



2008 Minerals Yearbook

ALGERIA

THE MINERAL INDUSTRY OF ALGERIA

By Mowafa Taib

Algeria is the 2d largest country in terms of land area in Africa and the 11th largest country in the world. Its geologic structures include the Tellian chain, the High Plateaus, the Saharan Atlas, the Saharan platform, the Hoggar shield, and the Eglab massif. In 2008, Algeria was a significant producer and exporter of natural gas and accounted for 2.8% of the world's natural gas output. The country held 4.5 trillion cubic meters of natural gas reserves, which was 2.5% of the world's total gas reserves. Algeria was a significant producer and exporter of crude oil; in terms of the volume of its crude oil production, it was ranked third in Africa after Nigeria and Angola and accounted for 2.2% of the world's crude oil output. In addition to hydrocarbons, Algeria produced substantial quantities of metal, including gold, iron ore, silver, and steel; industrial minerals, including barite, bentonite and other clays, cement, crushed stone, gravel, gypsum, helium, marble, nitrogen fertilizer, phosphate, pozzolan, quartz, salt, and sand (BP p.l.c., 2009, p. 8, 22, 24; Mining Journal, 2009; Organization of Arab Petroleum Exporting Countries, 2009, p. 12, 13).

Minerals in the National Economy

The Algerian economy grew in real terms at an annual rate of 2.4% in 2008 compared with a 3.0% growth rate in 2007. The value of hydrocarbon production, which composed 45.5% of the gross domestic product (GDP), increased by 22% in 2008 compared with a 5% increase in 2007. The increase was attributable to a 33% increase in oil prices, which averaged \$99.97 per barrel for Algeria in 2008 compared with an average of \$74.95 per barrel in 2007. The value added to the economy by the hydrocarbon industry declined for the third consecutive year, registering a decrease of 2.3% in 2008 compared with decreases of 0.9% and 2.5% in 2007 and 2006, respectively. The output of the mining sector, which accounted for 2.7% of the value of the industrial sector, increased by about 10% in 2008 compared with 8% in 2007 and 15% in 2006. The development of sand and stone production to fulfill the increased demand of the construction industry and the expansion in iron ore mining were the main contributors to the growth in the Algerian mining sector in 2008 (Banque d'Algérie, 2009, p. 27-35).

In 2008, total direct investment by international mining companies in Algeria's mining operations was about \$69 million, which was 35% more than the \$51 million invested in 2007. Sixty-three percent of the international investment in the mining sector was in mineral exploitation; 35%, in mineral exploration; and 2%, in prospecting. The international mining companies that were operating in Algeria in 2008 included Abed Maaden S.p.A., which was a subsidiary of Cecomines of China (lead-zinc); Adwan Chemicals Industries Co. Ltd. of Saudi Arabia (silica sand); Algerian Cement Co., which was acquired by Lafarge S.A. of France from Orascom Industries of Egypt (clays, limestone, and sand); Algerian Concrete Technology, which was a subsidiary of Lafarge (clays,

limestone, and sand); ArcelorMittal of Luxembourg (iron ore, limestone, and aggregate); Cancor Mine Inc. of Canada (gold-copper, gold-silver); China Geo Engineering Corp. (gold); Henan Shaolin Hydro Co. Ltd. (copper, gold, manganese, tin, zinc-lead); Poly Sciences and Technology Development Co. Ltd. of China (gold); Soalka-White Federal Cement of Canada and Lebanon (kaolin); and Western Mediterranean Zinc of Australia (zinc-lead) (Ministry of Energy and Mining, 2009, p. 82).

Production

In 2008, Algeria's crude oil production decreased slightly (by 2.6%) and natural gas output increased modestly (by 1.5%) compared with 2007 output levels. The volume of petroleum refinery production increased by about 7% to 195 million barrels (Mbbbl) compared with 182 Mbbbl in 2007. In 2008, there were notable increases in the production of tuff, by 606%; quartzite, by 287%; gold, by 174%; silver, by 148%; dolomite, by 103%; crushed sand, by 87%; rhyolite, by 78%; aggregates, by 53%; calcite, by 23%; feldspar and gypsum, by about 40% each; lime, by 38%; construction sand, by 19%; methanol, by 11%; cement and salt, by 10% each; and iron ore, by 5%. There were significant decreases, however, in the production of kaolin, by 52%; crude steel, by 49%; pig iron, by 42%; calcite, by 35%; crushed marble, by 26%; coke, by 25%; pozzolan, by 14%; and diatomite, by 12%.

Structure of the Mineral Industry

The Ministère de l'Énergie et des Mines (MEM) [Ministry of Energy and Mining] was responsible for regulating the activities of the mining sector through its agencies, which included La Direction Générale des Hydrocarbures [the General Directorate of Hydrocarbons], La Direction Générale des Mines [the General Directorate of Mining], Sonatrach S.p.A., and its subsidiaries and partners. The MEM sought to attract international investors and mining companies to exploit Algerian mineral resources and develop the country's mining industry. The goals of the MEM strategic policies were to meet the national industrial sector's raw material needs, create jobs in regions with low economic activity, and export surplus mining products (Ministry of Energy and Mining, 2008, p. 6).

Mining law No. 01-10 was enacted on July 3, 2001, and created the Agence Nationale du Patrimoine Minier (ANPM) [Algerian Mining Authority] as well as the Agence Nationale de la Géologie et du Contrôle Minier (ANGCM) [National Agency of Geology and Mining Control]. Natural gas and petroleum operations are regulated by Ordinance No. 06-10 of July 29, 2006, that modified and supplemented law No. 05-07 of April 28, 2005, in terms of its relation to hydrocarbons. Environmental laws applicable to the mineral industry include law No. 03-10 of July 19, 2003, and associated decrees, and law No. 05-12 of September 4, 2005. The new mining law affirms

parity for all investors; separates surface and underground mine tenure; ensures that disputes can be appealed to international arbitrators; gives incentives for importing equipment for mining operations; and provides custom-tax exemption and rebates on extraction royalties for minerals (Mining Journal, 2009, p. 4).

In 2008, the number of employees in the mining sector was 30,267, which was 6.6% more than in 2007. Fifty-eight percent of the mining workforce was employed by privately owned companies and 42% was employed by Government-owned enterprises. Aggregate and stone production companies accounted for 59% of the mining sector workforce followed by clay production companies, 8.9%; phosphate production companies, 6.0%; companies that produced limestone for cement, 4.2%; and iron ore production companies, 3.6% (Ministry of Energy and Mining, 2009, p. 8).

In 2008, 1,143 nonfuel mineral production operations were active in Algeria, of which 77% was privately owned and 23% was state owned. These operations produced 31 minerals and mineral-related material, including aggregate (66%), clays (10%), salt (17%), and natural sand (7%). Large- and medium-sized public-sector enterprises operated barite, bentonite, cement, natural gas, petroleum, and phosphate rock production facilities. The joint ventures of private and state-owned companies dominated the gold production sector [Enterprise d'Exploitation des Mines d'Or S.p.A. (ENOR)], the helium production sector (Helios S.p.A.), and the steel production sector (ArcelorMittal Annaba S.p.A.) (Ministry of Energy and Mining, 2009, p. 12, 63).

In 2008, 84 partnerships were established between international mining companies and Algerian public sector companies. The partnerships included 43 that were set up to explore for copper, gold, lead, limestone, manganese, silver, tin-tungsten, and zinc; 31 that were established to produce iron ore, clays and gypsum for cement, lead-zinc, and sandstone for glass; and 10 that were established to prospect for copper, gold, molybdenum and silver. By the end of 2008, a total of 2,206 licenses had been issued to prospect for, explore for, and (or) exploit 46 mineral commodities. The vast majority of these licenses (93%) were for the production of construction material, such as aggregates (1,307), clays (267), sand (199), gypsum (110), dimension stone (77), tuff (39), sandstone (35), limestone for cement (33), and other construction material (18). The remaining 7% was for production of salt (26), gold (16), lead and zinc (15), barite (14), iron ore (12), copper and feldspar (6 each), calcium carbonate (5), phosphate rock (4), strontium and tungsten (2 each), and other minerals (13) (Ministry of Energy and Mining, 2009, p. 78).

Mineral Trade

In 2008, the value of Algerian exports of goods was \$78.59 billion, 98.2% of which was hydrocarbon exports. The value of hydrocarbon exports was \$77.2 billion compared with \$59.61 billion in 2007, which was an increase of about 30% in value and a decrease of 2% in volume. The value of nonfuel mineral exports decreased to \$204 million in 2008 from \$302 million in 2007 and \$458 million in 2006, or by 32% and 55% compared with that of 2007 and 2006, respectively.

Industrial minerals exports accounted for 92% of nonfuel mineral exports, and precious metals exports accounted for 8% of the value of nonfuel mineral exports. The value of base-metals and iron ore exports decreased to zero in 2008 from \$148 million and \$87 million, respectively, in 2007 (Banque d'Algérie, 2009, p. 63; Ministry of Energy and Mining, 2009, p. 88).

In 2008, the value of crude oil exports accounted for 39.5% of Algeria's total hydrocarbon export value followed by natural gas, 18.8%; condensates, 13.1%; liquefied natural gas (LNG), 11.8%; refined petroleum products, 9.5%; and liquefied petroleum gas (LPG), 7.4% (Banque d'Algérie, 2009, p. 206).

In 2008, the United States received 28% of Algeria's oil exports, or a total of 200.6 Mbbbl of crude oil and petroleum products, which was 18% less than the 244.6 Mbbbl imported in 2007. Algerian exports accounted for 4% of United States' total crude oil and petroleum products imports in 2008 and 5% in 2007 (U.S. Energy Information Administration, 2009).

Algeria exported 59.4 billion cubic meters of natural gas in 2008, which was slightly more than the 58.7 billion cubic meters exported in 2007. Sixty-three percent of natural gas exports was transported by pipelines to Italy, Portugal, Spain, and Tunisia, and 37% was shipped by tankers to France, Greece, India, Italy, Japan, the Republic of Korea, Spain, Turkey, and the United Kingdom (Organization of Arab Exporting Petroleum Countries, 2009, p. 62).

The value of mining products imports increased in 2008 to \$381 million from \$321 million in 2007. The 19% increase was attributed to the increase in prices of industrial minerals and to the increase in the volume of mineral imports used for energy production (Banque d'Algérie, 2009, p. 206; Ministry of Energy and Mining, 2009, p. 88).

Commodity Review

Metals

Gold and Silver.—Gold and silver production rebounded in 2008 to the production levels of 2004 and 2005, thus reversing the downward trend in production in 2006 and 2007. In 2008, gold production was 647 kilograms (kg) compared with 236 kg in 2007. Similarly, the output of silver, which was produced as a byproduct of the gold mines, increased to 114 kg in 2008 from 46 kg in 2007. Heap-leach production of gold and silver at the Amesmesa Mine was officially inaugurated in January 2008. Gold and silver were mined by ENOR, which was a partnership company of GMA Resources plc of the United Kingdom (52% interest) and Sonatrach (48%). The company mined the Tirek-Amesmesa site, which is located in the Hoggar region 450 kilometers (km) south of the city of Tamanrasset in southwestern Algeria. Estimates of proven and probable reserves in the 1,417-square-kilometer (km²) area were 748,000 metric tons (t) of gold ore with a total content of 9.1 t of contained gold (GMA Resources p.l.c., 2009).

Cancor Mines Inc. of Canada acquired two gold exploration licenses in 2008 in addition to the two gold exploration licenses that it had acquired in 2007. The 1,984-km² area covered by the four licenses is located in the Hoggar region of the Sahara.

It included the Terik North (990 km²), the Tan Chaffao West (446 km²), the Ouzzal North (258 km²), and the Tan Chaffao East (200 km²) properties (Cancor Mines Inc., 2009).

Iron Ore.—Algeria's iron ore production increased by 4.8% in 2008. About 2.1 million metric tons (Mt) of iron ore was produced compared with about 2.0 Mt in 2007, which in turn was a 15% decrease from that of 2006. ArcelorMittal Annaba S.p.A. (a subsidiary of ArcelorMittal) was responsible for about 83% of Algeria's iron ore production at the Boukhadra and the Ouenza Mines. The remaining 17% was produced by Somifer S.p.A. at the Djebel Anini Mine in Setif Province, the Khanguet Mine in Tebessa Province, and the Rouina Mine in Ain Defla Province. In 2008, production from the Ouenza Mine in Tebessa Province decreased by 7.6% to about 1.2 Mt from 1.3 Mt in 2007. Iron ore production at the Boukhadra Mine in Tebessa Province increased by 32% to 525,000 t in 2008. Somifer produced 360,000 t of iron ore, which was 22% more than in 2007. The increase was attributed to an increase in output of 75% at the Rouina Mine and about 19% at the Djebel Anini Mine (Ministry of Energy and Mining, 2009, p. 18).

In September 2008, ArcelorMittal reiterated its plan to invest \$2.5 billion in Algeria for the establishment of a new steel production complex at the Jijel Province after receiving final approval from the Government. ArcelorMittal planned to increase the steel production capacity of its mills in Algeria to 2.8 million metric tons per year (Mt/yr) and boost iron ore production at the Boukhadra and the Ouenza Mines to 3 Mt/yr within 3 years. Crude steel and pig iron production at the Al-Hadjar Co., which was majority owned by ArcelorMittal (70%), declined by 50% and 42%, respectively, because of a 4-month stoppage in blast furnace and rolling mill production in 2008. Production was expected to return to the previous level by yearend 2009 following the completion of the upgrading of blast furnaces and other related units at the plant (Arab Steel, 2008a, b).

Lead and Zinc.—Western Mediterranean Zinc S.p.A. was established in 2006 as a joint-venture of Terramin Australia Ltd. (65% interest), state-owned Entreprise Nationale des Produits Miniers Non Ferreux & des Substances Utiles, S.p.A. (ENOF) (32.5% interest), and Office National de la Recherche Géologique et Minière (ORGM) (2.5%) to develop and evaluate the base-metal resources of the Tala Hamza base-metals deposit at Oued Amizour near the city of Bejaia, which is located in northeastern Algeria. By yearend 2008, Terramin had invested \$22.7 million to complete 34,000 meters of diamond core drilling to qualify the project for the feasibility phase. As of October 2008, the total resources (measured, indicated, and inferred) of the Tala Hamza Mine, based on analyses of data from 78 drill holes, were estimated to be 58.6 Mt at grades of 1.3% lead and 5.2% zinc. The Oued Amizour zinc project was designed to include initially a 2-Mt/yr processing plant that would produce 113,000 metric tons per year (t/yr) of zinc in concentrate and 27,000 t/yr of lead in concentrate. The project's design also included an expansion plan that would treat 4 to 5 Mt/yr of ore to achieve annual zinc output of between 400,000 to 500,000 t (Mining Journal, 2009; Terramin Australia Ltd., 2009a, p. 2; 2009b).

Abed Maaden S.p.A., which was a joint venture of Cecomin (90%) and Sonatrach (10%), moved forward with its plan to

reopen the Abed lead-zinc mine at Tlemcen Province. Another joint venture of Shaolin Mines of China (51%), Sonatrach (35%), and Goldim (14%) was awarded a lead-zinc exploration license for the Ain Sedjra and the Boukhedema deposits in Setif Province (Ministry of Energy and Mining, 2009, p. 82, 83).

Industrial Minerals

Cement.—In 2008, cement production in Algeria was 17.4 Mt, which was about 10% more than in 2007. Cement production had been on the rise since 2001 to meet the increased local demand that was estimated to be 21 Mt/yr. The 2008 production level represented an 85% increase compared with the 9.4 Mt produced in 2001. There were 14 cement plants in Algeria; all were located in the northern part of the country. Twelve of these plants were state-owned and were responsible for 66% of the national production, whereas the two privately owned plants produced the remaining 34%. Cement production from the state-owned plants decreased by 1.2% in 2008 compared with 2007, whereas production by private sector plants increased by 31% during the same period. The private companies included Algerian Cement Co. and Ciment Blanc d'Algérie S.p.A. Both companies became subsidiaries of Lafarge following Lafarge's acquisition of Orascom Construction Industries S.A. of Egypt in January 2008. Algerian Cement Co. operated the Burdj Bouredj plant in M'Sila Province, which was located 240 km southeast of Algiers and produced about 5.6 Mt of portland cement in 2008. Ciment Blanc d'Algérie, which began white cement production at the Oggaz near Oran in Mascara Province in 2007, produced about 330,000 t of white cement in 2008. The combined capacity of Lafarge's two plants was 7.5 Mt/yr of cement, including 0.5 Mt/yr of white cement (Ministry of Energy and Mining, 2009, p. 54).

In June 2008, Lafarge was awarded a 10-year management contract and a 35% equity share in the Meftah cement plant, which was located near Algiers, in return for investing \$68 million to increase the plant's production capacity to 1.1 Mt/yr from 0.8 Mt/yr by 2010. The Meftah cement plant was one of the state-owned plants operated by Société des Ciments de la Mitidja Entreprise des Ciments et Dérivés du Centre (Lafarge S.A., 2008).

Phosphate Rock.—Phosphate rock was produced by Société des Mines de Phosphate (Somiphos) at Djebel Onk in Bir El Ater, which is located in southeastern Tebessa Province. Somiphos was an affiliate of Entreprise Nationale de Fer et du Phosphate (Ferphos). The volume of phosphate rock produced in 2008, which was 1.8 Mt, was a slight increase compared with that of 2007. Production of phosphate rock had been on an upward trend in recent years. The current (2008) production level was about 106% more than the 880,000 t of phosphate rock produced in 2000. The short-term plans of Ferphos aimed to double the company's current capacity of 2 Mt/yr by 2010. A long-term production target of 30 Mt of phosphate rock annually by the year 2030 had been announced based on the large phosphate rock reserves, which were estimated to be more than 2 billion metric tons. To achieve these goals, two additional phosphate treatment facilities were planned near the Djebel Onk Mine at Jijel and Mdarouche. The Government announced

a plan to build a new phosphate processing plant in Guelma Province at Bouchegouf, which is located 450 km southeast of Algiers. A joint venture of Engro Chemical of Pakistan (49% interest), Ferphos (26%), and Sonatrach (25%) was established in 2008 to manage the Bouchegouf plant (Industriel d'Engrais Phosphatés de Bouchegouf). The plant was designed to produce 1.6 Mt/yr of sulfuric acid, 1 Mt/yr of diammonium phosphate (DAP), and 0.5 Mt/yr of phosphoric acid. Another fertilizer manufacturing project was planned at Babel-Assa in Tlemcen Province. The plant was expected to produce 300,000 t/yr of phosphate fertilizers. The shareholders of the Babel-Assa fertilizer project were Getax Australia Pty Ltd. (49% interest), Ferphos (29%), and Sonatrach (22%) (ANIMA Investment Network, 2008; Mining Journal, 2009).

Mineral Fuels

Natural Gas.—Construction work for the Algerian-European pipeline Medgaz, which began in July 2007, continued throughout 2008, including building the deepwater pipeline in March and completing it in December of the same year. The project aimed to transport natural gas from Hassi R'Mel in Algeria to the reception terminal at Almeria's El Perdigal beach in Spain by way of the Saharan Atlas Mountains through Beni Saf and under the Mediterranean Sea. The 60-centimeter (cm)-diameter, 210-km pipeline would have an initial capacity to transport 8 billion cubic meters per year of natural gas, and the first gas was expected to arrive at Almeria, Spain, in 2010. The project's shareholders included Sonatrach (36%), Compania Espanola de Petroleos S.A. and Iberdrola S.A. (20% each), and Endesa S.A. and GDF Suez (12% each) (Medgaz S.A., 2009).

Petroleum.—In July 2008, Agence Nationale pour la Valorisation des Ressources en Hydrocarbures (ALNAFT) [National Agency for Hydrocarbon Resources Valuation] launched the seventh round licensing bid for the exploration and exploitation of hydrocarbons in 45 blocks. The blocks covered a 142,257-km² area across 16 zones that were spread throughout the country's sedimentary basins. This bidding call was the first licensing round under the new hydrocarbon law (law No. 05-07 of April 28, 2005), which granted Sonatrach at least a 51% ownership share of every contract given to a foreign company. It was also the first round to be managed by ALNAFT, which was established by the new hydrocarbon law. The bidding results, which were announced on December 13, 2008, awarded Eni Algeria Ltd. of Italy a 49% stake in the Kerzaz license, which has an area of 16,000 km² and is located in the Timimoun basin 400 km southeast of the Hassi R'Mel field. BG Group of the United Kingdom received a 49% interest in the Guern El Goussa concession, which is located northwest of the Hassi Ba Hamou Perimeter. E.ON Ruhrgas A.G. of Germany was awarded the Rhourde Yacoub exploration permit; and Gazprom Group of Russia won the El-Assel permit in the Berkine basin located near Algeria's border with Tunisia (Deloitte Petroleum Services, 2008).

The Government planned to increase the country's petroleum refining capacity to 50 Mt/yr by 2014 from the current (2008) 22 Mt/yr. A fourth refinery was planned at Tairat, which is located 300 km southwest of Algiers. The new refinery would

have a production capacity of 300,000 barrels per day and was expected to commence production in 2014. Naftec S.p.A., which was a subsidiary of Sonatrach, announced that it was allocating \$4 billion to upgrade Algeria's existing oil refineries at Arzew, Hassi Messoud, and Skikda (Organization of Arab Petroleum Exporting Countries, 2009, p. 31).

Outlook

The Algerian economy depends heavily on natural gas and petroleum exports. Thus, lower prices and reduced production volume can significantly weaken the country's economic growth and development. In addition to sustaining hydrocarbon production, the Government sought to diversify the economy by tapping into Algeria's vast mineral resources through joint ventures with international mining companies to explore and exploit the country's mineral reserves of metals, such as copper, gold, lead, iron ore, silver, and zinc, and industrial minerals, such as cement and phosphate rock. The Government plans to invest more than \$150 billion by 2013 to create 3 million jobs and build 1 million housing units. Demand for building and construction materials and for metals, such as steel, which are used in the extensive networks of gas and crude oil pipelines and petrochemical plants currently under construction or in planning phase, is expected to increase considerably.

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TABLE 1
 ALGERIA: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity ^{2,3}	2004	2005	2006	2007	2008
METALS					
Gold metal kilograms	593	637	377	236	647
Iron and steel:					
Iron ore, gross weight	1,554	1,579	2,340	1,982	2,077
Metal:					
Pig iron	994	952	1,093	1,193	690
Steel, crude	1,014	1,007	1,158	1,278	646
Lead, metal, refined ^c	5	5	5	--	--
Mercury kilograms	73,451	276	--	--	--
Silver metal do.	40	110	63	46	114
Zinc:					
Concentrate, Zn content metric tons	231	4,463	572	--	--
Metal, smelter output ^e	25	30	30	30	30
INDUSTRIAL MINERALS					
Barite, crude	48	53	65	63	60
Cement, hydraulic	11,000	12,800	14,702	15,886	17,397
Calcite	190	193	191	206 ^r	254
Clays:					
Bentonite	46	53	27	33	31
Common	6,118	7,383	7,308	9,529	10,973
Dolomite (industrial)	4	5	8	1	2
Fuller's earth	2	1	20	30	23
Kaolin	24	34	33	107	51
Diatomite metric tons	2,665	1,814	1,800	1,902	1,668
Feldspar	24	34	66	83	116
Gypsum ⁴	460	635	1,033	1,198	1,672
Lime, hydraulic	163 ^e	32 ^r	28 ^r	46 ^r	64 ^r
Nitrogen, N content of ammonia	543	550	470	500	500
Phosphate rock:					
Gross weight	820	878	1,510	1,800	1,805
P ₂ O ₅ content ^c	300	260	450	536	542
Pozzolan	508	494	433	570	491
Salt, brine and sea salt	176	197	260	183	202
Sand and gravel:					
Construction sand thousand cubic meters	1,366	1,599	2,143	2,553	3,044
Silica sand	180	203	48 ^r	519 ^r	498
Granulates:					
Aggregates, crushed stone, and gravel thousand cubic meters	17,020 ^r	19,050 ^r	21,220	27,230 ^r	41,604
Crushed sand cubic meters	1,800 ^r	2,210 ^r	3,380 ^r	5,590	10,470
Stone:					
Aragonite do.	NA	1,400	NA ^r	206 ^r	254
Quartzite	NA	13	6	35	136
Marble:					
Blocks thousand cubic meters	22	22	16	11	11
Crushed	121	154	148	170	126
Miscellaneous types of dressed stone thousand cubic meters	2	5	4	12	10
Rhyolite cubic meters	NA	2,960	3,200	3,430	6,100
Tuff thousand cubic meters	791	755	951	1,729	12,209
Sulfur, S content of sulfuric acid ^c	22 ^r	22	22	22	22

See footnotes at end of table.

TABLE 1—Continued
ALGERIA: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity ^{2,3}	2004	2005	2006	2007	2008	
MINERAL FUELS AND RELATED MATERIALS						
Coke	439	398	423	419	315	
Gas, natural:						
Gross	million cubic meters	183,800 ^r	193,000 ^r	194,800 ^r	198,200 ^r	201,000
Dry ⁵	do.	82,500 ^r	88,200 ^r	84,500 ^r	84,800 ^r	86,500
Helium, liquid	do.	17	17	15	20	20
Methanol	do.	107	94	130	118	130
Natural gas plant liquids	thousand 42-gallon barrels	361,000	416,000	409,000	423,000	442,000
Petroleum: ⁶						
Crude, including condensate	do.	590,000 ^r	612,000 ^r	614,000 ^r	616,000 ^r	600,000
Refinery products:						
Liquefied petroleum gas	do.	7,000	6,000	6,000	6,000	6,000
Gasoline	do.	17,000	17,000	19,000	17,000	22,000
Naphtha	do.	25,000	26,000	26,000	28,000	27,000
Kerosene and jet fuel	do.	8,000	8,000	8,000	8,000	7,000
Distillate fuel oil	do.	42,000	44,000	49,000	49,000	53,000
Lubricants	do.	1,000	1,000	1,000	1,000	1,000
Residual fuel oil	do.	36,000	34,000	36,000	37,000	40,000
Other	do.	2,000	37,000	34,000	36,000	39,000
Total	do.	138,000	173,000	179,000	182,000	195,000

⁶Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto. NA Not available. -- Zero.

¹Table includes data available through December 31, 2009.

²In addition to the commodities listed, secondary aluminum, secondary lead, and secondary copper may be produced in small quantities; crude construction materials for local consumption, and fertilizer, perlite, and urea are produced, but available information is inadequate to make estimates of output.

³In addition to the commodities listed, about 700 metric tons per year (t/yr) of caustic soda is estimated to have been produced.

⁴Includes about 50,000 t/yr of plaster.

⁵Excludes gas used in flaring, reinjection, transmission losses, and venting.

TABLE 2
ALGERIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity	
Ammonia	Le groupe Asmidal	Alzofert plant, Arzew	660,000	
Do.	do.	Fertial plant, Annaba	330,000	
Barite	Société des Mines de Baryte d'Algérie (SOMIBAR) S.p.A. [Entreprise Nationale es Produits Miniers Non Ferreux et des Substances Utiles, S.p.A (ENOF)]	Mizab	35,000	
Do.	do.	Boucaid	20,000	
Do.	Société des Baryte (SOBAR SARL)	Chaabet Abou Fares	7,000	
Bentonite	Bentonites Company of Algeria (BENTAL), [a subsidiary of Entreprise Nationale des Produits Miniers Non Ferreux et des Substances Utiles, S.p.A. (ENOF)]	Hammam Boughrara	18,000	
Do.	do.	M'Sila	15,000	
Cement:				
Portland	Algerian Cement Co. (ACC) (Lafarge S.A., 100%)	do.	5,000,000	
Do.	Ciment Blanc d'Algérie S.p.A. (Lafarge S.A., 100%)	Oggaz, Mascara Province	2,500,000	
Do.	Entreprise des Ciments et Dérivés d'Ech—Chelif	Chlef	2,000,000	
Do.	Société des Ciments de la Mitidja (Entreprise des Ciments et Dérivés du Centre, 65%, and Lafarge S.A., 35%)	Meftah	800,000	
Do.	Société des Ciments de Sour El Ghozlane (Entreprise des Ciments et Dérivés du Centre)	Sour El Ghozlane	1,000,000	
Do.	Société des Ciments Zahana (Entreprise des Ciments et Dérivés de l'Ouest)	Zahana	1,200,000	
Do.	Société des Ciments Beni Saf (Entreprise des Ciments et Dérivés de l'Ouest)	Beni Saf	1,000,000	
Do.	Société des Ciments Saïda (Entreprise des Ciments et Dérivés de l'Ouest)	Hassasna	500,000	
Do.	Société des Ciments d'Aïn-Touta (Entreprise des Ciments et Dérivés de l'Est)	Ain Touta	1,000,000	
Do.	Société des Ciments d'Aïn-Kébira (Entreprise des Ciments et Dérivés de l'Est)	Ain-Kebira	1,000,000	
Do.	Société des Ciments de Hamma-Bouziiane (Entreprise des Ciments et Dérivés de l'Est)	Hamma-Bouziiane	1,000,000	
Do.	Société des Ciments de Hadjar Soud (Entreprise des Ciments et Dérivés de l'Est)	Bekkouche	900,000	
Do.	Tabessa Cement Company S.p.A.	Tebessa	525,000	
Do.	Société des Ciments de l'Algérois (Entreprise des Ciments et Dérivés du Centre)	Rais-Hamidou	368,000	
White cement	Ciment Blanc d'Algérie S.p.A. (Lafarge S.A., 100%)	Oggaz, Mascara Province	550,000	
Coke	ArcelorMittal Annaba S.p.A. (ArcelorMittal, 70%, and Groupe Industriel Sider, 30%)	El Hadjar	1,200,000	
Copper, cathode	Société Algérienne du Zinc (Entreprise Nationale de Métallurgie et de Transformation des Métaux Non Ferreux, S.p.A., 100%)	Ghazaouet	NA	
Diatomite	Diatoms Company of Algeria S.p. A [Entreprise Nationale des Produits Miniers Non Ferreux et des Substances Utiles, S.p.A. [ENOF]]	Tahalaït Quarry, Sig	2,000	
Dolomite	Algerian Aggregates S.p.A. (ALGRAN)	Djebel Taioualet	8,000	
Feldspar	Tuféal SARL	Bouaita	83,000	
Fertilizers:				
Nitrogenous:				
Ammonium nitrate	Le Groupe Asmidal	Alzofert plant, Arzew	495,000	
Do.	do.	Fertial plant, Annaba	330,000	
Do.	do.	do.	240,000	
Do.	Fertalge Industries S.p.A.	Arzew	360,000	
Phosphatic ¹	do.	Fertial plant, Annaba	800,000	
Gold, content of mine output	Entreprise d'Exploitation des Mines d'Or S.p.A. (ENOR) (GMA Resources p.l.c., 52%, and Sonatrach S.p.A., 48%)	Tirek Mine	3	
Do.	do.	Amesmessia Mine	3 ¹	
Gypsum	32 private sector units and 13 public sector units	Oran, O. El Bouaghi, Chlef, Ghardaïa Biskra, Mascara, Bouira, M'silla, Medbea Batn, Setif, Bejaïa, Milla, Tiaret	1,700,000	
Helium million cubic meters	Helios S.p.A. (Sonatrach Valorisation Hydrocarbonés, 51%, and Helap S.p.A., 49%)	GI2Z complex, Arzew	17	
Do.	do.	Helison Production S.p.A. (Linde AG, 50%, and Sonatrach S.p.A., 50%)	GL1K complex. Skikda	17

See footnotes at end of table.

TABLE 2—Continued
ALGERIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners		Location of main facilities	Annual capacity
Iron ore	ArcelorMittal Annaba S.p.A.		Ouenza Mine	1,200,000
Do.	do.		Boukhadra Mine	525,000
Do.	Société des Mines de Fer d'Algérie S.p.A. (SOMIFER) SOMIFER S.p.A.		Khanguet Mine	50,000
Do.	do.		Anini Mine	170,000
Do.	do.		Rouina Mine	140,000
Kaolin	Société des Kaolins d'Algérie (SOALKA) S.p.A.		Tamazert, El Milia	20,000
Do.	SARL Faïenceries Algériennes		Adjarda, Chekfa	95,000
Lime	SODEPAC (ERCO Group)		Hassasna	93,000
Do.	Société de Chaux de l'Ouest		Oran	65,000
Do.	Unité Chaux de Chettaba (Société des Produits Dérivés de l'Est, 100%)		Chettaba	11,000
Limestone	Mittal Steel Annaba SPA		Oued N'hal	250,000
Marble:				
Blocks	cubic meters	Entreprise Nationale du Marbre S.p.A.	Oran and Skikda Province	10,460
Do.	do.	SMS Bouhouita SARL	Skikda Province	160
Crushed		Commercialisation du Marbre et de Dérivés de Marbre S.p.A. and Entreprise Nationale du Marbre S.p.A.	Chlef, Oran, Skikda, Tizi Ouzou, and Tlemcen Provinces	17,000
Methanol		Société Nationale de Pétrochimie S.p.A. (Sonatrach S.p.A 100% owned subsidiary, through Holding Raffinage et Chimie des Hydrocarbures)	Methanol plant, Arzew	113,000
Natural gas:				
Crude	million cubic meters	Sonatrach S.p.A.	Numerous gasfields, including Adrar, Hamra, Hassi R'Mel, and Sbaa	12,000
Do.	do.	do.	Numerous gasfields	33,000
Liquefied	do.	do.	GL2Z complex, Bethioua	18,000 ²
Do.	do.	do.	GL1Z complex, Bethioua	16,000 ²
Do.	do.	do.	GL1K complex, Skikda	6,000 ²
Do.	do.	do.	GL4Z complex, Arzew	2,000 ²
Petroleum:				
Crude	42-gallon barrels per day	do.	About 50 oilfields, including Acheb West, Amassak/Tin-Yaguene, Draa Tamra, Edjeleh, El Borma, El Gassi, Gassi-Touil East, Guellala, Hassi Messaoud North and South, Ohanet North, Rhourde El Baguel, Tin-Fouye, and Zarzaitine	1,700,000
Refined	do.	Société Nationale de Raffinage de Pétrole-NAFTEC S.p.A.	RA1K refinery, Skikda	320,000
Do.	do.	do.	RA1G refinery, Algiers	58,000
Do.	do.	do.	RA1Z refinery, Arzew	70,000
Do.	do.	do.	RHM refinery, Hassi-Messaoud	30,000
Phosphate rock		Société des Mines de Phosphates S.p.A. (SOMIPHOS) (a subsidiary of FERPHOS Group S.p.A)	Djebel Onk (Djemidjema and Kef Essenoun)	2,000,000
Pozzolan		Pozzolan Society and Building Materials SPMC)	Rockbet El Hassi	452,000
Do.		Société des Ciments Béni Saf (ERCO group)	Beni Saf	11,000
Do.		Entreprise Nationale du Fer et du Phosphate	do.	600,000
Salt, crude:				
Rock		Entreprise Nationale d'Exploitation des Carrières de Sels Industriels et Domestiques et Commercialisation des Sels S.p.A. (ENASEL)	El Outaya, Biskra	100,000
Solar		Several private companies	Bethioua, Oran; El Meghaier, El Oued, Guergour Lamri, Setif Ouled Zouai, Oum el Bouaghi, and Sidi Bouziane, Relizane	100,000
Steel:				
Crude		ArcelorMittal Annaba S.p.A. (ArcelorMittal, 70%, and and Groupe Industriel Sider, 30%)	Blast furnaces at El Hadjar, Annaba	2,100,000
Do.		do.	Electric arc furnace at El Hadjar, Annaba	400,000

See footnotes at end of table.

TABLE 2—Continued
ALGERIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Steel—Continued:			
Processed	ArcelorMittal Annaba S.p.A. (ArcelorMittal, 70%, and and Groupe Industriel Sider, 30%)	Hot-strip mill at El Hadjar, Annaba	1,800,000
Do.	do.	Cold-rolling mill at El Hadjar, Annaba	1,050,000
Do.	do.	Bar and wire rod mills at El Hadjar, Annaba	850,000
Do.	do.	Seamless tube mill at El Hadjar, Annaba	700,000
Do.	Entreprise Nationale de Tubes et de Transformation de Produits Plats (Groupe Industriel Sider, 100%)	Welded tube plant at Ghardaia	128,000
Do.	Société Algérienne de Fabrication Tubes en Spirale (Groupe Industriel Sider, 100%)	Welded tube plant at El Hadjar, Annaba	70,000
Stone	L'Algérienne des Granulats S.p.A. [Entreprise Nationale des Produits Miniers Non Ferreux et des Substances Utiles, (ENOF) S.p.A.]	Aggregate quarries at Adrad Oufarnou, Arzew, Ghedir, Gustar, Keddara, Oued Fodda, Teioueit, and Timezrit	3,000,000
Do.	Société des Diatomites d'Algérie S.p.A. [Entreprise Nationale des Produits Miniers Non Ferreux et des Substances Utiles, S.p.A. (ENOF)]	Oggaz limestone quarry, near Sig	12,500
Do.	Société des Bentonites d'Algérie S.p.A. [Entreprise Nationale des Produits Miniers Non Ferreux et des Substances Utiles, S.p.A. (ENOF)]	Limestone quarries near Beni Saf and M'Said	12,000
Sulfuric acid	Société Algérienne du Zinc (Entreprise Nationale de Métallurgie et de Transformation des Métaux Non Ferreux, 100%)	Ghazaouet	70,000
Tuff	cubic meters CTIC-CRCC Group (China)	Annaba, Boumerdes, Sidi Bel Abbes Mustganem, Mascara, Oran, Relizane	10,300,000
Do.	6 public sector units and 59 private units	Ain Temouhent, Tipaza, Tiaret	2,000,000
Urea	Fertalge Industries S.p.A.	Arzew	400,000

Do., do. Ditto. NA Not available.

¹Capacity includes 500,000 to 600,000 metric tons per year (t/yr) of compound fertilizer [nitrogen, phosphorus, and potassium (NPK), or phosphorus and potassium (PK)], or triple superphosphate (TSP), and 240,000 t/yr of single superphosphate (SSP).

²One cubic meter of liquefied natural gas is equivalent to 584 cubic meters of natural gas. Natural-gas-equivalent capacities (in billions of cubic meters) were GL2—10.3, GL1Z—10.2, GL1K—4, and GL3Z—1.1.

