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The Mineral Industries of Asia and the Pacific

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The Asia and the Pacific region, which includes 31 countries and territories, has a total area of about 29.9 million square kilometers, which accounts for about 20% of the world total. The total population was about 3.67 billion, which accounted for about 56% of the world total in 2007. China and India, which were the world's two most populous countries, accounted for about 67% of the region's total population and about 37% of the world's total population. The economies of Afghanistan, Bhutan, Cambodia, China, East Timor, India, Mongolia, and Solomon Islands were the fastest growing in the region in 2007 (tables 1, 2).

Australia and China were among the world's leading mineral producers. Australia has large resources of bauxite, coal, cobalt, copper, diamond, gold, iron ore, lead, lithium, manganese, mineral sands, tantalum, and uranium. China has large resources of antimony, arsenic, barite, coal, fluorite, gold, graphite, iron ore, magnesium, rare earths, strontium, tin, tungsten, and zinc. India also was one of the world's significant mineral producers and has large resources of barite, bauxite, chromium, iron ore, manganese, rare earths, and salt. Other significant mineral producers in the region were Indonesia, which has large resources of coal, copper, gold, nickel, and tin; Mongolia, which has large resources of copper, fluorspar, and molybdenum; Papua New Guinea, which has large resources of copper and gold; the Philippines, which has large resources of copper, gold, and nickel; and Thailand, which has large resources of feldspar, gypsum, and potash.

Despite the large amount and wide variety of resources of nonfuel minerals and coal in Australia, China, India, Indonesia, Mongolia, Papua New Guinea, the Philippines, and Thailand, the regional supplies of numerous nonfuel minerals [including aluminum, bauxite, copper, diamond, gold, iron ore, lead, platinum-group metals (PGM), phosphate rock, silver, and zinc] and such major mineral fuels as coal, natural gas, crude petroleum, and refined petroleum products, were insufficient to satisfy the demand in the region. The situation was caused largely by a substantial increase in the consumption of nonfuel minerals and mineral fuels by China and India; by continued high levels of consumption by such resource-poor industrialized countries as Japan, the Republic of Korea, Singapore, and Taiwan; and by the growing consumption by economies of such middle-income developing countries as Indonesia, Malaysia, and Thailand. The region of Africa and the Middle East supplied a large percentage of the Asia and the Pacific region's requirements for natural gas, crude petroleum, and refined petroleum products. Africa, North America, and South America supplied a substantial percentage of the region's raw material requirements for ferrous and nonferrous metals.

China and Japan were the two major regional markets for crude and processed minerals. Japan was the region's leading consumer of imported ferrous and nonferrous metals because of its large manufacturing sector and poor indigenous resources. China, however, remained the region's leader in terms of growth in consumption, especially for such mineral commodities as aluminum, cement, coal, copper, iron and steel, lead, natural gas, crude petroleum, phosphate rock, rare earths, tin, and zinc. India, Indonesia, Malaysia, the Republic of Korea, Singapore, Taiwan, Thailand, and Vietnam also were important consumers of such mineral commodities as aluminum, cement, copper, gold, iron ore, lead, phosphate rock, silver, steel, and zinc.

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- Mongolia—Mineral Resources and Petroleum Authority;
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General Economic Conditions

Economic developments in the Asia and the Pacific region have been significant. In 2007, increased domestic consumption led to strong growth in such countries as Cambodia, China, India, and Mongolia. Exports remained an important driving force of activity in such countries as Australia, China, Japan, the Republic of Korea, Singapore, and Taiwan. The financial turmoil in Europe, the United States, and developing countries caused credit to become much tighter, and capital flows to developing countries declined rapidly during the last quarter of 2007 and in 2008. Most Asia financial institutions were invested in more traditional financial instruments than were those in the developed countries, and their exposure to the problems associated with subprime mortgages in the United States was limited. The financial sectors of Asia's developing economies appeared to be weathering the global financial crisis quite well; however, the effects of the crisis were nonetheless being felt in the region and the economic growth was expected to be slower in the next 2 years compared with that of 2005-07. This slowdown could affect economic growth in such exporting countries as Japan, the Republic of Korea, Singapore, and Taiwan. Domestic consumption in such countries as China, India, and Vietnam was expected to continue to sustain growth as the value of exports continued to decline. Economic growth in the Asia and the Pacific region overall was expected to remain strong because of the improved macroeconomic policies that were put in place during the past decade; this improvement was evidenced by declining debt burdens and increases in the current account balances, fiscal balances, and foreign reserves, which, in turn, are likely to provide Asia authorities with even greater policy flexibility to cope with the weakening external demand. The global downturn was having a pronounced effect on the region's exports, and recovery was not expected until 2010 when the world economy was expected to improve (World Bank, The, 2009, p. 141-146).

The reversal of the declining trend in demand for metals and fuels began in the 1990s and, in the past decade, the demand for metals and fuels increased significantly, especially in the Asia and the Pacific region. The increase in demand drove the prices of metals and fuels to record highs, mainly owing to the slow growth in the production capacity in the 1990s. China stands out as the country where demand for mineral commodities increased the most. China's accession to the World Trade Organization and the expansion of its manufacturing activities played an important role in increasing the world demand for metals. China's energy demand was associated with an acceleration in production capacity expansions in the metal and nonmetallic sectors. During the past decade, the Chinese Government substantially increased investment in infrastructure that led to a rapid increase in consumption of such commodities as cement, copper, and steel. As with earlier commodity booms of the 1970s and the 1990s, which were marked by a sharp decline in prices following the boom, prices in all commodity markets fell sharply after the first quarter of 2008, which reflected slow economic growth in most of the developed countries in the West. The demand for metals and minerals is closely related to manufacturing and investment activities. In general, the manufacturing capacity is being transferred slowly from the developed countries to the developing countries. The economic growth in China, India, and other Asia and the Pacific countries is expected to continue to outpace the growth in the rest of the world during the next decade; however, the rate of growth in the demand for metals and minerals is expected to be less than that of the past decade (Asian Development Bank, 2009, p. 5-20).

Legislation

In China, a unified enterprise income tax law was passed in 2007 and was to be enacted in 2008. The Ministry of Finance allowed foreign companies to have a 5-year transitional period to adopt the changes. The Government also planned to revise the individual income tax, the mineral resource tax, the property tax, and the value-added tax. The Ministry of Finance and the State Administration of Taxation increased the resource tax, which was introduced in 1993, on mine output (per metric ton) of copper, lead, tungsten, and zinc.

China's Ministry of Commerce and National Development and Reform Commission jointly issued the 2007 guidelines for foreign investment in China. The Government encouraged foreign investors to participate in exploration for and development of iron ore and manganese deposits. Development of bauxite, copper, lead, and zinc mines was no longer encouraged. Exploration for antimony, fluorspar, molybdenum, rare earths, tin, tungsten, and radioactive materials was forbidden. The Government discontinued the practice of giving preferential power rates to energy-intensive users, such as those that produce aluminum, ammonia, caustic soda, cement, copper, ferroalloys, yellow phosphorus, and zinc.

The Geological Survey of India and Mineral Exploration Corp. limited their exploration activities to bulk minerals, such as bauxite and iron ore. Foreign investment could affect the scope of exploration and the commodity types being sought. The Government of India approved the floating of a $500 million high-risk fund to support exploration in a 1.82-million-square-kilometer area in India.

In Indonesia, a new minerals and coal law was enacted at the end of March 2007. This law replaces law No. 11/1967 regarding the main provisions of general mining. The new law also affects relations between the Government and the regional governments with respect to law No. 22/1999 on regional autonomy, which specifies that all sectoral laws must be adapted to the law of regional autonomy. The new mining law requires the mining industry to process mined ore or concentrates into metal in Indonesia. More laws and regulations were being enacted to prevent mining companies from shipping raw materials to other countries and refining concentrates elsewhere.

In Mongolia, the Parliament planned to amend the mineral law again; the law was previously amended in 2006. The current mineral law provided for exploration and mining activity under a special permission issued by the Mineral Resources and Petroleum Authority. Some members of the Parliament took the position that the current mineral law did not protect the interests of the Mongolian people, especially with respect to strategic deposits. The Parliament delayed the approval of the draft agreement negotiated between Ivanhoe Mines Ltd. of Canada

and the Government working group until further discussion of the mineral law takes place.

In Vietnam, the Prime Minister approved a master plan for basic geologic investigation of mineral resources to the year 2015, with orientation to the year 2020. The Prime Minister also approved a zoning master plan for the exploration, mining, processing, and use of bauxite in the period 2007-15, with vision to 2025 taken into consideration.

Exploration

Exploration activity in much of the Asia and the Pacific region increased in 2007 from 2006 levels. Data derived from the Metals Economics Group (MEG) suggest that the 2007 proposed budget allocations for Australian exploration activity increased by 50% to $1.18 billion from $784 million in 2006. Similarly, the 2007 budget for the Pacific region (excluding Australia) increased by 51% to $431 million in 2007 from $285 million in 2006 (Metals Economic Group, 2007).

Australia's total mineral exploration spending, excluding petroleum, was $1,751.9 million (A$2,061.1 million) in 2007. Its total petroleum exploration (onshore and offshore) spending was $2,261.6 million (A$2,660.7 million). The percentage of spending on uranium exploration increased by 50% compared with that of the previous year. The total exploration spending for base metals, coal, iron ore, and mineral sands also increased; spending on exploration for diamond, however, decreased by 50%. The State of Western Australia remained the leading destination for exploration and accounted for about 60% of the total exploration expenditure. About 57% of the country's total exploration expenditure was spent on existing deposits, and the remaining 43% was spent on new exploration (Australian Bureau of Statistics, 2008, p. 7, 61).

In China, on January 1, 2006 (the latest year for which data were available), a total of 16,914 legal and active exploration permits (excluding oil and gas) were issued, of which nonferrous metals accounted for 29.2%; precious metals, 25.8%; ferrous metals, 22.5%; fuels, 10.5%; nonmetallic minerals, 10.3%; and other, 1.7%. In 2005, China's total exploration expenditure was $4.21 billion. The Central Government contributed $156 million; local governments, $183 million; domestic enterprises, $3.74 billion; and foreign investors, $126 million (Ministry of Land and Resources, 2007, p. 140, 644).

Mining activities in Mongolia were held back in part by uncertainty surrounding the terms of exploitation of some substantial mineral deposits. Foreign companies were awaiting Government decisions regarding state participation. The major issues centered on the size and terms of the Government stake in the deposit, the tax regime, and management authority. The uncertainty prompted some international companies to reconsider investments in Mongolia.

Commodity Overview

Estimates for production of major mineral commodities for 2009 and beyond have been based upon supply-side assumptions, such as announced plans for increased production/new capacity construction and bankable feasibility studies. The outlook tables in this summary chapter show historic and projected production trends; therefore, no indication is made about whether the data are estimated or reported, and revisions are not identified. Data on individual mineral commodities in tables in the individual country chapters are labeled to indicate estimates and revisions. The outlook segments of the mineral commodity tables are based on projected trends that could affect current (first quarter of 2009) producing facilities and on planned new facilities that operating companies, consortia, or Governments have projected to come online within indicated timeframes. Forward-looking information, which includes exploration and mine development, estimates of future production, cost of capital projects, and timing of the start of operations, are subject to a variety of risks and uncertainties that could cause actual events or results to differ significantly from expected outcomes. Projects listed in the following section are presented as an indication of industry plans and are not a USGS prediction of what will take place.

Metals

Aluminum and Bauxite and Alumina.—The region's production of bauxite accounted for about 56% of the world total in 2007. Australia, which was the world's leading producer of bauxite, accounted for about 31% of the world total; it was followed by China, 15%, and India, 9.5%. Production of aluminum accounted for about 44% of the world total in 2007. China, which was the world's leading producer of aluminum, accounted for about 33.3% of the world total; it was followed by Australia, 4.5%; India, 2.7%; and Japan 2.5% (table 4).

Regional production of bauxite and aluminum was expected to continue to grow at an average annual rate of about 4% each between 2007 and 2015 (tables 5, 6). This prediction was based on reported capacity expansions in Australia, China, India, and Vietnam.

Owing to increased demand for alumina in the world in recent years, Australian alumina producers planned to expand their refineries' output capacities. Alcan Inc. of Canada expanded the capacity of its Gove alumina refinery to 3.8 million metric tons per year (Mt/yr) from 2.0 Mt/yr, and the refinery was expected to be fully operational in 2008. Alcan also planned to build a 1.0- to 1.5-Mt/yr greenfield alumina refinery in the Manantenina District. The Western Australia government approved BHP Billiton Ltd.'s application to expand its Worsley alumina refinery to 4.4 Mt/yr from 3.7 Mt/yr. Rio Tinto Aluminium Ltd. of Australia planned to increase its Yarwun alumina refinery output capacity to 3.4 Mt/yr from 1.4 Mt/yr. These companies would source their bauxite from domestic mines. Aluminum Corporation of China Ltd. (Chalco) planned to develop the Aurukun bauxite deposit at Aurukun in the State of Queensland and to mine bauxite in 2011. In India, Dubai Aluminium Co. and Larsen and Toubro Ltd. of India planned to build a bauxite mine in Orissa. The initial design was to mine 10 Mt/yr of bauxite ore and to produce 6.5 Mt/yr of beneficiated ore. In Indonesia, P.T. Antam Tbk planned to increase bauxite production by 850,000 metric tons per year (t/yr) to feed the new alumina refinery at Tayan in 2010. In Vietnam, Vietnam Mineral Corp. (a joint venture between Vietnam National Coal-Mineral Industries Group and Chalco) planned to construct a $1.6 billion bauxite

mine and refinery in Central Highlands, Lam Dong Province, and was expected to receive approval from the Government in 2009.

During the past 2 years, China aluminum producers expanded their alumina and aluminum output capacities. As a result, the country became a net importer of bauxite (mainly from Indonesia) and alumina (from Australia). By yearend 2007, China's alumina output capacity could reach 26 Mt/yr. Alumina refineries in Shandong Province relied on imported bauxite to meet their demand. Companies with refineries under construction included Chalco's Nanchuan Aluminum Co., Chalco Zunyi Aluminum, Guixi Aluminum Co. Ltd., Henan Zongmei Aluminum Co. Ltd., Huiyuan Chemical Engineering Co. Ltd., Shanxi Wusheng Aluminum Co. Ltd., and Yunnan Aluminum Co. Ltd. By 2010, China's alumina output was expected to meet domestic demand; however, the country was expected to become the leading bauxite importer in the world.

The costs of producing aluminum increased significantly during the past 2 years as a result of higher global energy costs. Alumina and electricity are the two major operational costs in the production of aluminum, and many of China's aluminum producers teamed up with power producers to form joint ventures to gain preferential electricity prices. Higher operating costs were expected to constrain production from marginal smelters in the developed countries. The Chinese Government encouraged enterprises to develop recycling programs and restricted the construction of aluminum smelters with output capacities of less than 100,000 t/yr.

In 2007, aluminum consumption in the Asia and the Pacific region accounted for about 50% of the world total compared with 43.8% of the total in 2006. The increase in aluminum consumption in the region was mainly owing to increased consumption by China and India. In the future, strong growth in Chinese consumption is expected to be offset by falling consumption in Japan and newly industrialized Asian countries. In 2010, China will likely account for more than one-third of the world aluminum consumption, India will likely increase its level of consumption to about 12% of the world total (from about 7% in 2007), and Japan will likely continue to account for about 6%. China and India are projected to account for more than 60% of the growth in the region's aluminum consumption during the next 5 years. Vietnam's aluminum consumption could also increase significantly and might contribute solidly to the expansion of aluminum consumption in the Asia and the Pacific region.

Copper.—The region's production of mined copper accounted for about 20% of the world total in 2007. China was the leading regional producer followed by Australia and Indonesia. Production of primary refined copper accounted for about 39% of the world's total output in 2007. Among the region's refined copper producers, China was the world's second ranked producer of primary and secondary refined copper behind Chile, and Japan was ranked third. Australia, India, and the Republic of Korea were also important producers of refined copper in the region (table 4).

Between 2007 and 2015, regional production of mined copper and refined copper was expected to continue to increase at an average annual rate of about 5% and 2.1%, respectively. This prediction was based on reported capacity expansions of mined copper in Australia, China, India, Indonesia, Laos, Mongolia, and Thailand, and on reported capacity expansions of refined copper in Australia and China (tables 7, 8).

In Australia, BHP Billiton was considering an expansion of its Olympic Dam Mine to 500,000 t/yr, and Oxiana Ltd.'s Prominent Hill copper and gold project was under bankable feasibility study. Production of refined copper in Australia was expected to increase to 800,000 t/yr in 2011 owing to a 20,000-t/yr expansion project by the Townsville copper refinery and the 15,000-t/yr Lady Annie greenfield project. In Indonesia, gradual capacity expansions were to be undertaken by P.T. Freeport Indonesia Co. at Grasberg, Province of Papua, and by P.T. Newmont Nusa Tenggara at Batu Hijau on Sunbawa Island, Province of West Nusa Tenggara. In China, the Yulong copper mine in Xizang Autonomous Region was expected to be brought onstream in 2009. Continental Mineral Corp. of Canada applied for a mining license to develop the Xietongmen copper and gold deposit in Xizang Autonomous Region. The Pulang copper mine in Yunnan Province was under development. In Laos, Oxiana's Sepon Mine was expected to reach its full capacity in 2007, and the second-phase development of the Phu Kham copper-gold project was scheduled to be completed in 2007 and to be put into operation in 2008. The construction of the Oyu Tolgoi project was put on hold pending the Mongolian Parliament's approval of the joint-venture agreement between Ivanhoe and the Mongolian Government. Ivanhoe projected that mine construction would be completed within 18 months after the Mongolian Parliament approved the joint-venture agreement.

For refined copper, China's Jiangxi Copper Co. Ltd. planned to increase its refining capacity to 900,000 t/yr in 2009 from 700,000 t/yr in 2007 at Guixi, Province of Jiangxi, and to build a 200,000-t/yr secondary refined copper plant in Guangdong Province in 2008. Yunnan Copper Group Co. Ltd. planned to increase its refinery capacity to 600,000 t/yr in 2010 from 350,000 t/yr in 2005 at Kunming, Province of Yunnan. Tongling Nonferrous Metals Group Holding Co. Ltd. planned to expand its total refined copper output capacity to 800,000 t/yr in 2010. In India, Pebble Creek Resources Ltd. planned to build a 210,000-t/yr (ore) underground copper mine at Pithoragarh, State of Uttaranchal, which was expected to begin production in 2007.

In 2007, refined copper consumption in the Asia and the Pacific region accounted for about 49.1% of the world total compared with 45.5% of the total in 2006. The increase in copper consumption in the region was the result of increased copper consumption in China and India. In the future, the power sector, which accounted for about 50% of China's copper consumption in 2007, was expected to increase its consumption by 5% per year to reach a total of about 3 Mt in 2013. In 2010, the region could account for more than 50% of the world's total copper consumption. In 2010, China would likely account for about one-third of the world's copper consumption; Japan, about 7%; and India, about 5%. As consumer incomes increase, an increasing proportion of household expenditure is likely to shift toward the purchase of copper-intensive manufactured products. Except for Australia, Japan, the Republic of Korea, New Zealand, Singapore, and Taiwan, countries of the Asia and the Pacific region were well below the per capita copper consumption of developed countries. Copper consumption in the

Asia and the Pacific region, especially in China and India, was expected to increase significantly in the next decade.

Gold.—The region's production of mined gold accounted for about 34% of the world total in 2007 (table 4). China was the leading mined-gold-producing country in the region, followed by Australia and Indonesia (table 9). China was ranked second after South Africa in the world production of gold. Papua New Guinea also was a significant gold producer in the region.

Regional production of mined gold was expected to continue to increase at an average annual rate of 3.6% between 2007 and 2015. This prediction was based on gradual capacity expansions mainly at the major copper and gold mines in Australia, China, Indonesia, Mongolia, and Papua New Guinea (table 9).

Australian gold production was expected to increase only steadily in the next few years. The Bendigo Mine in the State of Victoria, the Fortnum Mine in the State of Western Australia, the Gully and the Union Reef Mines in Northern Territory, and the Warrior Mine in the State of Queensland were all expected to be brought onstream during the next 2 years. In China, the CSH Mine in the Nei Mongol Autonomous Region and the Lannigou Mine in Guizhou Province were expected to start production in 2007-08. The Jinshan Mines' Dadiangou Mine in Gansu Province was expected to be put into operation by 2010. Gold production in Indonesia increased because of access to exceptionally high-grade ore from Freeport Indonesia's Grasberg Mine, and output was expected to remain steady during the next several years. The increase of gold production in Mongolia depends upon when the Oyu Tolgoi copper-gold mine will be put into operation. Laos increased its mined gold production at the Sepon gold mine (operated by Oxiana) and at the Phu Bia heap-leach gold mine (operated by Pan Australian Resources).

During the past decade, foreign investors introduced modern technology to China that accelerated gold exploration and mine production, and the Chinese Government provided incentives for foreign companies to invest in China's western region. Gold production in China increased at both large and small mines throughout the country. Gold production in South Africa continued to decrease during the past 4 years, and China is expected to replace South Africa as the leading gold producing country in the world in the next 2 years.

The region was the world's major market for gold and accounted for about 46% of the world's total gold consumption in 2007. India was the world's leading consumer of gold, accounting for about 27% of the world total. Owing to continuing strong economic growth and rising urban incomes (which lead to higher demand for gold jewelry), China replaced the United States as the second ranked gold consumer in the world. Jewelry accounted for about 90% of the world's gold consumption. During the financial crisis in the 1990s, gold became an investment commodity, especially in such countries as China, India, and Vietnam. The Chinese Government indicated that the country had increased its gold holdings. Gold demand in other countries in the region was expected to remain steady.

Iron and Steel.—The region's production of iron ore was estimated to account for, in terms of gross weight, about 60% of the world total in 2007. China ranked second in the world in the production of iron ore (in terms of iron content) after Brazil; it was followed by Australia and India. The region's production of crude steel was estimated to account for about 57% of the world total. China, which was by far the world's leading producer of crude steel, accounted for about 36.3% of the world total, and Japan, India, and the Republic of Korea ranked second, fifth, and sixth, respectively. China's crude steel output was more than the combined total production of, in order of production, Japan, the United States, Russia, India, and the Republic of Korea (table 4).

East Asian countries, such as China, Japan, and the Republic of Korea, were the world's leading consumers and importers of iron ore. Australia was the region's and the world's leading supplier of iron ore. India's iron ore output increased sharply to meet domestic and regional demand. India, which was China's third ranked iron ore supplier after Australia and Brazil, was expected to remain in that position for the next several years. Brazil and South Africa would also continue to be major iron ore suppliers to the region. Imports of iron ore by East Asian countries were expected to continue to increase, especially imports by China to meet its steel industry's demand.

Regional production of iron ore was expected to increase at an average annual rate of about 4.5% between 2007 and 2015. This prediction was based on gradual capacity expansions in Australia, China, and India. In Australia, capacity expansion to 52 Mt/yr was planned at Rio Tinto plc's Yandicoogina Mine in 2008. Rio Tinto also planned to develop a 22-Mt/yr iron ore mine at Hope Downs in the State of Western Australia by 2008. The Board of Rio Tinto approved a company investment of $2.4 billion in two new iron ore mines—the Bobe Valley/Brockman 4 and the Mess/Warramboo—in Pilbara, Western Australia. The two mines were scheduled to begin operation in 2011 and 2012, respectively, with a total combined output capacity of 47 Mt/yr. BHP Billiton planned to expand capacity at its Newman Mine to 63 Mt/yr in 2010. Several smaller mines, such as the Jack Hill, the Koolan Island, and the Middleback Range Mines, came onstream in 2007. In China, several iron mines were under construction or were in the planning stage, including the Cangshaw Mine in Shandong Province, the Lilou and the Longtongyan Mines in Anhui Province, and the Takong Mine in Jilin Province. In North Korea, China Minmetal Corp. and Tonghua Iron and Steel Corp. planned to redevelop the Musum Mine to increase its iron ore production capacity to 10 Mt/yr (table 10).

Regional production of crude steel was expected to increase at an average annual rate of about 2.5% between 2007 and 2015. China was expected to lead in crude steel expansion in the region. Shoudu Iron and Steel Group Co. and Tangshan Iron and Steel Group planned to build a 10-Mt/yr greenfield steel plant in Hebei Province. Anben Iron and Steel Group planned to expand steel capacity in Liaoning Province to 30 Mt/yr by 2010. Tonghua Iron and Steel Group Co. Ltd. planned to expand capacity in Jilin Province to 10 Mt/yr during the next 3 to 10 years. The Chinese Government approved the applications of Baoshan Iron and Steel Group and Wuhan Iron and Steel Group to build two 10-Mt/yr greenfield plants in the Provinces of Guangdong and Guangxi, respectively. The Shandong Provincial Government decided to consolidate the iron and steel companies and expand the total output capacity in the Province to meet the projected consumption.

India also was expected to expand its crude steel capacity significantly. The expansion would include the construction of a 13-Mt/yr steel plant at Paradip, State of Orissa, as proposed by the government of Orissa and Pohang Iron and Steel Co. Ltd. of the Republic of Korea; the plant was expected to start producing steel in 2009. India's capacity expansion would also include two projects by JSW Steel Co. Ltd. at Vijayanagar, State of Karnataka, which were expected to increase the company's production capacity to 7 Mt/yr in 2008 and to 10 Mt/yr in 2011. JSW also planned to build a 10-Mt/yr steel plant at Saraikela Kharswan in 2012, and the startup of its 10-Mt/yr steel plant in West Bengal was scheduled for 2009. Tata Steel planned to expand its Jamshedpur steel plant's capacity to 36.5 Mt/yr. In Vietnam, Thai Nguyen Iron and Steel Co. planned to increase steel capacity to 1 Mt/yr by 2008 and to 1.3 Mt/yr by 2010 (table 11).

The volume of iron ore imports by China was expected to continue to increase. The country's iron ore imports could account for about 60% of its consumption by the end of this decade. Imports of iron ore by Japan, the Republic of Korea, and Taiwan were expected to increase slightly during the next several years. Australia will continue to be a leading iron ore supplying country in the region. Owing to increased domestic demand, iron ore exports from India were expected to remain at the current level for the near future.

China was the world's leading consumer of steel products. Japan was the world's leading exporter and the region's major supplier of steel products to China and to such major consumers in the region as the Republic of Korea, Singapore, Taiwan, and Thailand. Steel consumption in India was expected to increase more significantly than in other countries in Asia, besides China, because of strong growth in industrial production and increased investment in the country's infrastructure. Owing to the low steel consumption in the region, the Association of Southeast Asian Nations (ASEAN) countries continued to remain small steel producers.

Lead and Zinc.—The region's production of mined lead and zinc accounted for about 50% and 47%, respectively, of the world total in 2007 (table 4). China ranked as the world's leading producer of mined lead and zinc and accounted for about 32.7% and 28.2%, respectively, of the world total in 2007; it was followed by Australia, which accounted for about 15% and 14%, respectively. China was the world's leading producer of lead and zinc metal, and Australia, India, Japan, and the Republic of Korea were the region's other important producers (table 4).

Regional production of mined lead and zinc was expected to increase at an average annual rate of about 1.7% and 1.9%, respectively, between 2007 and 2015. This prediction was based on reported capacity expansions in Australia, China, and India (tables 12, 19). Regional production of refined lead and zinc metal was expected to increase at an average annual rate of about 2.9% and 2.3%, respectively, between 2007 and 2015. This prediction was based on gradual capacity expansions mainly in Australia and China. The region's production of refined lead was expected to increase in light of the Chinese Government's issuance of guidelines on how to increase recycling output capacity, to decrease energy consumption, and to protect the environment (tables 13, 20).

In Australia, gradual capacity expansions were expected to be carried out at the Cannington Mine in the State of Queensland by BHP Minerals Ltd. and at the George Fisher and the Hilton Mines in Queensland by MIM Holdings Ltd. Teck Cominco Corp. of Canada planned to reopen its Lennard Shelf Mine in 2007. Several smaller zinc mines were planned and could produce 1.9 Mt/yr of zinc concentrate by 2011. In China, reported capacity expansions were for the new Bairendaba Mine in the Nei Mongol Autonomous Region to be brought onstream and to produce 10,000 t/yr of lead in concentrate. Aerhada Mining Co. Ltd. and Bayannur Zijin Nonferrous Metal Co. Ltd. started construction of a 100,000-t/yr zinc smelter in Dong Ujinqin and Urad Houqi, respectively, in the Nei Mongol Autonomous Region. In Japan, Toyoha Mining Co. Ltd. closed its lead-zinc-silver mine in Hokkaido Prefecture in 2006 because of depletion of ores, but the closure would not affect the increasing regional production of mined zinc.

In China, Tongquan Chizhou Nonferrous Metals Co. planned to add 100,000 t/yr of output capacity at each of its lead and zinc metal operations in 2010. China's zinc metal output capacity was expected to increase by 300,000 t/yr in 2008 with expansions by such producers as Baiyin Nonferrous Metals Co. Ltd., Nandan Nanfang Co., Yuguang Gold-Lead Co. Ltd., and Zhuzhou Smelter. China did not produce sufficient lead and zinc concentrates to meet its projected smelter expansions and would continue to depend on imports to meet its domestic needs. Secondary lead output could account for 30% of China's total output capacity by 2010.

In 2007, refined lead consumption in the Asia and the Pacific region accounted for about 46.6% of the world total compared with 44.6% of the total in 2006. China was the world's leading consuming country and accounted for 30.7% of the world total. Refined zinc consumption in the region accounted for about 53.4% of the world total, which was a 0.6% increase from that of 2005. The region's increase in zinc consumption was attributable mainly to China, which accounted for 32.1% of the world total in 2007. The demand for zinc plate by the automobile and electronic sectors in China was expected to increase, and India's zinc consumption increased to 4.2% of the world total in 2007 from 3.7% in 2005. As a result, the region's zinc consumption was expected to increase at a moderate rate during the next several years.

Nickel.—The region's production of mined nickel, in terms of metal content, accounted for about 31% of the world total in 2007. Indonesia was the world's third ranked producer of mined nickel after Russia and Canada in 2007. Australia and New Caledonia, which were the region's other major producers of mined nickel, accounted for 8.1% and 5.5% of the world total, respectively (table 4).

Regional production of mined nickel was expected to continue to increase at an average annual rate of more than 4.3% between 2007 and 2015. This prediction was based on reported gradual expansions of capacity and increases in productivity (table 14). In Australia, Allegiance Mining NL's Avebury Mine was scheduled to be put into operation in 2008, and it would have an output capacity of 8,500 t/yr for 10 years. BHP Billiton's Ravensthorpe Mine was scheduled to begin operation in 2009 and to produce up to 59,000 t/yr of nickel. Owing to

global economic conditions, the development of these mines could be delayed. Refinery expansion at the Yabulu refinery in Townsville was expected to be completed in 2007; an additional capacity expansion to 180,000 t/yr was scheduled to be completed in 2010. In China, gradual capacity expansions were to be undertaken at mines in the Xinjiang Autonomous Region during the period 2006-13. A nickel mine in Yuanjiang County, Province of Yunnan, was to be developed, and a 10,000-t/yr nickel refinery was to be built near the mine site by 2008. Jilin Jien Nickel Co. planned to expand its mine output capacity to 600 metric tons per day (t/d) from 300 t/d.

In New Caledonia, Société Minière du Sud Pacifique (SMSP) reported that a new nickel mine would be developed to supply nickel concentrates to the new joint-venture nickel metal project between SMSP and Pohang Iron and Steel Co. Ltd. in 2008. Companhia Vale do Rio Doce-Inco Ltd. restarted the construction of its Goro nickel mine, which was scheduled to be completed in 2009. The Goro mine would produce about 60,000 t/yr of nickel and 5,000 t/yr of cobalt.

Stainless steel production accounted for about 65% of total world nickel consumption, and the demand for nickel was linked to the consumption of stainless steel. In the past several years, the demand for stainless steel in the region increased significantly, especially in China. China was the leading stainless steel producing and importing country, and Japan, the Republic of Korea, and Taiwan supplied about 90% of China's total imports. China's stainless steel output from Baogang and Taiyuan Iron and Steel Co. increased gradually; this increase was expected to accelerate as several new mills begin operation. Nickel consumption in China was expected to increase substantially in the next several years, and nickel consumption in such other countries as Japan, the Republic of Korea, and Taiwan was expected to decline in the future and would likely offset the increasing demand in China.

Platinum-Group Metals.—The region's production of mined platinum and palladium was insignificant and accounted for only 0.4% and 0.6%, respectively, of the world total in 2007. Jinchuan Nonferrous Metals of China produced platinum and palladium as byproducts of mined nickel from its nickel mining and refining operations at Jinchuan, Province of Gansu. Australia was not a primary producer of platinum-group metals (PGM), although small amounts of palladium were produced as a byproduct of nickel operations at Kalgoorlie-Boulder and Kambalda in the State of Western Australia. Regional PGM consumption was expected to increase in the autocatalysts and electronics sectors. The rapid growth in the manufacture of automobiles, light vehicles, computers, and electronic goods in China and India raised the demand for PGM in the region (tables 4, 15, 16).

Tin.—The Asia and the Pacific region was the dominant producer of mined tin and tin metal in the world. Production of mined tin and refined tin accounted for 73% and 79%, respectively, of the world total in 2007. China ranked first in the world in the production of mined tin and refined tin and Indonesia ranked second. The combined output of China and Indonesia accounted for more than two-thirds of the world mined tin output. Other important refined tin producers in the region were Malaysia and Thailand.

Regional production of mined tin and refined tin was expected to continue to increase at an average annual rate of 1.8% and 1.7%, respectively, between 2007 and 2015. This prediction was based on reported gradual expansions of capacity and increases in productivity (tables 17, 18). In Australia, Metal X Ltd. planned to reopen its Mt. Bischoff and Renison Mines in the State of Tasmania, and North Queensland Metals Ltd. planned to develop its Baal Gammon polymetallic mine in the State of Queensland. China's Yunnan Tin Ltd. planned to develop a tin mine and construct a tin smelter on Bangka Island, Indonesia. Because the Thai Government agreed to lower the tin royalty rate to 6%, Sea Minerals Ltd. of Thailand planned to increase its mined tin output during the next several years.

China, which was the world's leading consumer of tin metal, accounted for about 37% of the world total. Japan followed with 9.6%. The region consumed about 64% of the world's total output of tin metal. Indonesia replaced China as the leading tin exporting country in the region. China's tin smelting capacity exceeded its mine output capacity; therefore, the country was required to import tin concentrates from such countries as, in order of volume (tonnage) of imports, Burma, Bolivia, Vietnam, and Laos in 2007. China appeared to become a net tin importing country in 2007. Tin was one of the Chinese Government's protected commodities. The Government cancelled the value-added-tax rebate and levied a 10% export duty on refined tin. The export volume of tin from China was expected to decrease in the future, and the Indonesian Government also restricted mined tin output and controlled refined tin output. As a result, the volume of tin supply on the world market also decreased. The principal tin consumption sectors were electronics, glass, iron and steel, and packaging.

Industrial Minerals

Diamond.—The Asia and the Pacific region's production of diamond accounted for less than one-fifth of the world total in 2007. Australia was the leading diamond producing country in the region (table 21). The Argyle Mine, which is located in the Ellendale diamond province in the State of Western Australia, was the world's leading producing diamond mine. Diamond produced from Australia accounted for about 11% of the world total in 2007. Rio Tinto Ltd. invested $760 million to develop the underground operation in the Argyle Mine, and the open pit operation was scheduled to be shut down in 2008. Australia exported most of its diamond output. The quality of diamond from Australia was considered low grade compared with that from Angola, Central African Republic, Guyana, India, Indonesia, and Sierra Leone. In 2007, the region imported about 43% of the world total imported volume (in terms of carats) and exported about 15% of the world total exported volume. India was the leading diamond importing country in the region and ranked second in the world behind the European Union (Kimberley Process Rough Diamond Statistics, 2008).

Phosphate Rock.—The region's production of phosphate rock, in terms of phosphorus pentoxide (P_2O_5) content, accounted for about 34% of the world total in 2007. China was the world's leading producer of phosphate rock and was followed by the United States, Morocco, and Russia. Other

important producers in the region were Australia, India, and Vietnam. Most of the region's production of phosphate rock was consumed within the region. China was the world's leading consumer of phosphate rock, and its demand for phosphate rock was expected to increase substantially in the next 5 years.

Regional phosphate rock production was expected to increase at an average annual rate of about 2.4% (table 22), which would lead to a shortage in the regional supply because the regional demand for phosphate rock was expected to increase at a rate of about 2.5% per year during the next 5 to 6 years. By 2010, China's domestic supply of phosphate rock was expected to be insufficient to meet its demand. Several mine expansion projects were underway in the Provinces of Guizhou, Hubei, and Yunnan. The country was projected to produce 13 Mt (in P_2O_5 content) of phosphate fertilizer and to consume 46.5 Mt of phosphate rock in 2010, and would be required to import an additional 8 Mt of phosphate rock to meet its needs.

Potash.—The principal use of potash is as an agricultural fertilizer. China was the major producer in the region, and its output accounted for about 6% of the world total. Potash had been in great demand, particularly in China, India, and the ASEAN countries. Annual demand for potash in Asia was estimated to reach 18 Mt. Owing to limited potash output, the region was a net importer, mainly from such countries as Canada, Israel, Jordan, and Russia.

Regional potash production was expected to increase at an average annual rate of about 10% between 2007 and 2015. In China, Xinjiang Lop Nur Potassic Salt Science and Technology Development Co.'s 1.2-Mt/yr potassium sulfate plant in Xinjiang Uygur Autonomous Region was scheduled to be completed in 2008, and Qinghai Potash Co.'s 200,000-t/yr potassium sulfate plant in Qinghai Province was expected to be completed in 2009. Potassium raw material was sourced from salt lakes in Qinghai Province and Xinjiang Uygur Autonomous Region. In Laos, Vietnam National Chemical Corp.'s 500,000-t/yr potassium chloride plant in Khammouan Province and Yunnan Zhongliao Mining Development and Investment Co.'s 50,000-t/yr potassium chloride pilot plant were scheduled to be completed in 2009. Several Chinese investors were exploring potassium resources at the surrounding areas of Vientiane in Laos. Development of the Udon potash project, which was located north of Somboon, Thailand, had been under study for more than 10 years. More than 1 billion metric tons of sylvinite ore was discovered in the Somboon area. The Asia Pacific Potash Corp. Co. (APPC), which was a wholly owned subsidiary of Italian-Thai Development Plc, was expected to start mining operations in 2009. APPC planned to produce 1 Mt/yr of potash in the first 5 years and to increase production to 2 Mt/yr thereafter.

Mineral Fuels and Related Materials

Coal.—The region's overall production of coal, which included anthracite, bituminous, and lignite, accounted for more than 50% of the world total in 2007. Production of anthracite coal, however, accounted for about 93% of the world total, and production of bituminous coal accounted for about 60%. China, which was by far the world's leading producer of anthracite and bituminous coals, accounted for about 82.8% and 40.6%, respectively, of the world total. In the Asia and the Pacific region, North Korea and Vietnam were the other significant producers of anthracite coal; Australia, India, and Indonesia were the other important producers of bituminous coal and lignite (table 4). Japan was one of the world's leading importers and consumers of coal; virtually all the coal required by its iron and steel and utility industries was imported. Australia ranked as the world's leading coal exporter. The major regional coal exporters (suppliers) were Australia, China, and Indonesia.

Overall regional coal production was expected to increase at an average annual rate of about 3.1% between 2007 and 2015 (table 24). This prediction takes into account planned capacity expansions and newly developed mines. In Australia, capacity expansion at the Rollestone coal mine in the State of Queensland was completed in 2005; the mine was expected to produce 12 Mt/yr in later years following completion of the second phase of development. The Wilpinjong Coal Mine was scheduled to be completed in 2007 and was designed to produce 13 Mt/yr. Capacity expansions of the Dawson, the Ensham, the Grasstree, and the Hail Creek Mines in Queensland were expected to be completed in 2007. In China, the Government approved Shenhua Coal Group's application to develop the Buertai Coal Mine in Nei Mongol Autonomous Region, which would have a design capacity of 20 Mt/yr of coal. The Shanxi Provincial government projected that 70 Mt/yr of coal output capacity would be added in Shanxi Province; the Province was expected to produce 680 Mt of coal in 2008. In India, Coal India Ltd. expanded its output capacity to 364 Mt/yr in 2006 and planned to increase it to 504 Mt/yr in 2011. In Mongolia, companies that held exploitation licenses on such coal mines as Baruun Naran, Ovoot Tolgoi, and Tavan Tolgoi were waiting for the Mongolian Government to finalize the investment agreements before proceeding with the construction of the mines.

In the region, Japan, the Republic of Korea, and Taiwan depended almost entirely on imported coal for their iron and steel and utility industries. China was the leading coal consuming country in the world. Owing to strong electricity demand, production constraints, and mine safety issues at domestic mines, the volume of coal exports decreased and coal imports increased sharply during the past 2 years. China's coal-production bases are located in the northern region and the coal-consuming regions are located along the coastal areas. As a result of rail and port bottlenecks and increased domestic transportation costs, imported coal was more competitive in recent years. The Indian Government aimed to provide electricity to all citizens. To achieve this target, the construction of a number of large coal-fired powerplants was planned. Several of those coal-fired plants would be located at the coastal areas and would rely on imported coal. India was expected to increase coal imports from about 29 Mt in 2007 to 70 Mt in 2013 if all the planned coal-fired plants commence operations. Because of low production costs and the ability to increase exports rapidly, coal exports from Indonesia were expected to increase. A large share of Indonesia's export growth was expected to be destined for China and India.

Uranium.—The region's uranium resources are located mainly in Australia, which was ranked first in identified

recoverable resources of uranium in the world and accounted for 24% of the world total. The country ranked second after Canada in the production of mined uranium in terms of uranium oxide (U_3O_8) content. In Australia, three active mines were in operation, namely, the Beverly, the Olympic Dam, and the Ranger Mines, and two more were under development. A number of undeveloped deposits are located in Northern Territory and in the States of Queensland, South Australia, and Western Australia. BHP Billiton planned to expand Olympic Dam's uranium output to 15,000 t/yr from 4,400 t/yr. In China, most mined uranium was enriched and consumed domestically. China planned to add 10 more nuclear powerplants in the coastal areas during the next 10 years to relieve the electricity shortage in the region. China's uranium consumption was expected to increase, and the country was interested in investing in uranium mines in Australia. Australia exported nearly all its mined uranium in concentrate of U_3O_8 to China, Japan, and the Republic of Korea within the region and elsewhere to France, Spain, Sweden, the United Kingdom, and the United States.

Regional production of mined uranium was expected to increase at an average annual rate of about 2.5% between 2007 and 2015 (table 25). This prediction was based mainly on capacity expansions in Australia at the Olympic Dam Mine by BHP Billiton and two U_3O_8 in situ leach operations at the Beverly Mine by Heathgate Resources Pty. Ltd. and at the Honeymoon Mine by Southern Cross Resources Inc. in the State of South Australia. The Honeymoon project was approved in 2001 and could proceed before South Australia's "No New Mine" policy goes into effect. According to the Chinese Government's energy development plan, China's nuclear power generation capacity would increase to between 40,000 and 60,000 megawatts (MW) in 2020 from 8,600 MW in 2007. With an installed nuclear power capacity of 40,000 MW, China would need about 7,000 t of uranium. The Chinese Government encouraged companies to explore for uranium at home and overseas. China National Nuclear Corp. was the only company allowed to mine uranium in the country. India, Japan, the Republic of Korea, and Taiwan were expected to expand their nuclear power capacities during the period 2008-13. Regional consumption of uranium was expected to increase and would require imports of uranium from African countries, Canada, and Kazakhstan.

Trade Review

During the past 3 decades, the main source of economic growth in the Asia and the Pacific region has shifted from the export of manufactured goods toward the export of machinery. This shift was initially led by Japan, followed by the newly industrialized economies of Hong Kong, the Republic of Korea, Singapore, and Taiwan, and more recently by Indonesia, Malaysia, the Philippines, and Thailand. Trade liberalization and investment policy reforms in developing countries have reduced barriers to trade and investment. The cross-border transshipment of production components and assembly within its vertically integrated production processes increased during the past several years and the composition of exports was shifted toward intermediate goods. The share of parts and components in manufacturing imports also was trending upward in the region. By 2007, the volume of imports of parts and components had more than doubled in China, the Philippines, Thailand, and Vietnam. China had become one of the major export destinations for all economies in the region. The export value to China from such countries as Malaysia, the Philippines, the Republic of Korea, Singapore, and Thailand increased by almost five times during this period, at the expense of the United States and the European Union.

During the past several years, nonoil commodity prices continued to increase; the prices were supported by strong investment and demand in the region. Metal prices rose by more than 10%, led by aluminum, copper, iron ore, lead, nickel, and precious metals. China's consumption of these metals had grown by more than 100% during the past several years. Growth in Chinese metal demand alone more than offset lower consumption in the European countries. Regional economic integration has facilitated rationalization of industry across the region. The ASEAN has facilitated regional economic integration by inviting all major Asian countries, including Australia, China, Japan, New Zealand, and the Republic of Korea, to discuss investment and trade liberalization in the region.

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TABLE 1
ASIA AND THE PACIFIC: AREA AND POPULATION IN 2007

Country	Area[1] total (square kilometers)	Population[2] total (thousands)
Afghanistan	647,500	33,610 [1]
Australia	7,687,850	21,017
Bangladesh	144,000	158,572
Bhutan	47,000	657
Brunei	5,770	389
Burma	678,500	48,783
Cambodia	181,040	14,446
China	9,596,960	1,319,983
Fiji	18,270	838
Hong Kong	1,092	6,926
India	3,287,590	1,123,319
Indonesia	1,919,440	225,630
Japan	377,835	127,771
Korea, North	120,540	23,783
Korea, Republic of	98,480	48,530
Laos	236,800	5,860
Malaysia	329,750	26,550
Mongolia	1,564,116	2,612
Nepal	147,181	28,108
New Caledonia	19,060	242
New Zealand	268,680	4,228
Pakistan	803,940	158,572
Papua New Guinea	462,840	6,324
Philippines	300,000	87,892
Singapore	693	4,589
Solomon Islands	28,450	495
Sri Lanka	65,610	19,945
Taiwan	36,190	22,958 [3]
Thailand	514,000	63,832
Timor, East	15,007	1,066
Vietnam	329,560	82,268
Total	29,933,744	3,669,795
World Total	148,940,000	6,612,040

[1]Source: U.S. Central Intelligence Agency World Factbook 2008.
[2]Source: The World Bank 2007, World Development Indicators Database.
[3]Source: Statistics Monthly, Accounting and Statistics, Executive Yuan, Taiwan, February 2008.

TABLE 2

ASIA AND THE PACIFIC: ECONOMY IN 2007[1, 2]

Country	Gross domestic product based on purchasing power parity		Real gross domestic product growth rate (percentage)		
	Total (million dollars)	Per capita (dollars)	2006	2007	2009
Afghanistan	20,100	733	8.2	11.5	8.3
Australia	762,887	36,226	2.7	4.2	2.2
Bangladesh	208,456	1,311	6.5	6.3	5.6
Bhutan	3,161	4,862	8.8	17.9	5.7
Brunei	19,557	50,790	4.4	0.6	2.8
Burma	59,962	1,040	12.7	5.5	6.0
Cambodia	26,064	1,818	10.8	10.2	6.0
China	7,034,840	5,325	11.6	11.9	9.3
Fiji	3,718	4,276	3.3	-3.1	2.0
Hong Kong	293,311	42,124	7.0	6.4	3.5
India	2,996,590	2,563	9.8	9.3	6.9
Indonesia	838,479	3,728	5.5	6.3	5.5
Japan	4,292,198	33,596	2.4	2.1	0.5
Korea, North[3]	40,000	1,700	NA	NA	NA
Korea, Republic of	1,201,866	24,803	5.1	5.0	3.5
Laos	12,614	2,054	8.1	7.9	6.8
Malaysia	359,271	13,385	5.8	6.3	4.8
Mongolia	8,426	3,222	8.6	9.9	8.1
Nepal	29,522	1,078	3.7	3.2	5.5
New Caledonia[4]	3,158	15,000	NA	NA	NA
New Zealand	112,703	26,611	1.9	3.2	1.5
Pakistan	410,295	2,594	6.9	6.4	3.5
Papua New Guinea	11,953	1,974	2.6	6.2	4.7
Philippines	299,673	3,383	5.4	7.2	3.8
Singapore	228,303	49,754	8.2	7.7	3.5
Solomon Islands	976	1,920	6.1	10.3	4.0
Sri Lanka	84,992	4,265	7.7	6.8	5.1
Taiwan	696,137	30,321	4.9	5.7	2.5
Thailand	519,786	7,907	5.1	4.8	4.5
Timor, East	2,608	2,506	-3.4	19.8	0.6
Vietnam	221,614	2,589	8.2	8.5	5.5
Total	20,803,220	XX	XX	XX	XX
World total	65,439,756	XX	XX	XX	XX

NA Not available. XX Not applicable.

[1]Includes data available as of May 2009. Gross domestic product listed may differ from that reported in individual country chapters owing to differences in source or date of reporting.

[2]Source: International Monetary Fund, World Economic Outlook Database, October 2008.

[3]Based on a 2008 estimate, U.S. Central Intelligence Agency World Factbook 2007.

[4]Based on 2003 estimate, U.S. Central Intelligence Agency World Factbook 2009.

TABLE 3

ASIA AND THE PACIFIC: SELECTED EXPLORATION SITES IN 2007[1]

Country	Type[2]	Site	Commodity	Company	Resources[3]	Exploration[4]
Australia	P	Agnew	Au	Goldfields Ltd.	2 Moz Au	Extensive work program.
Do.	E	Blue Spec Shear	Au, Sb	Northwest Resources Ltd.	200,000 oz Au, 4,900 t Sb	Extensive drilling.
Do.	E	Gidgee	Au	Gateway Mining NL	26,000 oz Au	Do.
Do.	E	Mertondale	Au	Navigator Resources Ltd.	152,000 oz Au	Do.
Do.	D	Snapper	Heavy minerals	Bemax Resources Ltd.	5.9 Mt heavy minerals	Do.
Do.	P	St. Ives	Au	Goldfields Ltd.	3.2 Moz Au	Extensive work program.
China	E	Dachang	Au	Inter-Citic Minerals Inc.	1.3 Moz Au	Extensive drilling.
Do.	E	Gold Mountain	Au	Tianshan Goldfields Ltd.	2.8 Moz Au	Do.
Do.	E	White Mountain	Au	Sino Gold Mining Ltd.	846,000 oz Au	Do.
Do.	E	Xietongmen	Cu, Au, Ag	Continental Minerals Corp.	945,000 t Cu, 4.3 Moz Au, 27 Moz Ag	Do.
Do.	D	Ying	Ag, Pb, Zn	Silvercorp Metals Inc.	40 Moz Ag, 215,000 t Pb, 70,000 t Zn	Extensive work program.
Do.	E	Zheng Guang	Au, Ag, Zn	Leyshon Resources Ltd.	933,000 oz Au, 2.6 Moz Ag, 64,000 t Zn	Extensive drilling.
India	E	Boula	PGE	Platinum Mining Corp. of India plc.	689,000 oz PGE	Do.
Indonesia	E	Yogyakarta/Pig Iron	Fe	Indo Mines Ltd.	35.7 Mt Fe	Do.
Malaysia	P	Penjom	Au	Avocet Mining plc.	484,000 oz Au	Do.
Do.	E	Raub	Au	Peninsular Gold Ltd.	52,000 oz Au	Do.
Philippines	D	Masara	Au	Crew Gold Corp.	263,000 oz Au	Do.

Do. Ditto.

[1]Abbreviations used for commodities in this table include the following: Ag--silver; Au--gold; Cu--copper; Fe--iron ore; Pb--lead; PGE--platinum-group elements; Sb--antimony; Zn--zinc. Abbreviations used for units of measure include the following: Moz--million troy ounces; Mt--million metric tons; oz--troy ounces; t--metric tons.

[2]D--Approved for development; E--Active exploration; P--Exploration at producing site.

[3]Resources reported where available based on 2006 data from various sources and reflect unverified public information reported by trade journals.

[4]Sites where extensive (greater than 10,000 meters) drilling or significant (more than $5 million) expenditures have been reported.

TABLE 4
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2007[1]

(Thousand metric tons unless otherwise specified)

	Metals										
				Copper		Gold, mine	Iron and steel			Lead	
							Iron				
	Aluminum			Mine output,	Refined,	output, Au content	Ore, gross			Mine output,	Refined,
Country	Alumina	Bauxite	Metal[2]	Cu content	primary	(kilograms)	weight	Pig	Steel, crude	Pb content	primary
Afghanistan	--	--	--	--	--	--	--	--	--	--	--
Australia	18,844	62,398	2,087	880	442	245,000	298,974	6,351	8,047	641	202
Bangladesh[e]	--	--	--	--	--	--	--	--	--	--	--
Bhutan[e]	--	--	--	--	--	--	5	--	--	--	--
Brunei[3]	--	--	--	--	--	--	--	--	--	--	--
Burma	--	--	--	15	15	100 [e]	--	2 [e]	25 [e]	2 [e]	(4)
Cambodia	--	--	--	--	--	--	--	--	--	--	--
China[e]	19,500	30,000	15,400	928	2,400	275,000	707,000	469,440 [5]	489,240 [5]	1,410	2,000
Christmas Island	--	--	--	--	--	--	--	--	--	--	--
Fiji	--	--	--	--	--	16 [e]	--	--	--	--	--
Hong Kong[3]	--	--	--	--	--	--	--	--	--	--	--
India[e]	2,900	19,221 [5]	1,223 [5]	35 [5]	734	--	202,000 [5]	28,800 [5]	53,100 [5]	78 [5]	89 [5]
Indonesia	--	1,251	242	797	221	117,851	--	--	3,900	--	--
Japan	300 [e]	--	1,157	--	1,370	8,869	--	86,771	120,203	--	105
Korea, North[e]	--	--	--	12	15	2,000	5,130	900	1,230	13	9
Korea, Republic of	--	--	--	(4)	581	162	291	29,437	51,517	(4)	195
Laos	--	--	--	99	63	4,161	--	--	--	--	--
Malaysia	--	157	--	--	--	2,913	802	--	6,895	--	--
Mongolia	--	--	--	130	3	17,473	265	--	80	--	--
Nauru	--	--	--	--	--	--	--	--	--	--	--
Nepal	--	--	--	--	--	--	--	--	--	--	--
New Caledonia	--	--	--	--	--	--	--	--	--	--	--
New Zealand	--	--	375	--	--	10,762	--	679 [e]	845 [e]	--	--
Pakistan[e]	--	8	--	19	--	--	207	106,000	900	--	--
Papua New Guinea	--	--	--	169	--	65,000	--	--	--	--	--
Philippines	--	--	--	23	160	38,792	--	--	718 [e]	--	--
Singapore	--	--	--	--	--	--	--	--	620 [e]	--	--
Solomon Islands	--	--	--	--	--	--	--	--	--	--	--
Sri Lanka[e]	--	--	--	--	--	--	--	--	--	--	--
Taiwan	--	--	--	--	--	--	--	10,550	20,883	--	--
Thailand	--	--	--	--	12 [e]	3,000	1,555	--	5,470 [e]	--	--
Vietnam[e]	--	30	--	11	11	3,000	1,060	790	2,000	4	--
Total	41,500	113,000	20,400	3,120	6,030	794,000	1,220,000	740,000	766,000	2,150	2,600
Share of world total	54%	56%	44%	20%	39%	34%	60%	71%	57%	57%	67%
United States	3,890	NA	2,550	1,170	1,270	238,000	52,500	36,300	98,100	434	123
World total	76,800	200,000	46,200	15,700	15,500	2,360,000	2,040,000	1,040,000	1,350,000	3,750	3,880

See footnotes at end of table.

TABLE 4—Continued
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2007[1]

(Thousand metric tons unless otherwise specified)

	Metals								
			Nickel, metal content		Tin, metric tons			Zinc, metric tons	
Country	Manganese ore, mine output, Mn content	Mercury, mine output, Hg content (metric tons)	Mine output	Refinery products	Mine output, Sn content	Metal, primary	Tungsten, mine output, W content (metric tons)	Mine output, Zn content	Metal[2]
Afghanistan	--	--	--	--	--	--	--	--	--
Australia	2,539	--	184	114	2,071	118	--	1,514,000	510,200
Bangladesh[e]	--	--	--	--	--	--	--	--	--
Bhutan[e]	--	--	--	--	--	--	--	--	--
Brunei[3]	--	--	--	--	--	--	--	--	--
Burma	(4)	--	(4)	--	1	30 [e]	183	10	--
Cambodia	--	--	--	--	--	--	--	--	--
China[e]	2,000	800	85	116	146,000	149,000	41,000	3,040,000	3,740,000
Christmas Island	--	--	--	--	--	--	--	--	--
Fiji	--	--	--	--	--	--	--	--	--
Hong Kong[3]	--	--	--	--	--	--	--	--	--
India[e]	900	--	--	--	--	--	--	314,000	440,000
Indonesia	--	--	229	9	66,137	64,127	--	--	--
Japan	--	--	--	153 [e]	--	879	--	--	638,695
Korea, North[e]	--	--	--	--	--	--	600	70,000	75,000
Korea, Republic of	--	--	--	26 [e]	--	--	--	2,034	674,400
Laos	--	--	--	--	450 [e]	--	--	1,100 [e]	--
Malaysia	--	--	--	--	2,263	25,263	--	--	--
Mongolia	--	--	--	--	--	--	125	77,350	--
Nauru	--	--	--	--	--	--	--	--	--
Nepal	--	--	--	--	--	--	--	--	--
New Caledonia	--	--	125 [p]	45 [p]	--	--	--	--	--
New Zealand	--	--	--	--	--	--	--	--	--
Pakistan[e]	--	--	--	--	--	--	--	--	--
Papua New Guinea	--	--	--	--	--	--	--	--	--
Philippines	--	--	85	--	--	--	--	7,364	--
Singapore	--	--	--	--	--	10 [e]	--	--	--
Solomon Islands	--	--	--	--	--	--	--	--	--
Sri Lanka[e]	--	--	--	--	--	--	--	--	--
Taiwan	--	--	--	11 [e]	--	--	--	--	--
Thailand	3 [e]	--	--	--	122	23,104	452 [e]	32,921	66,849
Vietnam[e]	4	--	--	--	3,500	2,000	--	46,000	--
Total	5,450	800	708	474	221,000	265,000	42,400	5,100,000	6,140,000
Share of world total	40%	62%	31%	34%	73%	81%	81%	47%	55%
United States	--	NA	--	--	--	--	--	803,000	278,000
World total	13,800	1,300	2,260	1,400	301,000	327,000	52,200	10,800,000	11,300,000

See footnotes at end of table.

TABLE 4—Continued

ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2007[1]

(Thousand metric tons unless otherwise specified)

	Industrial minerals						Mineral fuels			
							Coal			
Country	Cement, hydraulic	Fluorspar (metric tons)	Graphite (metric tons)	Magnesite	Mica (metric tons)	Salt	Anthracite	Bituminous	Natural gas, dry (million cubic meters)	Petroleum, crude (thousand 42-gallon barrels)
Afghanistan	50	--	--	--	--	--	--	140	50	20
Australia	9,500 e	--	--	447	--	10,855	--	320,000	39,960	168,080
Bangladesh[e]	5,100	--	--	--	--	360	--	--	16,000	2,100
Bhutan[e]	180	--	--	--	--	--	--	80	--	--
Brunei[3]	200 e	--	--	--	--	--	--	--	11,718	70,748
Burma	608	--	--	--	--	35 e	--	--	13,315	7,625
Cambodia	--	--	--	--	--	77 e	--	--	--	--
China[e]	1,354,120 [5]	3,200,000	800,000	8,000	--	59,760 [5]	530,000	1,900,000	52,000	1,650,000
Christmas Island	--	--	--	--	--	--	--	--	--	--
Fiji	145 e	--	--	--	--	--	--	--	--	--
Hong Kong[3]	--	--	--	--	--	--	--	--	--	--
India[e]	170,000	6,000	130,000	360	3,900	16,000	--	380,000	29,000	255,000
Indonesia	36,000	--	--	--	--	700 e	53 e	174,833	53,000 e	381,000
Japan	67,685	--	--	--	--	1,100 e	--	1,340 e	3,900 e	6,041
Korea, North[e]	6,130	12,500	30,000	1,000	--	500	17,100	--	--	--
Korea, Republic of	57,042	--	52	--	42,385	250	2,886	--	--	--
Laos	400 e	--	--	--	--	35 e	--	--	--	--
Malaysia	19,480	--	--	--	6,118	--	--	1,075	60,490	253,675
Mongolia	180	381,000	--	--	--	1	--	9,560	--	913
Nauru	--	--	--	--	--	--	--	--	--	--
Nepal	300 e	--	--	--	--	2 e	--	16	--	--
New Caledonia	134 e	--	--	--	--	--	--	--	--	--
New Zealand	1,200 e	--	--	--	--	100 e	--	4,835	4,310	14,873
Pakistan[e]	21,000	1,500	--	1	--	1,630	--	4,000	37,000	25,000
Papua New Guinea	--	--	--	--	--	--	--	--	136 e	16,900
Philippines	13,048	--	--	--	--	438	--	3,722	--	180 e
Singapore	--	--	--	--	--	--	--	--	--	--
Solomon Islands	--	--	--	--	--	--	--	--	--	--
Sri Lanka[e]	1,700	--	3,300	--	1,800	82	--	--	--	--
Taiwan	18,957	--	--	--	3,387	--	--	--	380 e	112
Thailand	35,668	1,820	--	--	--	1,235	--	--	25,400	49,078
Vietnam[e]	36,400	4,000	--	--	--	960	43,200	--	6,820	112,600 [5]
Total	1,860,000	3,610,000	963,000	9,810	57,600	94,100	593,000	2,800,000	353,000	3,010,000
Share of world total	67%	65%	89%	63%	18%	38%	93%	60%	13%	11%
United States	96,900	--	--	W	97,000	44,500	1,410	967,000	367,000	1,850,000
World total	2,790,000	5,580,000	1,080,000	15,700	322,000	251,000	640,000	4,690,000	2,760,000	27,300,000

See footnotes at end of table.

TABLE 4—Continued

ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2007[1]

[e]Estimated; estimated data, U.S. data, and world totals are rounded to no more than three significant digits. [p]Preliminary. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in world total. -- Zero or zero percent.

[1]Totals may not add due to independent rounding. Percentages are calculated on unrounded data. Table includes data available as of June 4, 2009.

[2]Primary and secondary production.

[3]Not in Minerals Yearbook, volume III.

[4]Less than 1/2 unit.

[5]Reported figure.

TABLE 5

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED BAUXITE MINE PRODUCTION, 1995-2015[1]

(Thousand metric tons, gross weight)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	42,700	53,800	59,960	62,398	67,000	73,000	80,000	85,000
China	5,000	9,000	22,000	30,000	40,000	43,000	45,000	46,000
India	5,240	7,560	12,385	19,221	20,000	21,000	22,000	23,000
Indonesia	899	1,150	1,442	1,251	1,800	2,100	2,200	2,300
Malaysia	184	123	5	157	150	150	150	150
Other	3	9	33	38	107	1,900	1,900	1,900
Total	54,000	71,600	95,800	113,000	129,000	141,000	151,000	158,000

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 6

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PRIMARY AND SECONDARY ALUMINUM METAL PRODUCTION, 1995-2015[1]

(Thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	1,300	1,770	2,030	1,957	2,000	2,000	2,100	2,100
China	1,750	2,800	9,740	15,400	16,500	18,000	19,000	20,000
India	537	644	942	1,223	1,300	1,800	1,900	2,100
Indonesia	220	160	252	242	250	260	260	270
Japan	1,280	1,217	1,039	1,100	1,000	1,000	1,000	1,000
New Zealand	273	328	373	375	370	380	380	380
Other	--	--	--	6	600	800	1,000	1,000
Total	5,360	6,920	14,400	20,300	22,000	24,200	26,000	27,000

[e]Estimated. -- Negligible or no production.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 7

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED COPPER MINE PRODUCTION, 1995-2015[1]

(Metal content in thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	398	829	930	880	1,000	1,300	1,400	1,450
China	445	593	762	928	1,000	1,050	1,100	1,200
India	47	32	27	35	26	26	25	42
Indonesia	444	1,010	1,064	797	1,100	1,300	1,500	1,200
Mongolia	122	125	127	130	130	250	300	350
Papua New Guinea	213	203	193	169	110	83	100	100
Philippines	108	130	16	23	20	18	18	18
Other	26	44	93	142	190	220	220	220
Total	1,800	2,970	3,210	3,100	3,600	4,240	4,660	4,580

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 8

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED REFINED COPPER METAL PRODUCTION, 1995-2015[1]

(Thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	248	488	461	442	550	800	800	800
China	1,080	1,370	2,600	3,600	4,000	4,200	4,400	4,600
India	40	243	517	734	670	680	690	770
Indonesia	--	158	263	221	240	280	320	280
Japan	1,190	1,440	1,395	1,577	1,350	1,300	1,300	1,300
Korea, Republic of	235	468	520	581	600	620	620	620
Other	187	195	269	270	440	460	470	470
Total	2,980	4,360	6,030	7,430	7,900	8,300	8,600	8,800

[e]Estimated. -- Negligible or no production.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 9

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED GOLD MINE PRODUCTION, 1995-2015[1]

(Metal content in kilograms)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	254,000	269,000	263,000	245,000	225,000	235,000	240,000	250,000
China	140,000	180,000	225,000	275,000	290,000	310,000	320,000	330,000
Indonesia	64,000	125,000	130,620	117,850	160,000	200,000	210,000	220,000
Japan	9,190	8,400	8,300	8,869	8,700	8,500	8,300	8,000
Laos	--	--	7,058	4,161	5,000	5,000	5,000	5,000
Mongolia	4,500	11,800	24,120	17,473	20,000	80,000	100,000	100,000
New Zealand	12,100	9,880	10,583	10,762	11,000	12,000	12,000	12,000
Papua New Guinea	51,700	74,500	68,483	65,000	74,000	80,000	80,000	80,000
Philippines	27,000	36,500	37,490	38,792	38,000	40,000	42,000	42,000
Other	14,400	24,000	19,000	16,000	18,000	17,000	17,000	16,000
Total	577,000	739,000	794,000	799,000	849,000	990,000	1,030,000	1,060,000

[e]Estimated. -- Negligible or no production.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 10

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED BENEFICIATED IRON ORE PRODUCTION, 1995-2015[1]

(Metal content in thousand metric tons)

Country	Average ore grade (% Fe)	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	62	88,700	107,000	162,500	185,363	210,000	220,000	230,000	250,000
China	64	82,300	73,600	134,000	233,000	290,000	310,000	320,000	330,000
India	64	41,700	48,600	97,500	129,000	130,000	132,000	134,000	136,000
Korea, North	55	2,000	1,100	1,400	1,400	1,500	5,000	5,000	5,000
Other		1,240	1,480	2,200	2,660	2,500	2,200	2,200	2,600
Total		216,000	232,000	398,000	551,000	634,000	670,000	690,000	720,000

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 11

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED CRUDE STEEL PRODUCTION, 1995-2015[1]

(Thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	8,450	7,300	7,790	8,047	8,500	8,600	8,700	8,700
China	95,400	129,000	353,240	489,240	540,000	580,000	600,000	620,000
India	22,800	26,900	45,800	53,100	60,000	70,000	90,000	92,000
Japan	102,000	106,400	112,470	120,000	80,000	80,000	90,000	100,000
Korea, Republic of	36,800	43,100	47,820	51,517	53,000	52,000	52,000	61,000
Malaysia	2,450	2,430	5,296	6,892	6,000	6,100	6,500	7,000
Taiwan	11,600	17,300	18,567	20,883	21,500	22,000	23,000	23,000
Thailand	2,134	2,100	5,160	5,470	5,500	6,000	6,500	6,500
Other	7,220	6,000	7,900	8,000	8,000	11,000	14,000	14,000
Total	289,000	341,000	604,000	763,000	782,000	840,000	890,000	930,000

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 12

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED LEAD MINE PRODUCTION, 1995-2015[1]

(Metal content in metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	455,000	739,000	767,000	641,000	680,000	720,000	750,000	760,000
China	520,000	660,000	1,140,000	1,410,000	1,450,000	1,500,000	1,550,000	1,600,000
India	34,000	28,900	60,400	77,600	78,000	80,000	80,000	80,000
Japan	9,660	8,840	3,437	--	--	--	--	--
Korea, North	75,000	9,000	13,000	13,000	13,000	13,000	15,000	15,000
Vietnam	1,000	1,200	3,300	3,500	4,000	4,000	4,000	4,000
Other	12,000	16,000	2,000	2,000	2,000	2,000	2,000	2,000
Total	1,110,000	1,460,000	1,990,000	2,150,000	2,230,000	2,300,000	2,400,000	2,450,000

[e]Estimated. -- Negligible or no production.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 13

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PRIMARY AND SECONDARY REFINED LEAD PRODUCTION, 1995-2015[1]

(Thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	241	251	263	229	250	250	250	250
China	608	1,000	2,390	2,800	3,100	3,300	3,500	3,700
India	90	78	91	124	125	130	140	190
Japan	288	312	275	276	280	280	285	285
Korea, Republic of	130	171	181	195	165	165	165	180
Other	150	88	140	140	140	140	140	140
Total	1,510	1,900	3,340	3,770	4,100	4,300	4,500	4,700

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 14

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED NICKEL MINE PRODUCTION, 1995-2015[1]

(Metal content in metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	103,000	167,000	189,000	184,000	220,000	240,000	250,000	270,000
Burma	13	10	10	10	10	22,000	22,000	22,000
China	41,800	50,300	72,700	85,000	90,000	92,000	94,000	94,000
Indonesia	88,200	98,200	135,000	229,200	230,000	240,000	250,000	300,000
New Caledonia	120,000	126,000	111,939	125,211	130,000	150,000	170,000	170,000
Papua New Guinea	--	--	--	--	--	30,000	32,000	35,000
Philippines	15,100	17,400	26,636	84,740	100,000	100,000	100,000	100,000
Total	368,000	459,000	535,000	708,000	770,000	870,000	920,000	990,000

[e]Estimated. -- Negligible or no production.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 15

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PLATINUM MINE PRODUCTION, 1995-2015[1]

(Metal content in kilograms)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	100	171	111	142	160	200	200	200
China	300	650	700	800	900	1,000	1,000	1,000
Total	400	821	811	942	1,060	1,200	1,200	1,200

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 16

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PALLADIUM MINE PRODUCTION, 1995-2015[1]

(Metal content in kilograms)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	400	812	550	600	650	650	650	700
China	170	350	450	500	550	650	650	700
Total	570	1,160	1,000	1,100	1,200	1,300	1,300	1,400

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 17

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED TIN MINE PRODUCTION, 1995-2015[1]

(Metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	8,656	9,146	2,819	2,071	4,000	4,000	4,000	4,000
China	61,900	99,400	126,000	146,000	150,000	150,000	150,000	150,000
Indonesia	46,058	55,624	78,404	66,137	80,000	83,000	86,000	90,000
Malaysia	6,402	6,307	2,857	2,263	2,300	2,000	2,000	2,000
Thailand	2,201	1,930	158	149	500	1,000	2,000	3,000
Vietnam	4,500	1,800	3,500	3,500	3,500	3,500	3,500	3,500
Other	980	1,150	1,160	1,300	1,500	1,500	1,500	1,500
Total	13,100	175,000	215,000	221,000	242,000	245,000	250,000	255,000

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 18

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED TIN METAL PRODUCTION, 1995-2015[1]

(Metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	870	1,033	994	518	500	500	500	500
China	67,700	112,000	122,000	149,000	150,000	160,000	165,000	170,000
Indonesia	38,628	47,129	65,300	64,127	75,000	78,000	81,000	85,000
Japan	630	593	754	879	880	880	900	900
Malaysia	39,433	26,228	36,924	25,263	26,000	27,000	30,000	30,000
Thailand	8,423	17,076	29,400	23,104	23,000	23,500	23,500	23,500
Other	2,700	1,800	1,800	12,000	4,000	4,000	4,000	4,000
Total	159,000	206,000	257,000	275,000	280,000	290,000	305,000	310,000

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 19

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED ZINC MINE PRODUCTION, 1995-2015[1]

(Metal content in thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	937	1,420	1,367	1,514	1,700	2,000	2,100	2,000
China	1,010	1,780	2,550	3,040	3,100	3,200	3,300	3,300
India	155	144	262	314	320	320	320	320
Korea, North	150	60	67	70	70	70	70	70
Thailand	23	27	43	30	33	35	35	33
Vietnam	14	13	48	46	50	50	50	50
Other	96	65	44	68	70	70	70	--
Total	2,390	3,510	4,380	5,070	5,340	5,700	5,900	5,800

[e]Estimated. -- Negligible or no production.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 20

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PRIMARY AND SECONDARY ZINC METAL PRODUCTION, 1995-2015[1]

(Thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	320	490	463	500	500	500	500	500
China	1,080	1,980	2,780	3,740	4,100	4,200	4,300	4,400
India	171	201	289	440	570	800	1,000	1,000
Japan	711	699	675	639	630	620	620	610
Korea, North	150	65	72	75	75	100	100	75
Korea, Republic of	279	474	645	674	680	700	700	700
Thailand	56	101	101	67	100	110	110	100
Total	2,770	4,010	5,030	6,140	6,660	7,000	7,300	7,400

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 21

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED DIAMOND PRODUCTION, 1995-2015[1]

(Thousand carats)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	40,700	26,600	34,307	19,191	21,000	23,000	23,000	23,000
China	1,130	1,150	100	100	100	100	100	100
India	21	16	16	15	15	14	14	13
Indonesia	22	23	30	30	30	30	30	30
Total	41,900	27,800	34,500	19,300	21,100	23,100	23,100	23,100

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 22

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED PHOSPHATE ROCK PRODUCTION, 1995-2015[1]

(P_2O_5 content in thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	146	452	628	650	700	700	700	700
China	7,960	5,820	9,130	15,100	16,000	17,000	18,000	18,500
India	360	336	355	360	370	380	390	400
Philippines	32	434	2	2	2	2	2	2
Vietnam	178	236	320	390	400	400	400	400
Other	360	310	210	110	93	93	93	93
Total	9,040	7,590	10,600	16,600	17,600	18,600	19,600	20,100

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 23

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED POTASH MINE PRODUCTION, 1995-2015[1]

(K_2O equivalent in thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
China	80	250	1,500	2,000	3,000	3,200	3,400	3,500
Laos	--	--	--	30	30	60	150	300
Thailand	--	--	--	--	--	600	600	900
Total	80	250	1,500	2,000	3,000	3,200	4,000	4,400

[e]Estimated. -- Negligible or no production.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 24

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED SALABLE COAL PRODUCTION, 1995-2015[1]

(Thousand metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	194,000	313,000	370,000	391,500	420,000	456,000	480,000	480,000
China	1,310,000	957,000	2,260,000	2,550,000	2,700,000	2,900,000	3,100,000	3,300,000
India	290,000	335,000	360,000	405,000	420,000	460,000	500,000	520,000
Indonesia	40,000	77,200	142,920	174,833	180,000	195,000	195,000	200,000
Japan	6,260	3,130	1,114	1,340	1,000	--	--	--
Korea, North	70,000	22,500	23,500	17,100	20,000	20,000	20,000	20,000
Korea, Republic of	5,720	4,170	2,832	2,886	2,800	2,700	2,600	2,700
Mongolia	5,019	5,185	8,256	9,560	11,000	12,000	15,000	17,000
New Zealand	3,445	3,586	5,267	4,835	5,900	5,900	6,000	6,000
Pakistan	2,997	3,116	3,367	4,000	4,000	4,200	4,200	4,500
Philippines	1,200	1,218	3,165	3,722	3,500	3,500	3,500	3,500
Thailand	18,400	17,786	23,689	18,239	20,000	20,000	20,000	20,000
Vietnam	8,350	11,609	34,093	43,200	50,000	60,000	70,000	70,000
Other	517	837	1,518	1,900	1,900	1,900	1,900	1,900
Total	1,960,000	1,760,000	3,240,000	3,630,000	3,800,000	4,100,000	4,400,000	4,600,000

[e]Estimated. -- Negligible or no production.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.

TABLE 25

ASIA AND THE PACIFIC: HISTORIC AND PROJECTED URANIUM MINE PRODUCTION, 1995-2015[1]

(U_3O_8 content in metric tons)

Country	1995	2000	2005	2007	2009[e]	2011[e]	2013[e]	2015[e]
Australia	3,700	7,580	11,218	10,145	12,000	12,000	12,000	12,000
China	500	1,000	1,200	1,300	1,500	1,500	2,000	2,000
Total	4,200	8,580	12,418	11,445	13,500	13,500	14,000	14,000

[e]Estimated.

[1]Estimated data and totals are rounded to no more than three significant digits; may not add to totals shown.