



2016 Minerals Yearbook

REPUBLIC OF KOREA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF THE REPUBLIC OF KOREA

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In 2016, the Republic of Korea accounted for 15% of the world's cadmium refinery production and was the world's second-ranked producer (not including United States production); 31% of the world's indium refinery production and the world's second-ranked producer; 8% of the world's mined talc production and the fifth-ranked world producer; and 17% of the world's mined zeolite production and the third-ranked world producer. The country was the world's fifth-ranked producer of pig iron and the sixth-ranked producer of crude steel. It was the world's fourth-ranked exporter of steel (accounted for 7% of world steel exports). The Republic of Korea had reserves of the metallic minerals (antimony, copper, gold, iron ore, lead, manganese, molybdenum, silver, tin, tungsten, and zinc) and significant reserves of some industrial minerals, such as diatomite [3.3 million metric tons (Mt)], feldspar (242.5 Mt), limestone [12.7 billion metric tons (Gt)], mica (12.4 Mt), quartzite (3.0 Gt), talc (8.1 Mt), and zeolites (17.2 Mt) (World Steel Association, 2017, p. 2, 55, 92; World Trade Organization, 2017; Anderson, 2018; Bolen, 2018; Fenton, 2018; Flanagan, 2018; Korea Institute of Geoscience and Mineral Resources, 2018, p. 189; Tolcin, 2018).

Minerals in the National Economy

In 2016, the Republic of Korea's real gross domestic product (GDP) increased by 2.8% compared with 2.6% in 2015. In 2016, the country's nominal GDP was \$1.41 trillion, which ranked it as the world's 11th largest economy. The value of mining and quarrying activities accounted for 0.2% of the nominal GDP. The country produced about 91 Mt of limestone, which accounted for 75.4% of the country's mineral commodity production, in terms of value, followed by quartzite (4.7%), and clays (1.7%). By value, mining and manufacturing production together increased by 1.0% owing to increased demand for semiconductors and refined petroleum products. Mining output increased by 12% owing to an 8.2% increase in nonmetallic mineral production (mostly limestone for cement). Mined metal production decreased by 26% as a result of decreasing metal prices and the closure of two iron ore mines (the DH Development Mine in North Chungcheong Province and the Yangyang Mine in Gangwon Province) and one molybdenum mine (NMC Moland Mine in North Chungcheong Province) (Bank of Korea, 2017a, p. 15–17; Korea Institute of Geoscience and Mineral Resources, 2017b, p. 10–11, 23; World Bank, The, 2018).

In 2016, the country's outward foreign direct investment (FDI) in the mining sector decreased to \$2.8 billion from \$3.5 billion in 2015. The leading recipients of this FDI were Canada (\$1.0 billion), Australia (\$500 million), and Peru (\$200 million) (Export Import Bank of Korea, 2017).

Government Policies and Programs

The Ministry of Trade, Industry, and Energy (MOTIE) was responsible for implementing the country's mineral laws and policies. The Korea Mining Industry Act (No. 13730, as amended in 2016) provided the basic guidelines for extraction of the country's mineral resources (National Law Information Center, 2016).

Production

Data on mineral production are in table 1. In 2016, production of mined silver increased by 43% to 6,579 kilograms (kg) owing to the startup of Goldensun Co. Ltd.'s Gasa-do Mine in Jeonman Province. Other substantial increases in production included that of marble, which increased by 160%; refined lead (primary), by 52%; sulfur (from natural gas and petroleum), 38%; diatomaceous earth, 34%; fuel oil, 22%; ferronickel (gross weight), 15%; ferronickel (Ni content), 15%; refined lead (secondary), 11%; and silver (primary smelter), 10%. The production of mined gold decreased by 21% to 205 kg owing to the mining of ores at deeper depths. Other decreases in production included that of talc, by 65%; zeolites, 36%; mica, 26%; silicomanganese, 23%; bentonite, 19%; and mined zinc, 12% (Korea Institute of Geoscience and Mineral Resources, 2017a, p. 31, 49).

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities. In 2016, there were 362 active mines (down from 378 in 2015). The mining industry employed 7,221 people, which was an increase of 6% from the number employed in 2016. Most mines (271) had annual revenue of less than \$1.0 million, although 22 mines that produced limestone and (or) coal earned more than \$10 million each.

Korea Coal Corp., Korea Gas Corp., Korea National Oil Corp. (KNOC), and Korea Resources Corp. (KORES) were state owned under the MOTIE. KNOC was involved in 31 petroleum exploration, development, and production projects in 17 countries in the North Sea and North America. KORES had foreign investments in 31 projects across 17 countries; these projects were at various stages of development and included those for lithium and rare-earth metals (Africa); coal (Australia); rare-earth metals (China); nickel (Madagascar); cobalt, copper, and zinc sulfate (Mexico); and copper (South America) (Korea National Oil Corp., 2016; Korea Institute of Geoscience and Mineral Resources, 2017a, p. 8–13; Korea Resource Corp., 2018).

Mineral Trade

In 2016, the Republic of Korea imported metallic and nonmetallic minerals to supply 99.6% and 23.1% of domestic demand, respectively; thus, the supply of these commodities was vulnerable to changes in world markets. Imports of metallic ores and coal decreased in value by 9% to \$10.7 billion and by 4% to \$9.2 billion, respectively, owing to decreases in the amounts of copper and iron ore imported and the decrease in the market price of coal. Imports of nonmetallic minerals were at about the same level (valued at \$619 million) as in 2015.

Exports of metallic and nonmetallic ores decreased in value by 44% to \$76 million and by 28% to \$133 million, respectively, owing to decreases in the amounts of copper ore and sulfur exported. Exports of coal decreased in value to \$0.4 million from \$4.2 million owing to a decrease in the amount of anthracite exported (Korea Institute of Geoscience and Mineral Resources, 2017b, p. 12–13; 2017c, p. 21–22).

The country's leading import partner for nonfuel minerals was Australia, which supplied \$4.30 billion of the Republic of Korea's imports, followed by Mexico (\$952 million) and Peru (\$937 million). Iron ore imports were valued at \$4.2 billion (KRW4.7 trillion)¹ and accounted for 36% of the Republic of Korea's nonfuel mineral imports in 2016; Australia supplied 70.0% of these imports, followed by Brazil (16.4%), South Africa (5.9%), Canada (3.1%), and Chile (2.1%). Copper ore imports were valued at \$2.8 billion in 2016; Australia supplied 20.4% of these imports, followed by Chile (19.8%), Canada (19.6%), Indonesia (17.5%), and Peru (8.5%) (Korea Institute of Geoscience and Mineral Resources 2017b, p. 17–20, 35).

In 2016, the Republic of Korea's imports of nonfuel minerals from the United States decreased in value by 22% to \$1.4 billion; those of coal, by 20% to \$374 million; and those of iron and steel mill products, by 7% to \$101 million. Exports of nonfuel minerals to the United States decreased in value by 15% to \$624 million; those of coal increased by 29% to \$63 million; and those of iron and steel mill products decreased by 20% to \$1.5 billion.

The Republic of Korea exported a total of 30.3 Mt of steel and was the world's fourth-ranked exporter of steel. China was the leading destination for the Republic of Korea's steel exports (receiving 14%, or 4.4 Mt), followed by the United States (12%, or 3.7 Mt), Japan (12%, or 3.5 Mt), India (8%, or 2.4 Mt), and Thailand (6%, or 1.8 Mt) (U.S. International Trade Administration, 2017, p. 1–3; U.S. Census Bureau, 2018a, b).

Commodity Review

Metals

Cadmium.—In 2016, Korea Zinc Co., Ltd. produced more than 4,400 metric tons (t) of cadmium metal and Young Poong Corp. produced more than 1,200 t. Most of the cadmium produced at the refineries operated by these companies was exported to China, India, and Japan (table 2; Global

¹Where necessary, values have been converted from Republic of Korea won (KRW) to U.S. dollars (US\$) at the average annual exchange rate of KRW1,179=US\$1.00, for 2015 and KRW1,160.5=US\$1.00, for 2016.

Trade Information Services Inc., 2017; Young Poong Corp., 2017, p. 20).

Copper.—A small amount of copper (Cu content; 117 t of ore) was produced as a coproduct at the Gukjeon lead-zinc mine in South Gyeongsang Province in 2016. The country imported 1.56 Mt of copper ore and concentrate (a decrease of 12% compared with that of 2015) and produced about 522,400 t of primary refined copper (a decrease of 1.4% compared with that of 2015) (Korea Institute of Geoscience and Mineral Resources, 2017a, p. 208; 2017b, p. 35).

Gold.—In 2016, the Korea Institute of Geoscience and Mineral Resources (KIGAM)-Heesong Geotek discovered new gold-bearing veins containing 200,000 t of ore (628 kg of gold content) in Jeonman Province. Goldensun Co., Ltd. (a major gold-silver mining company in the country) was to operate this mine. Goldensun's Eunsan Mine, which was the major gold mine in the county, produced 199 kg of gold in 2016. Imports of copper, gold, and (or) zinc ores, and refined gold accounted for 93% of consumption. Refined gold production decreased to 3.0 t in 2016 from 5.3 t in 2015. Exports of refined and reprocessed gold increased by 27% to 33.5 t in 2016 owing to increased exports to Vietnam for Samsung Electronics Co. Ltd.'s cell phone plants (Korea Institute of Geoscience and Mineral Resources, 2016a; 2016b, p. 21; 2017a, p. 37–39; 2017c, p. 21).

Iron and Steel.—Iron ore production, mostly by Handok Iron & Steel Co., Ltd.'s Sinyemi Mine in Gangwon Province, was 445,000 t in 2016. Owing to reduced demand by the shipbuilding and automotive industries, imports of iron ore decreased to 72 Mt in 2016 from 73 Mt in 2015, making the country the world's third-ranked iron ore importer (accounting for 5% of the world total in terms of the tonnage) following China (67%) and Japan (9%). The country produced about 46 Mt of pig iron and 69 Mt of crude steel in 2016, which was a decrease of 2.7% and 1.6%, respectively, owing to the malfunction of a blast furnace at Hyundai Steel Co., Ltd.'s Dangjin plant (Korea Institute of Geoscience and Mineral Resources, 2016b; 2017a, p. 93–94; 2017b, p. 43; World Steel Association, 2017, p. 92, 106).

Industrial Minerals

Stone (Calcite, Dolomite, and Limestone).—The Republic of Korea produced about 91 Mt of limestone in 2016, which accounted for 98% of domestic consumption. Production had increased by 2%, on average, in each year since 2011 owing to increased domestic demand by the cement industry. The leading domestic users of limestone were the cement industry (accounted for 74%), the steel manufacturing industry (11%), and the chemical industry (11%).

Domestic consumption of calcite was mainly for the production of ground calcium carbonate (accounted for 50%), steel (16%), construction material (14%), and cement (11%). The leading domestic users of dolomite were the construction industry (accounted for 26%), the steel industry (24%), the cement industry (11%), and the agriculture industry (7%). Production of calcite decreased by 8.0% to 2.0 Mt, and that of dolomite decreased by 1.0% to 2.6 Mt owing to reduced demand for these minerals (Korea Institute of Geoscience and Mineral Resource, 2017b, p. 47; 2017c, p. 21, 66, 122–133).

Zeolites.—Zeolites produced in the Republic of Korea were mined only in North Gyeongsang Province. Production of zeolites decreased by 36% to 121,730 t in 2016. The largest amount of production was from the Dong-sin Zeo Mine in the Gyeongju area, followed by the Guryong Baekto Mine and the Woo-il Zeolite[s] Mine (Korea Institute of Geoscience and Mineral Resources, 2017c, p. 40).

Mineral Fuels and Other Sources of Energy

Coal.—Anthracite and bituminous coal accounted for 2% and 26%, respectively, of the country's primary energy consumption. Domestic consumption of anthracite increased by 2.9% to 10.8 Mt in 2016 and domestic production supplied 16% of that amount, or 1.7 Mt. The industrial sector accounted for 67.6% of domestic anthracite consumption, followed by the power generation sector (20.8%), and by residential and commercial uses (11.5%). The country lacked reserves of bituminous coal and thus relied on imports to meet domestic demand. Domestic consumption of bituminous coal decreased by 4.6% to 118 Mt in 2016; consumption was for power generation (66%), use by the iron and steel industry (28%), and for cement production and other uses (6%) (Korea Energy Economics Institute, 2017, p. 152–161).

Petroleum, Liquefied Natural Gas, and Refinery Products.—Petroleum accounted for 30% of the country's primary energy consumption. Imports of crude petroleum increased by 5% to 1.08 billion barrels in 2016. About 86% of imports came from Middle Eastern countries, including Saudi Arabia (supplied 30% of the total imports), Kuwait (15%), Iraq (13%), and Iran (10%). Domestic demand for liquefied natural gas (LNG) increased by about 4% to 34.9 Mt. Imports of LNG increased by 0.3% to 33.4 Mt and was mainly from Qatar (36%), Australia (14%), and Indonesia (13%). The Republic of Korea was the world's sixth-ranked petroleum refiner (following the United States, China, Russia, India, and Japan, in order of output); it had a petroleum refining capacity of 3.2 million barrels per day. Production of petroleum products was 1,158 million barrels (Mbbbl) in 2016, including imports, 335 Mbbbl; exports, 488 Mbbbl; and domestic supply, 924 Mbbbl (BP p.l.c., 2017, p. 23; Korea Energy Economics Institute, 2017, p. 83, 86–87, 114–115).

Uranium.—Nuclear energy accounted for 11.6% of the country's primary energy consumption and for 30% of its electric power supply. All domestic consumption relied on imports owing to the low ore grade of domestic resources and environmental issues; resources along the Okcheon metamorphic belt were estimated to be 95 Mt at a grade of 0.032% U₃O₈. In 2016, the major import partners were Australia, Canada, France, Germany, Kazakhstan, and Niger (Optiro Pty, Ltd., 2015, p. 10; Ministry of Trade, Industry, and Energy, 2016, p. 264; Korea Energy Economics Institute, 2017, p. 7–9).

Outlook

The Republic of Korea's GDP was expected to increase in 2017 by 2.6%, and in 2018 by 2.9%. Investment in facilities and imports is expected to increase as external demand recovers, although domestic construction and private consumption will

likely decrease (Bank of Korea, 2017b). Production of limestone and feldspar are expected to decrease beginning in 2017 owing to decreased demand by the domestic construction industry.

The Republic of Korea relied on mineral fuels for more than 97% of its energy supply. The Government planned to promote increased use of renewable energy in order to reduce the country's dependence on imported mineral fuels (Ministry of Trade, Industry, and Energy, 2014).

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TABLE 1
REPUBLIC OF KOREA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2012	2013	2014	2015	2016
METALS					
Cadmium, refinery production, primary, metal	3,904	3,904	5,645 ^r	5,600 ^{r, c}	5,600 ^e
Copper					
Mine production, Cu content	--	--	--	--	117
Refinery production:					
Primary	493,200 ^r	495,400 ^r	491,200 ^r	515,300 ^r	522,400
Secondary	96,200 ^r	109,800 ^r	110,500 ^r	134,400 ^r	124,800
Smelter production:					
Primary	477,300	478,800	500,000	511,200	510,000
Secondary	144,500	125,100	120,000	125,000	125,000
Ferroalloys:					
Ferromanganese	317,000 ^r	335,000 ^r	360,000 ^r	300,000 ^r	295,000
Silicomanganese	200,000 ^r	268,000 ^r	235,000 ^r	175,000 ^r	135,000
Ferronickel:					
Gross weight	54,100	65,800	59,100 ^e	59,100	67,700 ^e
Ni content	24,400	28,100	24,500	41,639	47,714
Gold:					
Mine production, Au content	336	413 ^r	283 ^r	259 ^r	205
Refinery production	47,992 ^r	43,354 ^r	46,207	55,963 ^r	59,411
Indium, refinery production, primary, In content	180,000	175,000	195,000	195,000	210,000
Iron and steel:					
Pig iron	41,734	41,045	46,909	47,639	46,336
Raw steel	69,073	66,061	71,542	69,670	68,575
Iron ore, mine:					
Gross weight	593 ^r	663 ^r	693 ^r	445 ^r	445
Fe content	332 ^r	371 ^r	388 ^r	249 ^r	249
Lead:					
Mine production, Pb content	1,940	2,500	2,764	2,921	2,839
Refinery production:					
Primary	280,000	227,700	299,000 ^r	291,000 ^r	441,000
Secondary	180	200	340	350	390
Magnesium metal, primary ^c	2,500	7,500	10,000	10,000	10,000
Molybdenum, mine production, Mo content	377	428	479	468	--
Silver:					
Mine production, Ag content	2,649 ^r	2,925 ^r	3,289	4,586 ^r	6,579
Smelter production, primary, metal	2,547,315 ^r	2,467,139 ^r	3,117,010 ^r	2,967,119 ^r	3,270,000
Zinc:					
Mine production, Zn content	1,430 ^r	1,750 ^r	1,918 ^r	2,070	1,825
Smelter production, primary	876,550	885,804	900,943	934,949	1,012,763
INDUSTRIAL MINERALS					
Cement and clinker:					
Clinker	45,155	44,382 ^r	44,816	47,015 ^r	49,148
Hydraulic	46,862 ^r	47,291 ^r	47,048 ^r	52,044 ^r	56,747
Clay and shale:					
Bentonite	88,500 ^e	80,188	71,850	78,400 ^e	63,834
Fuller's earth	57,787	51,309	54,001	87,094	81,688
Kaolin	514,841	532,050	429,081	356,866	366,511
Pottery	281,762	327,336	253,668	230,921	220,462
Unspecified	968,014	801,264	719,390	862,339	773,381
Diatomite, diatomaceous earth	6,000 ^e	34,000 ^e	65,893 ^r	15,310 ^r	20,564
Feldspar, mine production	360,413	343,241	528,958 ^r	601,030 ^r	654,000 ^e
Lime ^c	5,200	5,100	5,100	5,100	5,100
Mica, all grades	25,594	25,143	24,205 ^r	17,405 ^r	12,934
Salt	308,847	421,259	303,510	310,000	323,000

See footnotes at end of table.

TABLE 1—Continued
 REPUBLIC OF KOREA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2012	2013	2014	2015	2016	
INDUSTRIAL MINERALS—Continued						
Stone, sand, and gravel:						
Silica, mine production:						
Quartzite	thousand metric tons	4,184	4,194	4,057	3,569 ^r	3,778
Sand	do.	709	747	732	661	682
Stone, crushed:						
Dolomite	do.	2,474	2,610	2,558	2,626	2,593
Limestone	do.	82,413	83,802	86,191	88,199	91,241
Marble	do.	35	8	8	5	13
Stone, size and shape unspecified, calcite	do.	2,025	2,170	2,426	2,221	2,044
Sulfur, byproduct, S content:						
Metallurgy		1,078,400	1,078,400	1,078,000	1,078,000	1,078,000
Natural gas and petroleum		1,525,000	1,600,800	1,200,000	1,450,000	2,000,000
Talc and related materials:						
Pyrophyllite		483,133	524,881	622,865	596,860 ^r	590,000
Talc		21,625	2,808	5,484	6,371 ^r	2,247
Zeolites		245,285	221,298	203,051	191,207	121,730
MINERAL FUELS AND RELATED MATERIALS						
Coal, anthracite	thousand metric tons	2,094	1,815	1,748	1,764	1,727
Coke, metallurgical	do.	14,597	14,594	18,307	19,066	19,000 ^e
Gas, liquefied natural	do.	334	355	247	144	188
Petroleum, refinery production:						
Diesel	thousand 42-gallon barrels	309,728	297,771	314,495	333,415	338,517
Fuel oil	do.	102,612	79,459	55,174	57,973	70,964
Gasoline	do.	137,381	135,010	145,055	157,320	153,557
Kerosene	do.	26,612	21,498	16,743	18,492	19,520
Liquefied petroleum gas	do.	17,253	20,039	24,341	25,367	26,026
Naphtha	do.	207,097	207,638	218,092	249,931	259,814
Others ³	do.	233,993	240,534	256,170	274,461	289,214
Total	do.	1,034,676	1,001,949 ^r	1,030,070 ^r	1,116,959	1,157,612

^eEstimated; estimated data are rounded to no more than three significant digits. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through March 14, 2018

²In addition to the commodities listed, the Republic of Korea also produced bismuth, carbon black, coal, coke, graphite, gypsum, magnesite, magnesium, phosphate rock, secondary iron, iron and steel semimanufactures, titanium, and thorium, but available information was inadequate to make reliable estimates of output.

³Includes bitumens, fuel oil byproducts, jet fuel, lubricants, paraffin waxes, petroleum coke, refinery gas, and solvents.

TABLE 2
REPUBLIC OF KOREA: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Bismuth, metal	metric tons	Korea Zinc Co. Ltd.	Onsan refinery in Ulsan	950
Cadmium	do.	do.	do.	5,100
Do.	do.	Young Poong Corp.	Sukpo refinery in North Gyeongsang Province	1,750
Cement		Ssangyong Cement Industrial Co. Ltd.	Plants at Tonghae, Kwang Yang, Munhyung, Pukpyong, and Yeongwol	16,749
Do.		SungShin Cement Manufacturing Co. Ltd.	Tanyang plant	13,700
Do.		Sampyo (formerly Tong Yang) Cement	Plants at Pukpyong and Samchok	11,580
Do.		Halla Cement Corp.	Plants at Kwang Yang and Okkye	9,500
Do.		Hyundai Cement Co. Ltd.	Plants at Tanyang and Yongwol	8,600
Do.		Hanil Cement Manufacturing Co.	Plants at Chungbuk and Tanyang	7,200
Do.		Asia Cement Manufacturing Co. Ltd.	Plants at Daegu and Jecheon	4,600
Coal		Korea Coal Corp.	Mines at Changsung, Dogae, and Hwasoon	2,500
Copper, metal, primary		Korea Zinc Co. Ltd.	Onsan in Ulsan	25
Do.		LS-Nikko Copper Inc.	do.	680
Do.		Young Poong Corp.	Sukpo refinery in North Gyeongsang Province	5
Gas, natural	thousand cubic meters per day	Korea National Oil Corp.	Donghae-1 (Ulleung Basin)	1,300
Gold:				
In concentrate	kilograms	Hangum Co. Ltd.	Muguk Mine, Haenam, Jeonnam (South Jeolla) Province	1,600
do.	do.	Goldensun Co. Ltd.	Eunsan Mine, Haenam, South Jeolla Province	500
Refined	do.	Korea Zinc Co. Ltd.	Onsan, Ulsan	50,000
Do.	do.	LS-Nikko Copper Inc.	do.	60,000
Indium, metal	do.	Korea Zinc Co. Ltd.	do.	55,000
Iron ore		Handok Iron & Steel Co., Ltd.	Sinyemi Mine, Jeongseon, Gangwon Province	600
Lead, refined		Korea Zinc Co. Ltd.	Gangwon	423
Magnesium		Pohang Iron and Steel Co. Ltd.	Magnesium refinery plant, Gangneung, Gangwon Province	10
Do.		do.	Magnesium metal sheet plant, Suncheon, South Jeolla Province	3
Molybdenum	metric tons	Korea Resources Corp. (KORES)	Mine at Uljin; Smelter at Yeosu, South Jeolla Province	6,000
Do.	do.	NMC Resource Corp., 100%	Moland Mine, at Daejang-ri, Geumseongmyeon, Jecheon, Chungbuk Province	900
Nickel:				
Ferronickel		Pohang Iron and Steel Co. Ltd.	Gwangyang ferronickel plant	54
Metal		Vale S.A., 25%, and Korea Zinc Co. Ltd., 19%	Onsan nickel refinery	30
Petroleum:				
Crude	42-gallon barrels per day	Korea National Oil Corp.	Donghae-1 (Ulleung Basin)	185
Refinery products	thousand 42-gallon barrels per day	SK Energy Corp.	Ulsan and Incheon	1,115
Do.	do.	GS Caltex	Yocheon in Yosu	785
Do.	do.	Hyundai Oil Refinery Co.	Daesan plant in Sosan	390
Do.	do.	S-Oil Corp.	Onsan in Ulsan	669
Pyrophyllite		Hankook Mineral Powder Co. Ltd.	Wan-Do, Sungsan, Hwansan, Okmesan, Dae-Do, and Chin-Do Mines in Haenam	446
Do.		Jinhae Pyrophyllite	Milyang, Yangsan, Kimhae, Pusan, and Gyeongnam Mines in Dong-Nae	446
Silver:				
In concentrate	kilograms	Goldensun Co. Ltd.	Haenam, South Jeolla Province	8,250
Refined	metric tons	Korea Zinc Co. Ltd.	Onsan in Ulsan	2,400
Do.	do.	LS-Nikko Copper Inc.	do.	1,200

See footnotes at end of table.

TABLE 2—Continued
 REPUBLIC OF KOREA: STRUCTURE OF THE MINERAL INDUSTRY IN 2016

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Steel, raw	POSCO Ltd.	Gwangyang Works	15,000
Do.	do.	Pohang Works	17,400
Do.	Hyundai Steel Co. Ltd.	Inchon plant	4,800
Do.	do.	Pohang plant	3,200
Do.	do.	Dangjin plant	23,000
Do.	Dongkuk Steel Mill Co. Ltd.	Inchon Works	1,450
Do.	do.	Pohang Works	3,600
Do.	Korea Iron and Steel Co. Ltd.	Masan and Changwon Works	1,200
Zinc	Young Poong Corp.	Sukpo refinery in North Gyeongsang Province	400
Do.	Korea Zinc Co. Ltd.	Onsan refinery	700
Zeolites	Dong-sin Co. Ltd.	Dong-sin Zeo Mine in Gyeongju, Gyeongbuk Province	150,000
Do.	Private owner	Guryong Baekto Mine in Pohang	50,000
Do.	do.	Woo-il Zeolite Mine in Pohang	21,000

Do., do. Ditto.