling to determine the nature and size of

the possible reserves in the region. The company has explored about 2,000 km^2 in Morocco using geologic three-dimensional vibration (Genel Energy plc, 2014).

Chariot Oil and Gas Ltd. held three oil and gas prospecting licenses that cover 14,500 km^2, including a 75% ownership and operational interests in two offshore licenses in the Loukos and Mohammedia prospecting area, The company also held a 50% equity interest in the Rabat Deep permits 1 through 4 (Chariot Oil and Gas Ltd., 2014, p. 27).

Renewable Energy.—Morocco was the leading importer of hydrocarbons in North Africa in 2013. Thus, the Government was focused on reducing its fuel and electricity imports, which amounted to more than $3 billion in 2013, and on meeting the projected increase in power demand of 6.5% per year through renewable energy sources. The Government planned to invest $13 billion in expanding the country's capacity for hydroelectric, solar, and wind power generation, which could increase the share of renewables in the energy mix to 42% by the year 2020 from the current share of 8% (Zafar, 2014).

The Government aimed to install 2,000 megawatts (MW) of solar power generating capacity by 2020 by building large-scale solar powerplants using modern solar thermal, photovoltaic, and concentrated solar power techniques at five locations—the Ain Beni Mathar in central Morocco, the Boujdour in Western Sahara, the Laayoune in Western Sahara, the Ouarzazate, and the Tarfaya south of Agadir. These powerplants were expected to cost $9 billion and to meet 20% of the country's electricity demand when completed by 2019. Construction of the first phase of the 160-MW-capacity Ouarzazate thermo-solar powerplant began in April and was expected to be completed in 2015. The first and second phases of the Ouarzazate thermo-solar powerplant were expected to cover 3,000 hectares and to have 500 MW of electricity-generating capacity that would meet the electricity needs of 1.5 million people in the Ouarzazate area (Phys.org, 2013; Zafar, 2014).

With a coastline that extends 3,500 km, Morocco has vast potential to generate electricity from wind energy. The first 50-MW-capacity wind farm in the country was built in 2000 in El Koudia El Baida in Tetouan Province, followed by a 60-MW-capacity wind farm at Cap Sim south of Essaouira in 2007, and 140-MW-capacity wind farms at Allak, El Hound, and Beni Mejmel in 2010. The Government was implementing a plan that would increase the country's wind farm electricity-generating capacity to 2,000 MW by 2020 (Office National de l'Electricite et de l'Eau Potable, 2014).

Outlook

The Government has been focusing on increasing investments in the mineral sector and establishing joint ventures with international companies, particularly in the natural gas, metals, and petroleum sectors. The Government is expected to take additional steps to privatize selected state-owned mining assets and to launch reform programs within the mining industry to boost the industry's competitiveness. In addition to phosphate rock, silver and tin could prove to be significant mineral commodities for Morocco as Maya Gold and Kasbah continue to develop their silver and tin resources, respectively. The OCP is expected to continue to establish joint ventures with international companies to ensure more effective operations and entry into new markets as well as continued focus on Brazilian and Indian markets. Managem is likely to expand its operations inside and outside the country, whereas ONYHM is expected to continue to support development of the hydrocarbon and mining industries. The development of Morocco's hydrocarbon and renewable energy resources is expected to decrease the country's dependence on hydrocarbon imports and to increase its supply of electricity.

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WESTERN SAHARA

The issue of sovereignty for Western Sahara, which was claimed by the Moroccan Government, the Saharawi Arab Democratic Republic (SADR), and the Popular Front for the Liberation of the Saguia el Hamra and Rio de Oro (Polisario), remained unresolved in 2013. About 85% of the Western Sahara territory was administered by the Government of Morocco, and the remaining 15% was under the administration of the Polisario. The territory is a desert area bordering the Atlantic Ocean between Mauritania and Morocco. Western Sahara's economy continued to be dependent on fishing, pastoral nomadism, and phosphate rock mining (Crisp, 2014).

Phosphate de Boucraa S.A. (Phosboucraa) was a fully owned subsidiary of OCP, which was responsible for mining, beneficiation, transportation, and marketing of phosphate rock at the Bou Craa Mine. The mine had the world's longest conveyor belt, employed 2,100 people (most of them locals), and held 1.6% of Morocco's phosphate rock reserves. Phosphate rock mined in Western Sahara was moved by a conveyor belt for a distance of more than 100 km to the Port of El Aaiun. The phosphate ore was offloaded to cargo vessels for transport to various countries where the phosphate is used in fertilizer production. According to Western Sahara Resource Watch, 2.2 Mt of phosphate rock valued at $330 million was exported in 2013 compared with 1.8 Mt valued at $340 million in 2012. Phosphate rock exports went to the United States (32%), Lithuania (18%), New Zealand (14%), Mexico (12%), Canada (8%), Colombia (5%), Australia (3%), and others (6%) (Western Sahara Resource Watch, 2014).

The issue of the disputed territory of Western Sahara was recently raised by the Polisario as interest in offshore oil exploration increased because some of the significant area in the offshore concession, which was held by Kosmos Energy, is located in the disputed region. The dispute could raise legal issues concerning exploration and development of offshore hydrocarbon resources in the territorial waters of Western Sahara (Sahara Press Service, 2013; Crisp, 2014).

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TABLE 1
MOROCCO AND WESTERN SAHARA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2009	2010	2011	2012	2013
METALS						
Antimony, antimony oxide		1700 r	1700 r	15,700 r	7,100 r	7,000
Cobalt:						
Concentrates, gross weight		26,100	31,095	21,587	20,000 r	20,330
Metal[3]		1,600	1,582 r	1,718 r	1,314	1,353
Copper:						
Concentrates, gross weight		42,100	53,300 r	43,000 r	59,000 r	46,320
Cu content, concentrates		12,615	12,690	12,893	17,700 r	18,000
Gold	kilograms	470 r	650	520	519 r	550
Iron and steel:						
Iron ore:						
Gross weight		30,523 r	44,665	78,926	260,700 r	301,100
Fe content (54%)		16,470	24,119	42,620	140,778 r	145,800
Metal:						
Pig iron[e]		15,000	15,000	15,000	15,000	15,000
Steel, crude		499,000 r	485,000 r	654,000 r	539,000 r	558,000
Lead:						
Concentrate:						
Gross weight		49,030 r	46,373	43,821	39,100 r	43,700
Pb content		20,100 r	38,200 r	36,500 r	15,600 r	17,435
Cuprous matte, Pb content		2,520 r	890 r	470 r	600 r	600
Metal, refined:						
Primary		36,000	38,237	36,469	38,000	38,000
Secondary[e]		3,000	3,000	3 000	2,500	2,500
Total[e]		39,000	41,200 r	39,500	40,000	40,000
Manganese ore, largely chemical-grade		51,788	75,614	58,000 r	90,200 r	110,970
Mercury[e]		10	10	9	8	8
Nickel content of nickel sulfate		733 r	317	217	288 r	175
Silver, Ag content	kilograms	210,000 r	243,000	186,090 r	173,400 r	194,077
Zinc concentrate:						
Gross weight		88,400	87,360	90,129	92,000	82,500
Zn content		44,199	43,680	45,065	45,800 r	47,600
Zn oxide		5,920	16,500	7,200	6,889	6,963
INDUSTRIAL MINERALS						
Arsenic trioxide		8,655	13,731	8,154	8,820 r	8,968
Barite, crude		586,937	572,429	769,504	1,021,400 r	1,094,470
Cement, hydraulic	thousand metric tons	14,519	14,000	14,000	15,871 r	14,900
Clays, crude:						
Bentonite		84,097	110,700	97,071	91,200 r	105,240
Fuller's earth (smectite)		132,110	82,570	103,682	81,800 r	59,000
Montmorillonite (ghassoul)		928	1,186	1,419	1,900 r	1,990
Feldspar[e]		28,000	--	43,889	45,000	45,000
Fertilizers	thousand metric tons	2,520	3,713	4,350	4,500	7,400

See footnotes at end of table.

TABLE 1—Continued
MOROCCO AND WESTERN SAHARA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2009	2010	2011	2012	2013
INDUSTRIAL MINERALS—Continued						
Fluorspar, acid-grade		72,100 r	89,700 r	79,207	79,300 r	81,250
Phosphate rock:						
Gross weight[4]	thousand metric tons	18,307	26,603	28,052	27,060 r	26,400
P_2O_5 content	do.	6,000	8,500	8,977 r	8,659 r	8,448
Phosphoric acid	do.	3,077	3,999	4,888	4,158 r	4,700
Pyrophyllite		33,400	27,066	4,600 r	-- r	--
Salt:[4]						
Rock		310,400 r	503,351	720,814	730,000 r	488,920
Marine		16,500	20,000	25,000	25,000	20,000
Total		326,900 r	523,351	745,814	755,000 r	508,920
Sulfur, refineries byproduct		5,000	38,000	53,000	62,000	60,000
Sulfuric acid[e]		9,500	9,500	9,500	10,000	10,000
Talc		-- r	--	500 r	200 r	--
MINERAL FUELS AND RELATED MATERIALS						
Natural gas, dry	million cubic meters	60	60	60	43 r	45
Petroleum:						
Crude	thousand 42-gallon barrels	1,575	1,575	1,500	1,600	1,847
Refinery products:						
Liquefied petroleum gas	do.	951 r	336 r	429 r	1,322 r	1,114
Gasoline	do.	2,422 r	2,798 r	3,284 r	3,472 r	3,310
Jet fuel	do.	1,960 r	3,391 r	4,219 r	6,955 r	4,441
Distillate fuel oil	do.	9,914 r	14,741 r	17,374 r	19,722 r	16,121
Residual fuel oil	do.	9,144 r	12,214 r	17,962 r	14,106 r	12,854
Other[e]	do.	10,609 r	14,520 r	8,732 r	3,423 r	6,160
Total	do.	35,000 r	48,000	52,000 r	49,000 r	44,000

[e]Estimated; estimated data are rounded to no more than three significant digits. [r]Revised. do. Ditto. -- Zero.

[1]Table includes data available through December 31, 2014.

[2]In addition to the commodities listed, gypsum, perlite, and a variety of crude construction materials are produced, but information is inadequate to make reliable estimates of output.

[3]Cobalt electrowon from cobalt concentrates and tailings from the Bou-Azzer Mine.

[4]May include production from Western Sahara.

TABLE 2
MOROCCO AND WESTERN SAHARA: STRUCTURE OF THE MINERAL INDUSTRIES IN 2013

(Metric tons unless otherwise specified)

Country and commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
MOROCCO			
Arsenic trioxide	Compagnie de Tifnout Tighanimine Managem S.A. (CTT Managem) (Managem S.A., 55.2%, and Société Metallurgique d'Imiter, 20%)	Guemassa, Marrakech	6,100
Barite	Central d'Achat et de Développement de la Région Minière du Tafilalet et de Figuig (CADETAF) (artisanal miners)	Errachidia, Figuig, and Ouarzazate	16,000
Do.	Broychim S.A.R.L.	Casablanca	24,000
Do.	do.	Safi	150,000
Do.	Compagnie Marocaine des Barytes S.A. (COMABAR) [Norbar Minerals AS, 55%, and Office National des Hydrocarbures et des Mines (ONHYM), 45%]	Tlet Ighoud, Safi	160,000
Do.	do.	Zelmou, Figuig	110,000
Do.	Société Nord Africaine de Recherches et d'Exploitation des Mines d'Argana (SNAREMA)	Seksaoua, Marrakech	120,000
Do.	Société Nouvelle Union des Metaux Maroc	Jbel Abdellah, Errachidia	12,000
Barite, chemical grade	Société Nord Africaine de Recherches et d'Exploitation des Mines d'Argana	Argana	30,000
Bentonite	Société Miniere Bentonite d'Afarha S.A. [Grupo Tolsa, 80%, and Office National des Hydrocarbures et des Mines (ONHYM), 20%]	Aferha	9,200
Do.	Société d'Exploitation des Mines du Rif [Office National des Hydrocarbures et des Mines (ONHYM), 100%]	Bou Hoed, near Ouixane	15,000
Do.	Compagnie Marocaine des Barytes [Norbar Minerals AS, 55%, and Office National des Hydrocarbures et des Mines (ONHYM), 45%]	Azzouzet-Tidiennit	5,000
Do.	North African Industrial Minerals Exploration S.A.R.L. (S&B Group)	Trebia Mine	NA
Cement, portland	Asment de Temara (Cimentos de Portugal S.A., 57.4%)	Kiln and mill at Temara	1,250,000
Do.	Ciments de L'Atlas	Beni Mellal kiln and mill	1,600,000
Do.	do.	Settat kiln and mill	1,600,000
Do.	Lafarge Maroc S.A. (Lafarge Group, 50%)	Bouskoura, near Casablanca	3,000,000
Do.	do.	Tetouan, south of Casablanca	2,500,000
Do.	do.	Cadem clinker mill at Meknes	1,750,000
Do.	do.	Tamuda kiln and mill, Tetouan	800,000
Do.	do.	Grinding unit at Tangier	1,000,000
Do.	Holcim Maroc S.A. (Holcim AG., 61%)	Kiln and mill at Oujda	1,300,000
Do.	do.	Settat kiln and mill	1,700,000
Do.	do.	Fes, Ras El Ma kiln and mill	1,300,000
Do.	do.	Fes, Doukkarat clinker mill	600,000
Do.	do.	Nador clinker mill	400,000
Do.	Ciments du Maroc S.A. (Italcementi Group, 58.3%)	Kiln and mill at Agadir	1,400,000
Do.	do.	Kiln and mill at Marrakech	1,300,000
Do.	do.	Kiln and mill at Safi	1,000,000
Do.	do.	Laayoune clinker mill	500,000
Clay	Société du Ghassoul et de ses Derives SEFRIOUI SA	Tamdafelt	NA
Do.	Antonio Reyes Mines S.A.	Haddou Ammar, Nador	NA
Coal, anthracite	Charbonnages du Maroc [Bureau de Recherches de Participations Minières (BRPM), 98.89%]	Jerada	650,000
Cobalt:			
Ore, gross weight	Compagnie de Tifnout Tighanimine (Managem Group S.A.)	Bou-Azzer, Ouarzazate	200,000
Metal	do.	Guemassa, Marrakech	2,500
Copper, concentrate	Société Minière de Bou Gaffer (SOMIFER) [Office National des Hydrocarbures et des Mines (ONHYM), 34.2%; Société Metallurgique d'Imiter, 36%; Managem S.A., 7.6%]	Bleida	50,000
Do.	Compagnie Minière de Guemassa (CMG) [Managem S.A., 74%, and Office National des Hydrocarbures et des Mines (ONHYM), 23.08%]	Douar Hajar Mine, Guemassa, Marrakech	18,000
Do.	Société de Développement du Cuivre de l'Anti-Atlas (SODECAT) [Office National des Hydrocarbons et des Mines (ONHYM), 100%]	Tiouit	4,500

See footnotes at end of table.

TABLE 2—Continued
MOROCCO AND WESTERN SAHARA: STRUCTURE OF THE MINERAL INDUSTRIES IN 2013

(Metric tons unless otherwise specified)

Country and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
MOROCCO—Continued				
Fluorspar, concentrate		Société Anonyme d'Entreprises Minières (Managem S.A., 58%, and Société Metallurgique d'Imiter, 42%)	El Hammam, Khemisset	100,000
Gold	kilograms	Akka Gold Mining Company [Managem S.A., 70%, and Office National des Hydrocarbures et des Mines (ONHYM), 16.07%]	Iourim, Tiznit	725
Iron ore		Société d'Exploitation des Mines du Rif [Office National des Hydrocarbures et des Mines (ONHYM), 100%]	Bouhoua, Nador	120,000
Concentrate		Compagnie Minière de Guemassa (CMG) [Managem S.A., 74%, and Bureau de Recherches de Participations Minières (BRPM), 23.08%]	Douar Hajar Mine, Guemassa	29,900
Do.		Compagnie Minière de Touissit (CMT) (Emerging Capital Partners, 50%, and Truffle Capital, 50%)	Touissit, Jerada	73,000
Metal[1]		Société des Fonderies de Plomb de Zellidja (SFPZ) (Zellidja S.A., 50.4%)	Oued El Heimer	70,000
Lime		Lafarge Calincor Maroc (Lafarge Group)	Two kilns at Tlad Loulad	180,000
Manganese, concentrate		Société Anonyme Chérifienne d'Etudes Minières (SACEM) [Bureau de Recherches de Participations Minières (BRPM), 43%, and Compagnie Minière de l'Ogooué SA (COMILOG), 30%]	Imini, Ouarzazate	14,000
Natural gas	million cubic meters	Joint venture of Circle Oil Maroc Ltd. (COML), 75%, and Office National des Hydrocarbons et des Mines (ONHYM), 25%	Sebou gasfield	72
Petroleum, refinery products	thousand 42-gallon barrels	Société Anonyme Marocaine de l'Industrie du Raffinage (SAMIR) (Group Corral Petroleum, 64.7%, and general public, 35.3%)	Mohammedia	75,000
Do.	do.	do.	Sidi Kacem	9,500
Phosphate rock		Office Chérifien des Phosphates (OCP) (Government, 100%)	Khouribga-Jorf Lasfar Axis,	19,000,000
Do.		do.	Mera El Arech Mine, Khouribga mining center	6,000,000
Do.		do.	Benguerir open pit mine, Gantour mining center	6,000,000
Do.		do.	Youssoufia underground mine, Gantour mining center	3,000,000
Do.		do.	Sidi Chennane Mine, Khouribga mining center	2,000,000
Phosphoric acid, P_2O_5 content		Office Chérifien des Phosphates (OCP)	Maroc Chimie I and II, Safi	500,000
Do.		do.	Maroc Phosphore I and II, Safi	1,150,000
Do.		do.	Maroc Phosphore III, IV, Jorf Lasfar	1,500,000
Do.		Indo Maroc Phosphore S.A. [Office Chérifien des Phosphates (OCP), 33.33%; Chambal Fertilizers and Chemicals Ltd., 33.33%; Tata Chemicals Ltd., 33.33%]	Jorf Lasfar	430,000
Do.		Bunge Maroc Phosphore (Office Chérifien des Phosphates (OCP), 50%, and Bung Brasil, 50%]	do.	375,000
Do.		Jorf Fertilizer Co. V [Office Chérifien des Phosphates (OCP), 100%]	do.	375,000
Do.		Pakistan Maroc Phosphore S.A. (Office Chérifien des Phosphates (OCP), 50%, and Fauji Pakistani Group, 50%]	do.	375,000
Phosphoric acid (purified), P_2O_5 content		Euro-Maroc Phosphore Co. [Office Chérifien des Phosphates (OCP), 33%; Société Chimique Prayon-Rupel, 33%; Chemische Frabrik Budenheim KG, 33%]	Jorf Lasfar	150,000
Salt:				
Rock		Société de Sel de Mohammedia (SSM) [Office National des Hydrocarbures et des Mines (ONHYM), 100%]	Ain Tekki, Mohammedia	226,500
Marine		Société Chérifienne des Sels (SCS) [Government, 50%, and Société Nouvelle des Salins du Sine Saloum (SNSSS), 50%]	Lac Zima, Safi	30,000
Silver	kilograms	Société Metallurgique d'Imiter (SMI) (Managem S.A., 75.72%, and general public, 24.28%)	Imiter Mine, Imiter	240,000
Do.	do.	Zgounder Millenmium Silver Mining [Maya Gold and Silver Inc., 85%, and Office National des Hydrocarbures et des Mines (ONHYM), 15%]	Zgounder Mine, south of Marrakech	2,500 [2]

See footnotes at end of table.

TABLE 2—Continued
MOROCCO AND WESTERN SAHARA: STRUCTURE OF THE MINERAL INDUSTRIES IN 2013

(Metric tons unless otherwise specified)

Country and commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
MOROCCO—Continued			
Steel products:			
Bars and sections	Société Nationale de Sidérurgie (Sonasid) (public, 31.14%; Société Nationale d'Ivestissement S.A., 21.07%; Axa Assurances Maroc, 8.53%; Aceralia Redendos, 8.5%)	Jorf Lasfar	300,000
Rebar and wire rod	Univers Acier S.A.	Casablanca	1,000,000
Do.	do.	do.	80,000
Cold-rolled sheet	Maghreb Steel S.A.	do.	250,000
Talc and pyrophyllite:[2]			
Pyrophyllite	Société Industrie Minière Marocaine (IMM)	Khenifra	NA
Talc	Société Zenaga	Tinejdad, Errachidia	NA
Do.	do.	Taliouine, Ouarzazate	NA
Zinc, concentrate	Compagnie Minière de Guemassa (CMG) [Managem S.A., 74%, and Office National des Hydrocarbures et des Mines (ONHYM), 23.08%]	Douar Hajar Mine, Guemassa	170,000
Do.	do.	Draa Sfar	NA
Do.	Société des Mines de Tennous (SOMITE)	Aguerd N'Tazoult, Azilal	NA
Do.	Société Mineral et Substances	Lalla Mimouna, Taza	NA
WESTERN SAHARA			
Cement	Ciments du Maroc S.A. (CIMAR) (Italcementi Group, 58.3%)	Laayoune, grinding	500,000
Phosphate rock	Phosphates de Bou Craa S.A. [Office Chérifien des Phosphates (OCP), 65%]	Open pit mine, Bou Craa mining center	2,000,000

Do., do. Ditto. NA Not available.
[1]Société des Fonderies de Plomb de Zellidja also refines silver and produces copper matte and sodium antimonate.
[2]No production in 2013.