



2007 Minerals Yearbook

PHILIPPINES

THE MINERAL INDUSTRY OF THE PHILIPPINES

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In 2007, the Philippines produced approximately 5% of the total world production of nickel (Kuck, 2009). Other minerals produced in the Philippines included cement, chromium, copper, gold, marine salt, and silver (table 1).

Minerals in the National Economy

In 2007, the mining and quarrying sector contributed 1.49% of the Philippine gross domestic product (GDP) compared with 1.16% (revised) in 2006, which was an increase of about 28%. The construction sector contributed 4.2% of the GDP in 2007 compared with 3.68% (revised) in 2006, which was an increase of 14% (Bangko Sentral ng Pilipinas, 2008).

Production

During 2007, mineral production increased mainly for the following commodities: coal (which increased by 47.2%), mine output copper (33.2%), nickel (31%), crude steel (28.7%), silver (18.1%), and gold (7.3%). The mineral commodities for which production decreased significantly were chromite (which decreased by 32.4%) and refined copper (11.5%). The polymetallic Rapu-Rapu mining project operated by Lafayette Mining Ltd. reported zinc production for the first time; production for the year amounted to 7,364 metric tons (t) (table 1).

Structure of the Mineral Industry

The significant producers of mineral commodities in 2007 were Lepanto Consolidated Mining Co. (gold and silver), Nickel Asia Corp. (nickel from the Cagdianao and the Taganito projects), Philex Mining Corp. of Canada (copper and gold), and TVI Pacific Inc. (gold and silver). The country's major mineral industry facilities are listed in table 2.

Mineral Trade

In 2007, total trade in the Philippines increased by about 6.9% to \$105.98 billion from \$99.18 billion in 2006. The total value of exports increased by approximately 6.5% to \$50.47 billion from \$47.41 billion in 2006. The total value of imports was \$55.51 billion compared with \$51.77 billion in 2006, which was an increase of 7.2%. Exports of cathodes and sections of cathodes of refined copper, and petroleum products were valued at \$2.4 billion (or about 4.8% of the total export value) compared with \$2.15 billion in 2006, which was an increase of 11.6%. Imports of iron and steel and mineral fuels and related materials were valued at \$10.8 billion (or about 10.2% of the total import value) compared with \$9.19 billion in 2006, which was an increase of 17.5% (National Statistics Office of the Philippines, 2008).

In 2007, the Philippines' main trading partner was the United States, which accounted for 15.5% of the country's total trade;

exports to and imports from the United States were valued at \$8.59 billion and \$7.84 billion, respectively. The total trade in 2007 between the Philippines and the United States was valued at \$16.43 billion compared with \$17.13 billion in 2006, which represented a 4.1% decrease in trade. The second ranked trading partner was Japan, which accounted for 13.3% of total trade; exports to Japan were valued at \$7.3 billion and imports from Japan were valued at \$6.84 billion. Total trade between the two countries was valued at \$14.14 billion in 2007 compared with \$15.19 billion in 2006, which was a decrease of almost 7%. The country's third and fourth ranked trading partners were China and Singapore, which accounted for 9.2% and 8.8% of the Philippine's total trade, respectively. Exports to China were valued at \$5.75 billion and imports from China were valued at \$4 billion for a total of \$9.75 billion in 2007 compared with \$8.28 billion in 2006, or an increase of 17.8%. Exports to Singapore were valued at \$3.14 billion and imports from Singapore were valued at \$6.22 billion for a total of \$9.36 billion in 2007 compared with \$7.89 billion in 2006, or an increase of 18.6% (National Statistics Office of the Philippines, 2008).

Commodity Review

Metals

Chromium.—Chromite production plummeted in 2007 to 31,592 t from the 46,728 t reported in 2006 (table 1). The decrease in production was mainly owing to lower ore grades reported at mine sites and lower market demand. The following projects reported decreases in production: the Dignat chromite project, the Homonhon chromite project, and the Masinloc chromite project (National Statistical Coordination Board, 2007a, b, d; Mines and Geosciences Bureau, 2008).

Copper.—Mined copper production in 2007 reached 22,862 t of metal content, which represented an increase of more than 30% compared with production in 2006 of 17,161 t. Copper mine output was reported from the Padcal copper project (20,568 t) and (for the first time) from the Rapu-Rapu polymetallic project (2,294 t), which accounted for the country's overall increase in copper production. On the other hand, production of refined copper dropped to 160,200 t from 181,000 t during the same period (table 1; Mines and Geosciences Bureau, 2008).

Gold.—Philippine gold production in 2007 increased to 38,792 kilograms (kg) from 36,141 kg in 2006 despite the decrease in gold purchases by the Bangko Sentral ng Pilipinas (Philippines Central Bank) (table 1). The growth in gold production was mainly owing to increases in small-scale mining production and high prices on the world market. Based on gold purchases by the Bangko Sentral ng Pilipinas, small-scale mines produced 31,193 kg of gold in 2007, which represents an increase in production of 6.24% from the 29,361 kg of gold produced in 2006. Projects that started reporting gold

production in 2007 included the APEX Maco operation (61 kg), the Rapu-Rapu polymetallic project (52 kg), and the Diwalwal project (2 kg) (National Statistical Coordination Board, 2007a-c; Mines and Geosciences Bureau, 2008).

Nickel.—In 2007, nickel production increased to 84,740 t from 64,705 t (revised) in 2006 (table 1). During 2007, high demand for nickel from the stainless steel industry and the expansion in mine operations drove nickel production in the Philippines to a record high. The main increase in nickel production was reported by the wholly Philippine-owned company, SR Metals, Inc., whose production in 2007 soared to 20,920 t compared with 2,675 t in 2006. Another factor that contributed to the increase in nickel production was that projects started reporting production in 2007, including the Adlay-Cagdianao-Tandawa nickel project (7,235 t), the Berong nickel project (4,150 t), the Cagdianao nickel project (3,759 t), and the Sta. Cruz-Candelaria nickel project (981 t) (National Statistical Coordination Board, 2007a, d; Mines and Geosciences Bureau, 2008).

Mineral Fuels

Coal.—In 2007, production of coal was 3.72 million metric tons (Mt) compared with 2.53 Mt reported in 2006 (table 1). The increase in coal production was attributable principally to high demand in both the local and the world markets as the result of increases in oil prices (National Statistical Coordination Board, 2007b-c).

Outlook

In 2008, mineral production in the Philippines will likely be influenced by the world market prices and the demand for commodities. Based on the 2007 performance of the mineral

industry, production of commodities in the Philippines will likely continue to be dominated by coal, crude steel, gold, nickel, and silver. Commodity production increases will also be dependent on the performance of the many projects that started reporting production in 2007.

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TABLE 1
PHILIPPINES: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2003	2004	2005	2006	2007
METALS					
Chromium, chromite, gross weight	33,780	42,140	38,081	46,728	31,592
Copper:					
Mine output, Cu content	20,414	15,984	16,320	17,161	22,862
Metal:					
Smelter	111,600	120,000	170,000	162,000	162,000
Refined	171,152	174,628	172,000	181,000	160,200
Gold, mine output, Au content kilograms	37,844	35,464	37,490	36,141	38,792
Iron and steel, steel, crude ^c thousand metric tons	550	550	470 ^r	558 ^r	718
Lead, metal, secondary refined	27,000	29,000	30,000	30,000 ^r	30,000
Nickel, mine output, Ni content	19,537	16,973	26,636	64,705 ^r	84,740
Silver, mine output, Ag content kilograms	9,533	9,315	19,150	23,502 ^r	27,754
Zinc, Zn content	--	--	--	--	7,364
INDUSTRIAL MINERALS					
Cement, hydraulic thousand metric tons	13,067	13,346	15,494	12,033	13,048
Clays:					
Bentonite	3,720	3,560	1,000	1,000	1,148
Red	5,000 ^e	8,920	3,530	5,420 ^r	6,742
White	20,700	13,310	12,220	7,138 ^r	7,224
Other	800	6,500	13,400	4,901 ^r	4,883
Feldspar	30,000 ^e	32,110	11,850	15,176 ^{r,3}	14,837
Lime ^e	9,000	9,000	9,000	3,313 ^{r,3}	3,822 ³
Perlite	6,000 ^e	5,510	4,410	4,352 ^r	4,515
Phosphate rock	400,000 ^e	2,380 ^r	2,180 ^r	1,963 ^r	1,961
Pyrite and pyrrhotite, including cuprous, gross weight ^f	300,000	300,000	300,000	300,000	300,000
Salt, marine	429,160	427,620	420,950	418,210 ^r	437,689
Sand and gravel:					
Silica sand thousand metric tons	170	237	224	179 ^r	221
Other ⁴ thousand cubic meters	36,359	36,133	36,792	38,455 ^r	40,076
Stone:					
Dolomite	750,000 ^e	1,408,870	874,730	1,083,269 ^r	1,092,748
Limestone ⁵ thousand metric tons	16,432	20,830 ^r	21,112 ^r	21,888 ^r	26,419
Marble, dimension, unfinished cubic meters	49,060	4,740	5,120	3,964 ^r	4,791
Volcanic cinder ⁶ do.	2,000 ^e	8,470	8,660	6,378 ^r	6,177
Tuff	1,500 ^e	19,250	17,850	17,590 ^r	16,490
Quartz ^e	50,000	50,000	50,000	50,000	50,000
Crushed, broken, other ^{e,7} thousand cubic meters	2,500	2,500	2,500	2,735 ^{r,3}	2,810 ³
Sulfur, all forms ^e	180,000	180,000	180,000	180,000	180,000
MINERAL FUELS AND RELATED MATERIALS					
Coal, all grades thousand metric tons	2,029	2,727	3,165	2,529	3,722
Petroleum:					
Crude thousand 42-gallon barrels	2,000 ^e	139	208	181	180 ^e
Refinery products: ^e					
Liquefied petroleum gas do.	25,200	30,600 ³	31,000	31,000	31,000
Gasoline do.	79,800	127,600 ³	128,000	128,000	128,000
Jet fuel do.	29,400	45,800 ³	46,000	46,000	46,000
Kerosene do.	21,000	17,700 ³	18,000	18,000	18,000
Distillate fuel oil do.	168,000	170,000	170,000	170,000	170,000
Residual fuel oil do.	215,000	234,200 ³	234,000	234,000	234,000
Refinery fuel and losses do.	230,000	230,000	230,000	230,000	230,000
Other do.	225,000	225,000	225,000	225,000	225,000
Total do.	993,000	996,000	1,100,000	1,100,000	1,100,000

See footnotes at end of table.

TABLE 1—Continued
PHILIPPINES: PRODUCTION OF MINERAL COMMODITIES¹

⁶Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ⁷Revised. do. Ditto. -- Zero.

¹Table includes data available through March 31, 2009.

²In addition to the commodities listed, the Philippines produces platinum-group metals as byproducts of other metal production, but available information is inadequate to make estimates of output.

³Reported figure.

⁴Includes "pebbles" and "soil" not further described.

⁵Include limestone for agriculture, cement manufacturing, industrial, and other.

⁶Reported as "Black cinder" for years 2006 and 2007 by the Republic of the Philippines Mines and Geosciences Bureau.

⁷Includes materials described as rock, crushed or broken/blasted; stones, cobbles, and boulders; pebbles; rock aggregates; and broken adobe.

TABLE 2
PHILIPPINES: STRUCTURE OF THE MINERAL INDUSTRY IN 2007

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement	Fortune Cement Corp.	Bulacan plant at Norzagaray, Bulacan Province; Batangas plant at Taysan, Batangas Province	2,100,000.
Do.	Holcim Philippines, Inc.	Bulacan plant at Norzagaray, Bulacan Province; Davao plant at Barrio Ilang, Davao City; La Union plant at Bacnotan, La Union Province; Lugait plant at Lugait, Misamis Oriental Province	7,200,000.
Do.	Solid Cement Corp., APO Cement Corp., and Rizal Cement Corp.	Cement plant at three locations— Naga, Cebu Province (APO Cement Corp.); Antipolo City, Rizal Province (Solid Cement Corp.); Binangonan, Rizal Province (Rizal Cement Corp.)	4,300,000.
Chromite	Consolidated Mines Inc. (mineral claim owner) and Benguet Corp. (mine operator)	Masinloc chromite mine (Coto chromite deposit) located in Coto 27 kilometers east of the Port of Mansiloc in Zambales Province	5,000.
Do.	Krominco Inc.	Dinagat Chromite project—Redondo Mine (Mt. Redondo deposit) located in the Municipality of Loreto, Dinagat Island	26,000.
Do.	Heritage Resources Mining Corp.	Homonhon chromite project	17,000.
Copper	Lepanto Consolidated Mining Co.	Victoria and Teresa Mines located in Mankayan, Benguet Province	200.
Do.	Philex Mining Corp. (through its subsidiary Philex Gold Inc.), 81%	Padcal copper project located in Tuba, Benguet Province, Island of Luzon	21,000.
Do.	Glencore International AG	Philippine Associated Smelting and Refining Corp. (PASAR), located in Isabel, Leyte Province	250,000 smelter; 173,000 refinery.
Do.	Lafayette Mining Ltd., 75%, and LG International and Korean Resources Corp., 25%	Rapu-Rapu Mine under the Rapu-Rapu polymetallic project, located in Albay Province	36,000.
Gold	kilograms Lepanto Consolidated Mining Co.	Victoria and Teresa Mines located in Mankayan, Benguet Province	2,000.
Do.	do. Philex Mining Corp. (through its subsidiary Philex Gold Inc.), 81%	Padcal Mine (Sto. Tomas II deposit) located in Tuba, Benguet Province, Island of Luzon	5,000.
Do.	do. TVI Resources Development Philippine Inc., 100%	Canatuan project, located east of Siocon, Province of Zamboanga del Norte, Mindanao Island	500.
Do.	do. Lafayette Mining Ltd., 75%, and LG International and Korean Resources Corp., 25%	Rapu-Rapu Mine under the Rapu-Rapu polymetallic project, located in Albay Province	1,500.
Do.	do. Philippine Mining Development Corp.	Diwalwal Direct State Development Project at Mount Diwalwal in Davao del Norte Province	100.
Do.	do. APEX Mining Company Inc.	APEX Maco operation	100.
Nickel	Coral Bay Nickel Corp. (Sumitomo Metal Mining Co. Ltd., 54%; Mitsui & Co. Ltd. 18%; Rio Tuba Nickel Mining Corp., 10%; and Nickel Asia Corp., 6%)	Coral Bay nickel high pressure acid leach (HPAL) plant located on Palawan Island in southwest Philippines	10,000. ¹
Do.	Nickel Asia Corp., 100%	Cagdianao nickel project located near Barangay Valencia on Dinagat Island	10,000.

See footnotes at end of table.

TABLE 2—Continued
 PHILIPPINES: STRUCTURE OF THE MINERAL INDUSTRY IN 2007

(Metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners		Location of main facilities	Annual capacity
Nickel—Continued	Hinatuan Mining Corp.		South Dinagat project located on Nonoc Island	4,000.
Do.	do.		Tagana-an nickel project located on Hinatuan Island	30,000.
Do.	Nickel Asia Corp., 65%, and Pacific Metals Co. Ltd. and Sojitz Philippines, 35%		Claver nickel project (Taganito) located in Surigao del Norte Province, Mindanao Island	12,000.
Do.	Nickel Asia Corp., 60%, and Pacific Metals Co. Ltd. and Sojitz Philippines, 40%		Rio Tuba nickel project, located in Barrio Rio Tuba, Municipality of Bataraza in Palawan Province.	5,000.
Do.	Toledo Mining Corporation Plc., 56.1%		Berong nickel project located on Palawan Island	10,000.
Do.	CRAU Mineral Resources Corp.		Sta. Cruz-Candelaria Nickel project located in Zambales Province	1,000.
Do.	CTP Construction & Mining Corp.		Adlay-Cagdiano-Tandawa (ACT) Nickel project, located in Barangay Adlay, Municipality of Carrascal, Province of Surigao del Sur	10,000.
Do.	SR Metals, Inc.		SR Nickel project, Tubay Mine, located in Tubay, Agusan del Norte Province	25,000.
Silver	kilograms	Lepanto Consolidated Mining Co.	Victoria and Teresa Mines located in Mankayan, Benguet Province	4,000.
Do.	do.	TVI Resources Development Philippine Inc., 100%	Canatuan project, located east of Siocon, Province of Zamboanga del Norte, Mindanao Island	17,000.
Do.	do.	Lafayette Mining Ltd., 75%, and LG International and Korean Resources Corp., 25%	Rapu-Rapu Mine under the Rapu-Rapu polymetallic project, located in Albay Province	18,000.
Do.	do.	Philex Mining Corp. (through its subsidiary Philex Gold Inc.), 81%	Padcal Mine (Sto. Tomas II deposit) located in Tuba, Benguet Province, Island of Luzon	5,000.
Zinc		Lafayette Mining Ltd., 75%, and LG International and Korean Resources Corp., 25%	Rapu-Rapu Mine under the Rapu-Rapu polymetallic project, located in Albay Province	8,000.

Do., do. Ditto.

¹Proposed increase to 20,000 metric tons by 2009.