



2011 Minerals Yearbook

ASIA AND THE PACIFIC

THE MINERAL INDUSTRIES OF ASIA AND THE PACIFIC

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The 31 countries and territories of the Asia and the Pacific region reported on in the Minerals Yearbook have a total area of about 30 million square kilometers, which accounts for about 20.1% of the world total. Data and information for the majority of this report do not include Kiribati, Maldives, the Marshall Islands, the Federated States of Micronesia, Palau, Tonga, or Vanuatu. The total population was about 3.9 billion, which accounted for 55.6% of the world total in 2011. China and India, which were the world's two most populous countries, accounted for 66.7% of the region's total population. The real gross domestic product (GDP) growth rate of 30 of the region's countries increased in 2011 compared with that of 2010 whereas that of only one country, Japan, was reported to have decreased (by 0.8%). The GDP of 17 of the 31 countries and territories of the Asia and Pacific region increased by at least 5% in 2011, but for many countries the growth rate was lower than in 2010. The GDP of Mongolia, which was the country with the largest GDP growth in 2011, increased by 17.5% in 2011 compared with an increase of 6.4% in 2010 and a decrease of 1.3% in 2009 (tables 1, 2).

Australia and China were among the world's leading mineral producers in 2011. Australia has large resources of bauxite, coal, cobalt, copper, diamond, gold, iron ore, lead, lithium, manganese, mineral sands, nickel, tantalum, and uranium. China has large resources of antimony, arsenic, barite, coal, fluor spar, 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, fluor spar, and molybdenum; Papua New Guinea, which has large resources of copper, gold, and molybdenum; and the Philippines, which has large resources of copper, gold, and nickel.

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For mineral production statistics—

- Australia—Australian Bureau of Agricultural and Resource Economics and Sciences, and Western Australia Department of Minerals and Petroleum Resources;
- Bhutan—Ministry of Trade and Industry, Department of Geology and Mines;
- Brunei—Prime Minister's Department, Petroleum Unit;
- Cambodia—Ministry of Industry, Mines and Energy, Department of Mineral Resources Development;

- India—Indian Bureau of Mines;
- Indonesia—Central Bureau of Statistics;
- Japan—Ministry of Economy, Trade and Industry, Research and Statistics Department;
- Republic of Korea—Korea Institute of Geoscience and Mineral Resources;
- Laos—Ministry of Industry and Handicraft, Department of Geology and Mines;
- Malaysia—Ministry of Natural Resources and Environment, Minerals and Geoscience Department;
- Mongolia—Mineral Resources and Petroleum Authority;
- Nepal—Ministry of Industry, Commerce and Supplies, Department of Mines and Geology;
- Pakistan—Ministry of Petroleum and Natural Resources;
- Sri Lanka—Geological Survey and Mines Bureau;
- Thailand—Ministry of Industry, Department of Primary Industries and Mines; and
- Vietnam—Vietnam Institute of Geosciences and Mineral Resources.

For key economic data—

- Asian Development Bank in Manila, Philippines;
- International Monetary Fund in Washington, DC; and
- The World Bank in Washington, DC.

For exploration and other mineral-related information—

- Australian Bureau of Statistics in Canberra, Western Australia, Australia; and
- Metals Economics Group in Halifax, Nova Scotia, Canada.

General Economic Conditions

According to the World Bank, the East Asia and Pacific region (which includes Burma, Cambodia, China, East Timor, Indonesia, Japan, the Republic of Korea, Laos, Malaysia, Mongolia, the Pacific Islands, Papua New Guinea, the Philippines, Singapore, and Thailand) accounted for about 20% of total global economic growth in 2011. Economic growth varied greatly among countries, however, and regional growth decreased to 8.2% compared with 9.7% in 2010 (World Bank, The, 2012a, p. 1).

Slower economic growth in the East Asia and Pacific region was attributed, in part, to spillovers from the lingering financial crisis in the euro area, the adverse economic effects of natural disasters in Japan and Thailand, and a decrease in demand for Chinese products from China's largest export markets (World Bank, The, 2012a, p. 1–3). In 2011, the continuing economic crisis in the euro area centered around bailout packages for Greece and Portugal; the purchase of Italian and Spanish Government bonds by the European Central Bank; and economic growth in the euro area of just 0.2% in the second half of the year. The World Bank predicted that the financial crisis in the euro area would ease, but also that uncertainty regarding crude oil prices and relatively weak demand from high-income countries for imports from Asia, combined with

China's relatively decreased growth, were expected to diminish GDP growth in the East Asia and Pacific region to 7.6% in 2012 before increasing to 8.1% in 2013 followed by GDP growth of 7.9% in 2014 (World Bank, The, 2012a, p. 1–3; BBC News, 2013).

The GDP growth in East Asia and Pacific countries outside of China decreased to 4.5% in 2011 compared with 7% in 2010. The decrease was owing in part to the downturn in the trade of goods and, in some cases, the adverse terms of trade brought on by high oil prices, which increased by 32% in 2011 compared with the average level in 2010. Demand for exports from the East Asia and Pacific region (in terms of year-on-year growth rates) was expected to increase to 11.4% by 2014 compared with 9.9% in 2011 if exports from the region to the euro area were to stabilize and were to increase to other regions of the world. The reversal of some regional stimulus measures that were introduced in 2011, as in China, could result in decreased demand (World Bank, The, 2012a, p. 1–2, 7; 2012b, p. 50).

Mongolia's accelerated economic growth rate of 17.5% in 2011 was unprecedented for the country, and the unemployment rate decreased to 9% compared with 13% in 2010. Real wages for unskilled workers, however, had begun to decrease, and the inflation rate reached 11.1% by yearend. Mongolia's increasing inflation rate was mostly owing to mineral commodity revenue fueled by Government spending, which increased by 56% in 2011 compared with that of 2010 and which was expected to increase by an additional 32% in 2012. Government spending increases mainly reflected pre-election year pressures, and a large portion of the spending was directed towards cash handouts to citizens and increased capital expenditures. A continuation of the euro area debt crisis or other international economic disturbances that could affect the Asian economies could result in decreased prices for mineral commodities and a subsequent decrease in Government revenues in Mongolia. Such an effect would make the current levels of Government spending in Mongolia unsustainable and would put the country at risk of another boom-and-bust economic trend similar to that which the country experienced in the early- to mid-2000s when commodity prices were high (World Bank, The, 2012c).

In fact, high domestic inflation and declining commodity prices towards the end of the year resulted in the depreciation in the Mongolian currency by 11% during 2011, and the trade deficit reached a record \$1.7 billion by yearend as imports of mining-related equipment and fuel imports surged. Exports, however, increased to \$4.8 billion compared with \$2.9 billion in 2010, supported almost entirely by coal shipments to China. Mongolia's current account deficit increased to 35% of the GDP from 14% in 2010 but was fully funded by record foreign direct investment inflows of \$5.3 billion. The rate of growth of the mining and manufacturing sectors was 8.7% and 16%, respectively, during 2011 compared with that of 2010. The transportation and construction sectors grew by 1.6% and 0.2%, respectively, in 2011, but both sectors contracted significantly in the fourth quarter. The construction sector's rate of growth decreased sharply to -20.5% in the fourth quarter compared with the same period in 2010, following an increase of 66.9% in the third quarter of 2011. Those performance statistics led to concerns that a bubble could be forming in the construction

sector, especially because of the significant share of bank lending that it received (World Bank, The, 2012c, p. 5–7).

The development of Mongolia's construction sector was seen as vital to the country's economy. The transportation infrastructure required by the mining industry was expected to facilitate growth in other industries that are required to prevent declining performance among non-mineral industries. The Government, therefore, planned to launch an infrastructure development project to boost broad-based economic growth. If successfully implemented, 95% of the Mongolian road network would be paved by 2016.

In South Asia (a World Bank regional designation that includes the countries of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka), GDP growth decreased sharply in the second half of 2011, and the year ended with an estimated 7.1% growth compared with 8.6% rate of growth in 2010. Monetary policy reforms in India, energy and infrastructure constraints across the region, political and security uncertainties, and fiscal and inflation concerns resulted in decreased industrial activity and foreign investment in the region. In India, which was by far the region's largest economy, economic growth decreased by 3.2% compared with that of 2010. The trade balances and current accounts of South Asian countries were negatively affected by weaker demand for exports as a result of the euro area sovereign debt crisis and adverse terms of trade from elevated international crude oil prices. Inflationary pressures, despite a brief period of easing in India in early 2012, remained high in the region and resulted in depreciation of currencies (World Bank, The, 2012b, p. 49).

According to the World Bank, GDP growth in South Asia was expected to decrease to 6.4% in 2012 (partly because of carryover from significant decreases in the second half of 2011) and then increase to about 6.5% and 6.7% in 2013 and 2014, respectively. India was expected to have a slight increase in growth to nearly 7.0% in fiscal year 2013 (India's fiscal year is from April 1 to March 31), and 7.2% and 7.4% in fiscal years 2014 and 2015, respectively. In Pakistan, growth was expected to increase to 3.8% and 4.1% in fiscal years 2013 and 2014, respectively (Pakistan's fiscal year is from July 1 to June 30). In Bangladesh, GDP growth had seen a modest decline in 2011 to 3.0% from January through December but was expected to increase to 6.4% and 6.5% in fiscal years 2013 and 2014, respectively (Bangladesh's fiscal year is from July 1 to June 30). Trade and industrial production in South Asia began to recover in early 2012, but regional industrial production decreased to 10.3% in the second quarter of fiscal year 2012 from 18.8% in the first quarter. Regional export and import volumes increased by 22.6% and 40.3%, respectively, in the 3 months ending in February but decreased to 13.1% and 2.5%, respectively, by April (World Bank, The, 2012a, p. 49–50).

Electricity shortages and infrastructure constraints across much of the South Asia region affected the private sector and resulted in increased costs to businesses. A gap between installed electrical capacity and demand ranged from 10% in India to nearly 30% in Nepal. Electricity generation companies in Bangladesh, India, and Pakistan often lacked reliable access to inputs. In India, the dominance of state-owned enterprises in coal extraction and underinvestment in capacity expansion,

among other factors, kept production below demand. The cost of imported crude oil used for power generation in Bangladesh increased and the supply of natural gas in Pakistan remained sporadic. Limited supply forced both public and private power generation companies to ration output, which in turn cut into production levels and exports and could negatively affect long-term growth potential in the region (World Bank, The, 2012a, p. 54).

In March 2011 in Japan, the magnitude 9.0 Tohoku earthquake off the country's east coast triggered a 10-meter tsunami, which reached the Sendai region of the eastern coast of Japan within minutes. The combined natural disasters resulted in about 16,000 confirmed deaths and thousands of missing individuals; about 275,000 homes that were partially or totally destroyed; and a series of power failures, reactor meltdowns, and release of radioactive materials at the Fukushima Daiichi nuclear reactor. In addition, another 11 nuclear reactors were affected by the earthquake.

In the past 100 years, there had been nine earthquakes in Japan that killed more than 1,000 people. The magnitude 6.5 Hanshin earthquake in 1995, which devastated the city of Kobe, and the Tohoku event were among the top three events in terms of casualties. The Hanshin disaster resulted in 6,400 deaths and about 241,000 destroyed homes. Although the Tohoku earthquake was 178 times stronger than the Hanshin earthquake, which struck directly under a large urban area, damage to physical capital was similar for the two events. Damage to physical capital from the Hanshin earthquake accounted for about 0.8% of the total national physical capital stock at the time compared with 1% for the Tohoku earthquake (Drysedale, 2011; Schnell and Weinstein, 2012, p. 2–3).

In the quarter leading up to each of the Hanshin and the Tohoku earthquakes, quarterly GDP growth was similar; the contracted quarterly growth rates were -1.03% and -1.69% for the Hanshin and Tohoku events, respectively, but the recovery was faster after the 1995 disaster. GDP growth was about 1% higher in the quarter following the Hanshin earthquake than in the quarter following the Tohoku disaster. The Nikkei 225 (a stock market index for the Tokyo Stock Exchange) indicated that the value of stocks was down by 4.3% at 3 weeks after the Hanshin earthquake and by 6.9% at 3 weeks after the Tohoku earthquake. Although the Sendai region is less important to the country economically and industrially than Kobe, the country's Industrial Production Index decreased more sharply following the Tohoku disaster, and industrial production recovered more slowly. Also, although industrial production had returned to pre-quake levels within 1½ months after the Kobe earthquake, industrial production was only at 96% of pre-quake production 9 months after the Tohoku disaster (Drysedale, 2011; Schnell and Weinstein, 2012, p. 3).

A rapid increase in the country's Corporate Goods Price Index coupled with decreasing output indicated a dramatic contraction in the supply of goods after the Tohoku earthquake compared with that of the Hanshin earthquake. Many upstream industries were located in the areas affected by the Tohoku event, but supply chain disruptions were not thought to be responsible for Japan's continued low output, as production rebounded nearly uniformly across the country (83% of firms in unaffected areas

and 80% of firms in affected areas were producing at or above pre-quake levels by June 2011) (Drysedale, 2011; Schnell and Weinstein, 2012, p. 8).

Energy production in Japan, however, not only decreased in the month of the disaster, but continued to decrease throughout the year. Although only 11 of Japan's 54 nuclear powerplants were directly affected by the Tohoku earthquake and tsunami, communities around the country refused to let reactors that were closed for routine maintenance be restarted. As a result of the public opposition, only three nuclear reactors were functioning as of early 2012. Before the Tohoku earthquake, Japan obtained at least one-quarter of its electricity from nuclear powerplants, so that apart from supply chain dynamics, the changing energy portfolio of the country had, therefore, negatively affected production and economic recovery after the Tohoku earthquake compared with the Hanshin earthquake (Drysedale, 2011; Schnell and Weinstein, 2012, p. 7).

Legislation

During 2011, a number of laws were enacted by the Australian Parliament. Effective as of July 2012, a carbon tax of about \$24 per metric ton of carbon was to be imposed on 300 companies that were determined to have the largest carbon emission rates. Legislation would be enacted in July 2012 to expand the definition for minerals exploration to include geothermal energy sources. Updating the tax law by expanding the definition of exploration was intended to ensure that exploration for geothermal energy received the same treatment as traditional hydrocarbon energy sources. A proposal for a 30% mineral resource rent tax (a tax on profits generated from mineral resource revenues) passed the lower house of Parliament but had not passed the upper house by yearend 2011. Under the proposed tax, the Federal Government would refund State royalties to the mining companies (Engineering & Mining Journal, 2011a; Grubel, 2011; Swanepoel, 2011a).

The Australian States of New South Wales and Western Australia had proposed to increase mineral royalty rates to compensate for anticipated job losses to the States when the Federal carbon tax is enacted. The government of the State of Queensland drafted interim legislation to restrict mineral exploration activities within a 2-kilometer buffer area surrounding urban areas with a population greater than 1,000, but provided local jurisdictions the option to exempt themselves from this legislation. The government of the State of South Australia amended provisions of the Mining Act of 1971 that changed the mineral exploration application and assessment process; implemented programs for environmental protection, compliance, and enforcement; and modified landowner-related rights and obligations. The government of South Australian also enacted legislation that would prohibit mining in the Arkaroola region but would open the Woomera area to development (Engineering & Mining Journal, 2011a, b; Swanepoel, 2011b–e).

In 2011, the Mongolian Parliament extended a ban on issuance of new mining exploration licenses, and a Mongolian court ordered the Government to enforce a ban on mining in forest and river areas. A new two-tier royalty plan was passed by the Parliament in 2010 and went into effect on January 1, 2011. Under this plan, exported minerals are assessed a surtax

royalty in addition to a flat 5% royalty rate. For minerals other than copper, the surtax varies from 1% to 5%, depending on metal prices. The surtax on copper ranges between 22% and 30% for ore, between 11% and 15% for concentrates, and between 1% and 5% for final products. India's Forest and Environment Ministry had implemented regulations requiring all Government-owned mining companies to adopt a Corporate Environmental Policy. Similar regulations were to be applied at a later time to companies operating in the private sector (Das, 2011; Hogan Lovells, 2011; Thomson Reuters, 2011).

The Government of Afghanistan drafted a labor policy that set the minimum age for coal mine workers at 18. The guidelines were scheduled to be implemented in late 2011, and mining inspectors would be employed to ensure that the rules were upheld. Child labor was widespread in Afghanistan, and about 200 children were found to be working in coal mines in central Bamyan Province. Thirty years of conflict has pushed impoverished families to allow children to work in mines. Child labor was also used in small operations, such as cement production. The Government was undertaking a privatization and licensing program for four of its mineral prospects in 2011. They were the Badakhshan gold project in Badakhshan Province, the Balkhab copper project in Sar-e Pul and Balkh Provinces, the Shaيدا copper project in Herat Province, and the Zarkashan copper-gold project in Ghazni Province. The Government set a deadline of March 9, 2012, for the submission of expressions of interest in these projects. The tender process for each project was expected to result in the granting of a mining agreement and associated exploration license.

Exploration

Exploration activity in much of the Asia and the Pacific region increased in 2011 compared with that of 2010. Data from the Metals Economics Group (MEG)¹ suggest that the 2011 proposed budget allocations for Australian nonfuel mineral exploration activity increased by 35% to about \$2 billion in 2011 compared with that of 2010. The 2011 exploration budget allocation for the Pacific region and Southeast Asia (excluding Australia) was about \$1 billion, which was a 39% increase compared with that of 2010. China maintained its 4% share of the total exploration budget in 2011 (excluding exploration activity conducted by Government-owned entities) (Metals Economics Group, 2011).

The Australian Bureau of Statistics reported mineral exploration expenditures (excluding coal and petroleum) for fiscal year 2011 (the Australian fiscal year begins on July 1 and ends on June 30) of about \$2.4 billion, which is a 40% increase in the Australian expenditure for fiscal year 2011. The Western Australia Department of Mines and Petroleum reported that the number of prospecting licenses in Western Australia increased by about 1% from fiscal year 2010 to fiscal year 2011, and that the number of exploration licenses increased by 14% in fiscal

year 2011 compared with that of fiscal year 2010. The Australian statistics include expenditures for a greater number of mineral commodities than do the MEG statistics (Australian Bureau of Agricultural and Resource Economics and Sciences, 2011a; Geoscience Australia, 2012; Western Australia Department of Mines and Petroleum, 2012, p. 5).

The estimated expenditures for iron exploration in Australia accounted for 27% of the total Australian expenditure for metals and minerals exploration for fiscal year 2011 (excluding coal and petroleum). Exploration for gold and iron each accounted for about 27% of the total Australian expenditure for metals and minerals exploration for fiscal year 2011. In nominal terms, the amount budgeted for gold exploration increased by about 13% in fiscal year 2011 to \$657 million. The estimated expenditure for copper exploration increased by 60% to \$326 million in fiscal year 2011; exploration expenditures for nickel and cobalt increased by 33% to \$273 million; exploration expenditures for lead, silver, and zinc increased by 46% to \$77 million. Western Australia's share of the Australian mineral exploration expenditure accounted for 54%; Queensland accounted for about 22%; South Australia accounted for about 9%; the Northern Territory accounted for 7%; New South Wales accounted for 5%; Victoria accounted for 2%; and Tasmania accounted for 1% (Geoscience Australia, 2012; Western Australia Department of Mines and Petroleum, 2012).

Of the 182 nonfuel mineral exploration and development projects considered by the Australian Bureau of Agricultural and Resource Economics and Sciences between October 2010 and April 2011, 35 projects (19%) were under construction or committed for development and 147 projects (81%) were at an earlier stage of activity and listed as uncommitted for development. Of these latter projects, 34 were being considered for gold projects; 31 were being considered for iron; 17 were being considered for nickel; 16 were being considered for lead, silver, and zinc; 14 were being considered for copper; 7 were being considered for mineral sands; and 5 were being considered for bauxite. The remaining 23 uncommitted projects considered in this Australian Government assessment were for rare-earth elements, tin, vanadium, and other mineral commodities. The Australian States and Territories with the highest levels of exploration activity in 2011 were, in descending order of the number of sites compiled for this annual review, Western Australia (52%), Queensland (13%), New South Wales and South Australia (10% each), the Northern Territory (9%), and Tasmania and Victoria (3% each) (Australian Bureau of Agricultural and Resource Economics and Sciences, 2011b, p. 17).

Based on MEG data, Indonesia, Papua New Guinea, and the Philippines together accounted for about 80% of the total mineral exploration budget for the Southeast Asia and Pacific Ocean Islands region when Australia is excluded. The increase in this region can be attributed to continued interest by companies from China and the Republic of Korea to expand sources of supply for strategic minerals, such as base metals, gold, and rare-earth elements, and by companies from Japan to develop regional copper and nickel deposits to supply Japan's smelting industry. There is also increased interest among international companies in exploring for undersea minerals in the Pacific Ocean. Based on the data compiled by the USGS on

¹Metals Economics Group (MEG) data for 2012 included exploration budgets for 20 mineral commodities (including copper, gold, lead, lithium, nickel, niobium, phosphate, potash, rare-earth elements, silver, tantalum, uranium, and zinc) from companies with exploration budgets of \$100,000 and greater, which MEG estimated covers between 90% and 95% of world nonferrous, nonfuel mineral exploration budgets.

active exploration sites, the three countries in the region with the largest number of exploration sites were, in order of exploration sites, Papua New Guinea, the Philippines, and Indonesia, which together accounted for 68% of the active exploration sites in the region. Other countries with active exploration in 2011 included Fiji, Java, the Republic of Korea, Laos, Malaysia, New Caledonia, New Zealand, and the Solomon Islands. Gold and silver exploration accounted for approximately 68% of all exploration interest in the Pacific region, base metals accounted for about 27%, iron and PGM each accounted for about 1%, and other minerals accounted for 3% of the reported activity in 2011. At two-thirds of the sites, companies were conducting early-stage exploration, and at one-third of the sites, they were conducting advanced exploration or were exploring for minerals adjacent to producing mines (Takemoto, 2008; Metals Economics Group, 2011).

Since 2008, the region's share of the world exploration budget has generally increased whereas its share in terms of the number of active exploration sites as compiled by the USGS has decreased. This trend is perhaps reflective of the increased interest by China in exploring for resources in the region. Unlike Africa, where Chinese interests have been working at the national level to secure an adequate supply of resources primarily through trade agreements, Chinese interests in the Pacific are working to secure access to future resources by establishing joint-venture agreements to develop selected advanced deposits. Thus, a greater amount of the regional exploration budget is funding the development of a small number of deposits (Metals Economics Group, 2011).

Cambodia issued 24 mineral resource exploration licenses to local and foreign companies in 2011. Indonesia was conducting a review of more than 8,000 existing mining permits to ensure compliance with new environmental legislation (Nathalia, 2011; People's Daily Online, 2012).

Based on site data compiled by the USGS, exploration activity in Asia in 2011 primarily focused on gold (40% of all sites in this group had gold as the primary commodity); copper (13%); uranium (10%); rare earths (8%); diamond, iron, and silver (6% each); and other mineral commodities (11%).

In an effort to supply its growing industry with raw materials, China opened its mining sector to foreign investment during the 1990s, extended its search for minerals by investing in foreign exploration and development projects during the past decade, and received approval to conduct deep-sea mineral exploration activities in the Indian Ocean in 2011. Domestically, the Chinese Government had announced plans to consolidate and modernize its mining operations. The Chinese mineral industry is dominated by state-owned enterprises, and regional governments issue most exploration and development licenses. In 2011, 23 private foreign companies were conducting mineral exploration in China. Chinese interests continued to explore outside of China for raw materials. MDM Engineering (an Africa-focused mine exploration and development company) reported that 40% of its 2011 projects were funded in some form by the Government of China (Creamer, 2011; McCrae, 2011; Wheeler, 2011).

Commodity Overview

Estimates for the production of major mineral commodities for 2011 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 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 estimates of future production, exploration and mine development, the 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.—World primary and secondary aluminum production increased by about 13.5% to 56.5 million metric tons (Mt) in 2011 compared with that of 2010 owing to smelter reopenings and expansions as prices recovered from the lows during the financial crisis of 2008 to 2009. Asia's production of aluminum increased by 9.4% in 2011 to 26.8 Mt compared with that of 2010. China accounted for 82.8% of the regional total and was the world's leading producer of aluminum, accounting for 39.2% of the total, followed by Australia (7.7% of regional production and 3.7% global production) and India (6.2% of regional production and 3% of global production) (tables 4, 6).

In Australia, aluminum was produced at Alcoa of Australia's Point Henry and Portland smelters in Victoria, Hydro Aluminium Kurri Kurri Pty. Ltd.'s Kurri Kurri smelter in New South Wales, and Rio Tinto Alcan's Bell Bay smelter in Tasmania, as well as the Boyne Island smelter in Queensland and the Tomago smelter in New South Wales. Smelter shutdowns in Australia were announced in early 2012 because of the cost of power generation, low aluminum prices, and costs associated with proposed regulations on emissions of greenhouse gases in the country.

In China, the Government announced a policy to permanently shut down 600,000 metric tons per year (t/yr) of primary aluminum capacity that used obsolete technology. The stated purpose of the policy was to remove the least efficient potlines, limit energy consumption, reduce pollution emissions, and reduce oversupply. The closures were expected to be offset by new smelters and expansions. Approximately 270,000 t/yr of aluminum smelter capacity was specifically identified for elimination in Hubei, Shaanxi, Henan, and Qinghai Provinces. Several Chinese Government agencies took action to stop construction of 23 aluminum smelter projects, which would

have had a combined capacity of 7.74 million metric tons per year (Mt/yr). The action was taken to prevent overcapacity of aluminum smelters as well as to limit power consumption and pollution (Bray, 2012a, p. 5.5).

In India, the National Aluminium Co. Ltd. (Nalco) temporarily shut down 10% of the capacity at its 460,000-t/yr Angul smelter. Shortages of coal for its powerplant and decreasing aluminum prices were cited as reasons for the shutdown. Nalco expected to complete upgrading smelting pots in 2012 that would increase capacity to 560,000 t/yr. Vedanta Resources plc was upgrading the capacity at the Jharsuguda I smelter to 550,000 t/yr with a project scheduled for completion by the end of June 2013. Bedanta was progressing on construction of the 1.25-Mt/yr Jharsuguda II smelter, and completion was expected by yearend 2013. Construction of the 325,000-t/yr Korba III smelter was progressing, and initial production was expected in the fourth quarter of 2012. Other smelter expansions that were either completed or expected to be completed by Hindalco Industries Ltd. would add at least 1.14 Mt/yr of additional smelter capacity by 2015 (Bray, 2012a, p. 5.6).

The damage that resulted from the earthquake and tsunami at the Daiichi nuclear plant in Japan had an effect on aluminum consumption by the domestic automotive industry. Although primary aluminum production in Japan was not affected substantially, the loss of power and the damage to factories and infrastructure forced the closure of several automobile parts manufacturers in Japan. The shortage of parts from Japan forced some assembly lines in Japan and the United States to close or slow production for several months, which resulted in decreased consumption of secondary aluminum in China by automobile parts manufacturers. In the Republic of Korea, Novelis Inc. announced that it would expand its recycling facility and rolling mill in Yeongju. The expansion of the recycling facility would increase capacity by approximately 220,000 t/yr by yearend 2012. The expansion of the rolling mill was expected to be completed in late 2013 (Bray, 2012a, p. 5.7).

In 2011, world production of bauxite increased by 16.7% compared with that of 2010. Asia's production of bauxite increased by 25.8% in 2011 to 166 Mt compared with that of 2010. Australia's production of bauxite accounted for 42% of the regional and 27.8% of the world total in 2011; Australia was the world's leading producer of bauxite, followed by China (27.1% of regional production and 17.8% of global production) and India (6.2% of regional production and 4.1% of global production) (tables 4 and 5).

In Australia, bauxite was mined at the Gove Mine in the Northern Territory; the Weipa Mine in the northern part of Queensland; and the Huntly, the Willowdale, and the Worsley Mines in Western Australia. All Australia's alumina refineries were located in close proximity to their bauxite mines and shipping facilities. Western Australia remained the leading bauxite-producing State and accounted for about 60% of the country's total output of bauxite followed by Queensland (30%) and the Northern Territory (10%). Owing to increasing demand for alumina in China in recent years, Australian producers expanded the output capacities of their bauxite mines and alumina refineries.

Rio Tinto Alcan was conducting a feasibility study and an environmental impact study to develop the bauxite resource in an area south of Embley River and the existing Weipa Mine. The new operation would progressively replace depleted resources at the Andoom and the East Weipa mining areas in Weipa and extend production of bauxite deposits in the area by 40 years. The new development would increase output capacity to 50 Mt/yr from the current capacity of 21 Mt/yr in the region south of the Weipa Peninsula. Construction of a bauxite mine was scheduled to begin in 2012, depending on regulatory and internal company approvals. The first shipments were expected to be in 2016. In 2011, bauxite production at the Weipa Mine increased by 9% to meet the demand from a third party. The production of alumina decreased by 4% because of abnormally heavy rains in Queensland during the first quarter of 2011.

In China, Guangdong Galuminium Group Ltd. completed an 800,000-t/yr alumina refinery in Qingzhen, Guizhou Province, which started production in December. The company was also developing a mine at a nearby bauxite deposit to supply the refinery. The mine would have a capacity of 1.6 Mt/yr when completed at the beginning of 2012. China Power Investment Corp. (CPI) started construction of a bauxite mine in Wanchangping, Guizhou Province. The mine would produce 1 Mt/yr of bauxite that would supply a 1-Mt/yr alumina refinery being constructed in Wuchuan, Guizhou Province. CPI started construction of a 1-Mt/yr bauxite mine at Dazhuyuan, Guizhou Province, also to supply the Wuchuan alumina refinery (Bray, 2012b, p. 10.3).

Shanxi Tongde Aluminum Co. Ltd. started construction of a 1-Mt/yr alumina refinery in Yangjiawan, Shanxi Province. Further expansion of the refinery to 2.8 Mt/yr was planned, and a 6-Mt/yr bauxite mine and 1-Mt/yr aluminum smelter were planned as part of the project. A completion schedule was not available. Yunnan Aluminum Co. Ltd. completed its 800,000-t/yr alumina refinery in Wenshan, Yunnan Province, late in 2011 but delayed startup until 2012 owing to technical issues. Production of bauxite from the nearby mine started in August (Bray, 2012b, p. 10.3).

Citing limited, low-quality bauxite reserves in China, the Chinese Government was funding research on recovering alumina from coal ash. Two refineries were reportedly being constructed to recover alumina from coal ash as part of the program. Datang International China Coal Corp. was constructing a 100,000-t/yr alumina refinery in Pingsu, Shanxi Province, to be completed in the second half of 2012, with further expansions possible. In addition to the projects which were part of the research program, in December, Shenhua Group Corp. Ltd. started construction of a refinery to recover alumina from coal ash in Jungar Banner, Inner Mongolia Autonomous Region. The refinery capacity was expected to be 1 Mt/yr, and further expansions were proposed (Bray, 2012b, p. 10.3)

In Indonesia, PT Aneka Tambang (Antam) started construction of a 300,000-t/yr chemical-grade alumina refinery at Tayan, West Kalimantan. The project was a joint venture between Antam (80%) and Japan-based Showa Denko K.K. (20%). Bauxite for the refinery was to come from a nearby deposit that was being developed. The refinery was expected to begin production in early 2014. Antam also planned to

construct a smelter-grade alumina refinery in Mempawah, West Kalimantan, and was exploring for bauxite in several prospects nearby (Bray, 2012b, p. 10.4).

In Vietnam, state-owned Vietnam National Coal and Mineral Industries Group (Vinacomin) was progressing toward opening a 600,000-t/yr alumina refinery in Tan Rai, Lam Dong Province. Construction had been scheduled for completion in September, but heavy rainfall delayed completion until December. Commissioning of the refinery was completed in April 2012. Tan Rai would be Vietnam's first alumina refinery and would use bauxite from adjacent deposits. Alumina from the refinery was to be sold to customers in China, such as Aluminum Corporation of China (Chinalco), which was providing technical support in the construction of the refinery, and in other countries. Mining of bauxite from a deposit adjacent to the refinery started during 2011. Vinacomin was also building a 650,000-t/yr alumina refinery in Nhan Co, Dak Nong Province, which was to be completed in 2013 (Bray, 2012b, p. 10.5).

Copper.—The region's production of mined copper accounted for 20.8% of the world total in 2011 compared with 21% in 2010. China was the leading regional producer followed by Australia and Indonesia. Mined copper production increased modestly in 2011 compared with that of 2010 in India (15.2%), Australia (12.8%), the Philippines (10.3%), and China (9.5%), whereas it decreased significantly in Indonesia (by 72%) and Papua New Guinea (by 18.8%). Between 2011 and 2018, regional production of mined and refined copper was expected to continue to increase at an average annual rate of 7.3% and 1.8%, respectively. This estimation was based on reported capacity expansions of mined copper in Australia, China, India, Mongolia, the Philippines, and Vietnam, and on reported capacity expansions of refined copper in China, India, Indonesia, and Japan (tables 4, 7, 8).

Indonesia's mined copper production decreased owing to lower ore grades at United States-based Freeport-McMoRan Copper and Gold Inc.'s Grasberg Mine. Mined copper production also decreased in Papua New Guinea owing to decreased ore grades at the Ok Tedi Mine (owned by National Papua New Guinea Sustainable Development Program Ltd. and the Government of Papua New Guinea) and because of shutting down of the mill on two occasions during the year.

Mongolia's mined copper production decreased slightly by 2.4% in 2011 compared with that of 2010, but a sixfold increase in annual production was projected by 2014 compared with that of 2011. This growth was projected to come almost completely from the Oyu Tolgoi project, which had estimated total reserves and resources of 3.5 billion metric tons (Gt) containing 30.6 Mt of copper and 1.02 million kilograms of gold. Oyu Tolgoi was jointly owned by Turquoise Hill Resources Ltd. of Canada (66%) (previously known as Ivanhoe Mines Ltd., which was 51% owned by Rio Tinto plc) and the Mongolian Government (34%). The operation was expected to start up in 2013 (Rio Tinto plc, 2013, p. 7, 51; Ivanhoe Mines Ltd., 2012, p. 13–17).

In China, CNMC Fubang Copper Industry Co. Ltd. completed the construction of its 100,000-t/yr copper blister plant in Linxi County, Nei Mongol Autonomous Region. The blister copper would be shipped to its 60,000-t/yr copper refinery to be refined. Sichuan Hongda Co. Ltd. announced that the company would

invest \$1.6 billion to build a multimetal complex at Shifang Economic Development Zone in Shifang City, Sichuan Province. The complex would hold a 400,000-t/yr refined copper plant and a 40,000-t/yr molybdenum plant. In the first phase of construction, a 200,000-t/yr refined copper plant, 25,000-t/yr ferromolybdenum plant, and 7,500-t/yr molybdenum oxide plant would be built. The Ministry of Environmental Protection approved the environmental impact study. Shandong Dongying Fangyuan Nonferrous Metals Co. Ltd. was scheduled to complete its second 200,000-t/yr copper refinery in 2012. Fangyuan's refined copper capacity would increase to 400,000 t/yr.

Gold.—China and Australia ranked first and second in the world production of gold, and accounted for 13.5% and 9.7%, respectively, of global production. Production of mined gold in the countries of the Asia and the Pacific region accounted for 32.1% of the world total in 2011 compared with 33.8% in 2010. Regional gold production in 2011 decreased by 0.8% compared with that of 2010. China was the leading mined-gold-producing country in the region and accounted for 42.2% of regional production; it was followed by Australia (30.3%), Indonesia (11.2%), and Papua New Guinea (7.2%). The decrease in the region's contribution to global gold production was owing, in part, to a 9.6% decrease in production in Indonesia, which appeared to be caused by a cessation of production at the North Lanut Mine as Avocet Mining plc of the United Kingdom completed the sale of the operation. The largest decreases in terms of volume were in the Philippines (23.8%) and Laos (21.3%), each of which, however, accounted for only 3.6% and 0.4%, respectively, of regional production. The largest increase was in China (17,000 kilograms). Regional production of mined gold was expected to increase by about 29% by yearend 2018 compared with that of 2011 (tables 4 and 9; Avocet Mining plc, 2011).

Australian gold production was expected to increase by 7.7% by 2014. Crocodile Gold Corp. of Australia's Cosmo Deep Mine, Regis Resources Ltd. of Australia's Duketon Mine, and Anglo Gold Ashanti Ltd. of South Africa's Tropicana Joint Venture project were all expected to be brought onstream during the next 2 years. In China, gold production was expected to increase by 10.5% by 2014 compared with that of 2011 and to continue to increase gradually. Many of China's gold mines had relatively high production costs and were small in scale. Gold production in Mongolia was expected to increase because of access to exceptionally high-grade ore from the Oyu Tolgoi copper-gold mine, and output was expected to remain steady after 2013. The increase in gold production in Papua New Guinea was dependent upon whether the Frieda River Mine and the Yandera Mine are put into operation.

The region was the world's major market for gold and accounted for about 57.6% of the world's total gold consumption in terms of value in 2011 compared with 59% in 2010. India was the world's leading consumer of gold, accounting for about 26% of the world total. Owing to continuing strong economic growth, China was the second ranked gold consumer, and its share of the world total increased to about 23% compared with 19% in 2010. The total gold demand from China and India, however, decreased to about 1,750 metric tons (t) in 2011 compared with more than 2,000 t

in 2010. The decrease in consumption in the Asia and the Pacific region was attributable in part to inflation and monetary tightening in India and subsequent depreciation of the country's currency. China's gold demand reached 82% of that of India in 2011, having exceeded the 50% mark for the first time only in 2009. Gold demand in both countries was expected to remain high in the long term despite potential decreases in the short term.

Iron Ore and Iron and Steel.—The region's production of iron ore was estimated to account for, in terms of gross weight, about 69.7% of the world total in 2011 compared with 67% in 2010. China ranked first in the world in the production of iron ore (in terms of iron content), and Australia and India ranked second and third in the region, respectively, in steel production in the Asia and the Pacific region. Regional production of iron ore was expected to increase at an average annual rate of about 2% between 2011 and 2018. This prediction is based on gradual capacity expansions in Australia, China, and India (tables 4, 10).

The East Asian countries of China, Japan, and the Republic of Korea were among the world's leading consumers and importers of iron ore. Australia was the region's and the world's leading supplier of iron ore. The Republic of Korea'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.

The region's production of crude steel was estimated to account for about 64.9% of the world total compared with 64% in 2010. China, which was by far the world's leading producer of crude steel, accounted for about 45.1% of the world total compared with 44.3% in 2010. Japan, India, and the Republic of Korea ranked second, third, and fourth, respectively, in steel production in the Asia and the Pacific region. Regional production of crude steel was expected to increase by 12.8% between 2011 and 2018 (table 11).

In China, after more than 5 years, the NDRC finally gave permission for Baoshan Iron and Steel Group and Wuhan Iron and Steel Group to build two iron and steel complexes in Guangdong Province and Guangxi Zhunagzu Autonomous Region, respectively. Baoshan would invest about \$11 billion in the iron and steel project in Zhanjiang, Guangdong. At its designed capacity, the plant would produce 10 Mt of crude steel, 9.4 Mt of steel products, and 9.2 Mt of pig iron. Wuhan would also invest about \$11 billion in the iron and steel project at Fangchenggang, Guangxi. That plant would have a designed capacity to produce 9.2 Mt of crude steel, 8.6 Mt of steel products, and 8.5 Mt of pig iron. Currently, China imported about 70% of its high-value-added steel products from overseas. Baoshan planned to produce high-value-added steel products at its Zhanjiang plant to meet domestic customers' demand. Wuhan planned to have its steel products target manufacturing bases for automobiles and home appliances in the southern part of the country and in the countries of Southeast Asia.

Platinum-Group Metals.—The region's production of mined platinum and palladium was insignificant and accounted for less than 1% of the world total in 2010. Jinchuan Nonferrous Metals of China produced platinum and palladium as byproducts of mined nickel from its nickel mining and refining operations at Jinchuan, Gansu Province. 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 in 2011 (tables 12 and 13).

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 73.8% and 82.4%, respectively, of the world total in 2011 compared with 70.1% and 80.9% in 2010. 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 about two-thirds of the world's mined tin output. Other significant refined tin producers in the region were Malaysia and Thailand.

Regional production of refined tin was expected to increase by about 6.1% by 2014 compared with that of 2011 and to increase by about another 7.1% by yearend 2018. Owing to depleted tin resources in the region, the production of mined tin was expected to decrease slightly during that period. This estimation was based on reported gradual expansions of capacity and increases in productivity. In Australia, Consolidated Tin Mines Ltd.'s three projects near Cairns were exploration-stage projects in 2011 (tables 14, 15).

Owing to increased domestic demand in China, Indonesia replaced China as the leading tin exporting country, and China became a net importer of tin concentrates. In 2011, Burma accounted for 71.7% of the total imports to China, which was about a threefold increase compared with that of 2010. Indonesia was the leading unwrought tin exporter to China and accounted for 38.6% of China's total tin imports, followed by Malaysia (25.1%), and Thailand.

Tin was one of the Chinese Government's protected commodities. Owing to increased domestic tin consumption, the export volume of tin from China was expected to continue to decrease in the future. Likewise, the Indonesian Government had banned exporting raw material, and as a result, the volume of tin supply from Indonesia to the world market continued to decrease. 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 an estimated 12.1% of the world total in 2011. Australia was by far the leading diamond producing country in the region and was the third ranked diamond producing country in the world. The quality of diamond from Australia was considered low grade compared with that from Angola, the Central African Republic, Guyana, India, Indonesia, and Sierra Leone. Rio Tinto Australia, which operated diamond mines in Australia, exported most of its diamond output and planned to divest its diamond interests. India was the leading diamond importing country in the region and ranked second in the world behind the European Union (Rio Tinto plc, 2012).

Lithium.—Lithium is the lightest metallic element and has been widely used in the battery and electronics sectors. Worldwide production and consumption of lithium increased by 17.2% in 2011 compared with that of 2010. Australia was by far the leading lithium producer in the Asia and the Pacific region followed by China. In Australia, Talison Minerals Group's lithium operation, which reportedly is the largest spodumene deposit in the world, is located at Greenbushes in Western Australia. Talison's lithium resource at Greenbushes was 31.4 Mt at an average grade of 3.1% lithium oxide, and the estimated life of the Greenbushes Mine was increased to 22 years. The two ore treatment plants at the facility had a combined total output capacity of 600,000 t/yr to produce about 260,000 t/yr of lithium concentrates that contained about 15% lithium carbonate equivalent (table 17).

In China, Qinghai CITIC Guoan Technology Development Co. Ltd., Tibet Mineral Development Co. Ltd., and Xinjiang Haoxin Lithium Salt Development Co. Ltd. were major lithium producers. High production costs and low recovery rates, however, forced the companies to source raw material from overseas. Australia supplied about 80% of China's lithium demand.

The Government of the Republic of Korea, as part of the effort to secure stable long-term supplies of lithium for its expanding automobile, battery, and electronics industries, partnered with domestic companies, including POSCO Co. Ltd. and SK Energy Co., Ltd., to acquire lithium from a broad range of sources and countries. The Government had signed an agreement with POSCO and the Korea Institute of Geoscience and Mineral Resources to conduct joint research and to build an offshore pilot plant for the commercial production of lithium from seawater. The pilot plant was completed in 2011 and was expected to produce 30 t/yr of lithium carbonate beginning in 2014, with the goal of producing a total of 100,000 t of lithium carbonate by 2020 (Jaskula, 2012, p. 44.6).

Mineral Fuels

Coal.—The region's total production of coal, which included anthracite, bituminous, and lignite, accounted for about 69.8% of the world total in 2011. The region's production of anthracite coal, however, accounted for about 93.2% of the world total, and its production of bituminous coal accounted for about 67.5%. China, which was by far the world's leading producer of anthracite and bituminous coals, accounted for 77.9% and 47.6%, respectively, of the world total. In the Asia and the Pacific region, Australia, India, and Indonesia, and North Korea were also significant producers of the various grades of coal. Overall regional coal production was expected to increase at an average annual rate of about 1.4% between 2011 and 2018. This prediction takes into account planned capacity expansions and newly developed mines (tables 4, 18).

In China, about two-thirds of the country's electricity was produced by coal-fired powerplants and about 50% of the country's total coal output was consumed by the power sector. Although China's coal production continued to increase in 2011 because of an increase in demand for coal by every industrial sector, China became a net coal importing country. Provincial

governments in China were urged to provide financial and technological support to coal enterprises to help transform them into more efficient and safe coal producers. A proposed consolidation within the coal sector would lead to 10 large coal enterprises with output capacities of more than 100 Mt/yr and 10 coal enterprises with output capacities of 50 Mt/yr. The number of coal producers would be reduced to about 4,000 by 2015. The top 20 large coal enterprises would account for about 60% of the country's coal output. The average annual production of each coal company would increase to more than 1 Mt from 300,000 t. In 2015, the country would have a coal output capacity of 4.1 Gt, and coal production and consumption would be controlled by Government policy at 3.9 Gt.

Australia was the world's leading exporter of coal. Queensland and New South Wales were Australia's leading coal-producing States and accounted for about 95% of the country's total output. Queensland's coal output accounted for 52.3% of the country's total output and was mainly from the Bowen Basin, which extends south from Collinsville to Blackwater and Moura, and from mines at Blair Athol, Newlands, and near Brisbane. New South Wales' coal output accounted for 45.3% of the country's total output and was mined near the eastern and western edges of the Sydney Gunnedah Basin.

Australia exported more than 280.6 Mt of coal compared with 300.3 Mt in 2010. Japan, which was the leading destination for Australian metallurgical coal, received 30.7% of Australia's metallurgical coal exports, followed by India, 21.8%; the Republic of Korea, 6.7%; China, 5.3%, and others, 35.5%. Japan was also the leading destination for Australian thermal coal and received 44.3%, followed by the Republic of Korea, 20.0%; Taiwan, 12.9%; China, 11.3%; and others, 11.5%. Owing to increased demand from its fellow countries in the Asia and the Pacific region, such as China and India, Australia's metallurgical coal exports were expected to increase during the next several years.

Mongolia hosts about 300 coal deposits and occurrences in 15 basins, about 60% of which are located in the Eastern and Gobi regions. Mongolia's total coal resources include about 9.8 Gt of proven reserves, and the country's still unexploited Tavan Tolgoi deposit contains a reported 6.5 Gt of coking coal. As of early 2011, the initial public offering (IPO) for Tavan Tolgoi was expected to take place on the Hong Kong stock exchange by yearend 2011 or early 2012. The state-owned Erdenes Tavan Tolgoi Co. had planned to retain 50% ownership of the project and would distribute 10% of the shares to Mongolian citizens, 10% to Mongolian companies, and 30% to the IPO. By January 2012, however, after encountering regulatory problems approving the \$3 billion IPO in Hong Kong, the Mongolian Government decided to seek an IPO on the London Stock Exchange as well as domestically on the Mongolian Stock Exchange.

Trade Review

During the past three 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 in the region have reduced barriers to trade and investment. Both the cross-border transshipment of production components and assembly within the region had increased during the past several years, and the composition of exports was shifted toward intermediate goods. The share of parts and components in manufactured imports also was trending upward in the region. By 2010, 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. Although recent economic policy changes in China were designed to increase domestic consumption, 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.

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TABLE 1
ASIA AND THE PACIFIC: AREA AND POPULATION IN 2011

Country	Area ¹ (square kilometers)	Estimated population ² (thousands)
Afghanistan	652,230	35,320
Australia	7,741,220	22,621
Bangladesh	143,998	150,494
Bhutan	38,394	738
Brunei	5,765	406
Burma	676,578	54,585 ¹
Cambodia	181,035	14,305
China	9,596,961	1,344,130
Fiji	18,274	868
Hong Kong	1,104	7,072
India	3,287,263	1,241,492
Indonesia	1,904,569	242,326
Japan	377,915	127,817
Korea, North	120,538	24,451
Korea, Republic of	99,720	49,779
Laos	236,800	6,288
Malaysia	329,847	28,859
Mongolia	1,564,116	2,800
Nepal	147,181	30,486
New Caledonia	18,575	249
New Zealand	267,710	4,405
Pakistan	796,095	176,745
Papua New Guinea	462,840	7,014
Philippines	300,000	94,852
Singapore	697	5,184
Solomon Islands	28,896	552
Sri Lanka	65,610	20,869
Taiwan	35,980	23,235 ¹
Thailand	513,120	69,519
Timor-Leste	14,874	1,176
Vietnam	331,210	87,840
Total	29,959,115	3,876,477
World total	148,940,000	6,973,738

¹Source: U.S. Central Intelligence Agency, The World Factbook 2012.

²Source: The World Bank, 2012 World Development Indicators Database.

TABLE 2
ASIA AND THE PACIFIC: GROSS DOMESTIC PRODUCT^{1,2}

Country	Gross domestic product in 2011 based on purchasing power parity		Real gross domestic product growth rate (percentage)		
	Gross value	Per capita	2009	2010	2011
	(million dollars)	(dollars)			
Afghanistan	29,738	956	20.9	8.2	5.8
Australia	915,098	40,847	1.4	2.7	2.1
Bangladesh	283,469	1,909	5.9	6.4	6.5
Bhutan	4,309	5,836	6.7	8.3	5.3
Brunei	21,033	49,536	-1.8	2.6	2.2
Burma ³	89,230	1,400	5.1	5.5	6.2
Cambodia	33,819	2,239	-2.0	6.0	7.1
China	11,299,790	8,387	9.2	10.3	9.2
Fiji	4,153	4,643	-1.3	0.3	2.1
Hong Kong	351,473	49,417	-2.7	7.0	5.0
India	4,420,560	3,663	6.8	10.1	6.8
Indonesia	1,124,630	4,666	4.6	6.1	6.5
Japan	4,444,140	34,748	-6.3	4.0	-0.8
Korea, North ³	40,000	1,800	-0.9	4.0	0.8
Korea, Republic of	1,554,120	31,220	0.3	6.2	3.6
Laos	17,408	2,768	7.6	7.9	8.0
Malaysia	463,689	16,240	-1.6	7.2	5.1
Mongolia	13,292	4,770	-1.3	6.4	17.5
Nepal	38,080	1,249	4.4	4.6	3.9
New Caledonia ⁴	3,158	15,000	NA	NA	NA
New Zealand	123,709	28,011	-2.0	1.7	1.3
Pakistan	488,372	2,786	1.7	3.8	3.0
Papua New Guinea	16,863	2,532	5.5	7.0	8.9
Philippines	391,119	4,080	1.1	7.6	3.9
Singapore	314,906	59,710	-0.8	14.5	4.9
Solomon Islands	1,761	3,198	-1.2	6.5	10.7
Sri Lanka	116,333	5,664	3.5	8.0	8.3
Taiwan	875,941	37,716	-1.9	10.9	4.0
Thailand	602,216	9,398	-2.4	7.8	0.1
Timor-Leste ³	10,630	9,500	12.9	6.1	10.0
Vietnam	299,980	3,359	5.3	6.8	5.9
Total	28,393,019	XX	XX	XX	XX
World total	78,969,780	XX	-0.6	5.1	3.8

NA Not available. XX Not applicable.

¹Source: International Monetary Fund, World Economic Outlook Database, October 2012.

²Gross domestic product listed may differ from that reported in individual country chapters owing to differences in source or date of reporting.

³Based on 2011 to 2012 estimates. Source: U.S. Central Intelligence Agency, The World Factbook 2012.

⁴Based on 2003 estimate. Source: U.S. Central Intelligence Agency, The World Factbook 2012.

TABLE 3
ASIA AND THE PACIFIC: SELECTED EXPLORATION SITES IN 2011¹

Country	Type ²	Site	Commodity	Company	Resources ³
Australia	E	Doolgumma	Au, Ag, Cu	Sandfire Resources NL	474,000 oz Au, 3.75 Moz Ag, 470,000 t Cu (ID).
Do.	P	Frog's Leg	Au	La Mancha Resources Inc.	714,000 oz Au (T).
Do.	E	Lake Giles	Iron ore	MacArthur Minerals Ltd.	323 Mt Fe (IF).
Do.	E	Rannes	Au, Ag	Solomon Gold plc.	79,000 oz Au, 7.9 Moz Ag (IF).
Do.	E	Springfield	Cu, Au	Talisman Mining Corp.	Data not released.
China	P	Jiama	Cu, Au, Ag, Mo, Pb, Zn	China Gold International Resources Corp.	0.89 Mt Cu, 1 Moz Au, 56 Moz Ag, 41,000 t Mo, 85,000 t Pb, 53,000 t Zn (R).
Do.	P	Jimfeng	Au	Eldorado Gold Corp.	3.2 Moz Au (R).
Papua New Guinea	E	Golpu	Cu, Au, Mo	Harmony Gold Mining Company Ltd.	800,000 t Cu, 1.4 Moz Au, 8,500 t Mo (R).

Do. Ditto.

¹ Abbreviations used for commodities in this table include the following: Ag—silver; Au—gold; Cu—copper; Fe—iron ore; Mo—molybdenum; Pb—lead; 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 E—Active exploration; P—Exploration associated with producing site.

³ Based on 2010 data reported from various sources; ID—indicated; IF—inferred; R—proven + probable; T—total resource.

Resource data not verified by the U.S. Geological Survey.

TABLE 4
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2011¹
(Thousand metric tons unless otherwise specified)

Country	Metals												
	Aluminum			Copper		Gold, mine output,		Iron and steel			Lead		
	Alumina	Bauxite	Metal ²	Mine output, Cu content	Refined, primary	Au content (kilograms)	Ore, gross weight	Pig iron	Steel, crude	Mine output, Pb content	Refined, primary		
Afghanistan ^e	--	--	--	--	--	--	--	--	--	--	--	--	
Australia	19,399	69,976	2,075	958	477	260,000	488,000 ^e	6,400 ^e	6,538	621	187		
Bangladesh ^e	--	--	--	--	--	--	--	--	--	--	--		
Bhutan ^e	--	--	--	--	--	--	--	--	--	--	--		
Brunei ³	--	--	--	--	--	--	--	--	--	--	--		
Burma	--	--	--	10	10	100 ^e	--	2 ^e	25 ^e	9 ^e	--		
Cambodia ^e	--	--	--	--	--	--	--	--	--	--	--		
China ^e	34,100	45,000	22,200	1,270	3,390	362,000	1,330,000	640,510 ⁴	685,280 ⁴	2,400	3,200		
Christmas Island	--	--	--	--	--	--	--	--	--	--	--		
Fiji	--	--	--	--	--	1,622	--	--	--	--	--		
Hong Kong ³	--	--	--	--	--	--	--	--	--	--	--		
India ^e	3,880	10,300	1,667 ⁴	38	673	--	240,000 ⁴	38,900 ⁴	72,200 ⁴	115	120 ⁴		
Indonesia ^e	--	40,000	244 ⁴	543 ⁴	257 ⁴	96,100 ⁴	--	--	3,800	--	--		
Japan	280 ^e	--	189	--	1,094	8,691	--	81,028	107,601	--	100		
Korea, North ^e	--	--	--	12	15	2,000	5,300	900	1,300	13	9		
Korea, Republic of	--	--	--	--	595	209	542	42,213	68,519	3	257		
Laos	--	--	--	139	79	3,984	--	--	--	3	--		
Malaysia	--	188	--	--	--	4,215	7,699	--	5,941	--	--		
Mongolia	--	--	--	122	2	5,703	5,678	--	60	--	--		
Nauru	--	--	--	--	--	--	--	--	--	--	--		
Nepal ^e	--	--	--	--	--	--	--	--	--	--	--		
New Caledonia	--	--	--	--	--	--	--	--	--	--	--		
New Zealand	--	--	376	--	--	14,324	--	659 ^e	844 ^e	--	--		
Pakistan ^e	--	10	--	19	--	--	400	500	1,200	27	--		
Papua New Guinea ^e	--	--	--	130	--	62,200	--	--	--	--	--		
Philippines	--	--	--	64	164	31,120	--	--	1,200	--	--		
Singapore	--	--	--	--	--	--	--	--	NA	--	--		
Solomon Islands	--	--	--	--	--	--	--	--	--	--	--		
Sri Lanka ^e	--	--	--	--	--	--	--	--	--	--	--		
Taiwan	--	--	--	--	--	--	--	12,940	22,879	--	--		
Thailand ^e	--	--	--	--	--	2,372 ⁴	970	--	4,000	--	--		
Vietnam ^e	--	100	--	11	8	3,500	4,168 ⁴	800	4,500	7	--		
Total	57,700	166,000	26,800	3,320	6,770	858,000	2,080,000	825,000	986,000	3,200	3,870		
Share of world total	63%	66%	47%	21%	41%	32%	70%	75%	65%	68%	76%		
United States	3,570	NA	5,100	1,110	993	234,000	54,700	30,200	86,400	334	118		
World total	91,800	252,000	56,500	15,900	16,600	2,670,000	2,980,000	1,090,000	1,520,000	4,730	5,080		

See footnotes at end of table.

TABLE 4—Continued
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2011¹
(Thousand metric tons unless otherwise specified)

Country	Metals											
	Manganese ore,		Mercury,		Nickel, metal content		Tin (metric tons)		Tungsten,		Zinc (metric tons)	
	mine output, Mn content	mine output, Hg content (metric tons)	Mine output	Refinery products	Mine output, Sn content	Mine output, Metal, primary	W content (metric tons)	Mine output, Zn content	Mine output, W content (metric tons)	Mine output, Zn content	Metal ²	
Afghanistan ^e	--	--	--	--	--	--	--	--	--	--	--	--
Australia	2,860	--	212	110	6,000 ^e	--	15	1,515,000	--	513,000 ^e	--	--
Bangladesh ^e	--	--	--	--	--	--	--	--	--	--	--	--
Bhutan ^e	--	--	--	--	--	--	--	--	--	--	--	--
Brunei ³	--	--	--	--	--	--	--	--	--	--	--	--
Burma	234	--	(5)	--	11,000	30	140 ^e	7,000	--	--	--	--
Cambodia ^e	--	--	--	--	--	--	--	--	--	--	--	--
China ^e	2,800	1,500	90	175	120,000	156,000	61,800	4,050,000	5,210,000	--	--	--
Christmas Island	--	--	--	--	--	--	--	--	--	--	--	--
Fiji	--	--	--	--	--	--	--	--	--	--	--	--
Hong Kong ³	--	--	--	--	--	--	--	--	--	--	--	--
India ^e	1,020	--	--	--	--	--	--	710,000	795,000	--	--	--
Indonesia ^e	42	--	218 ⁴	20 ⁴	42,000 ⁴	43,000 ⁴	--	--	--	--	--	--
Japan	--	--	--	157 ^e	--	947	--	--	578,847	--	--	--
Korea, North ^e	--	--	--	--	--	--	100	70,000	75,000	--	--	--
Korea, Republic of	--	--	--	20 ^e	--	--	--	1,486	828,735	--	--	--
Laos	--	--	--	--	750	--	--	4,320	--	--	--	--
Malaysia	225	--	--	--	3,346	40,267	--	--	--	--	--	--
Mongolia	--	--	--	--	--	--	20	104,700	--	--	--	--
Nauru	--	--	--	--	--	--	--	--	--	--	--	--
Nepal ^e	--	--	--	--	--	--	--	--	--	--	--	--
New Caledonia	--	--	131	40	--	--	--	--	--	--	--	--
New Zealand	--	--	--	--	--	--	--	--	--	--	--	--
Pakistan ^e	--	--	--	--	--	--	--	15	--	--	--	--
Papua New Guinea ^e	--	--	--	--	--	--	--	--	--	--	--	--
Philippines	2	--	241	--	--	--	--	18,170	--	--	--	--
Singapore	--	--	--	--	--	--	--	--	--	--	--	--
Solomon Islands	--	--	--	--	--	--	--	--	--	--	--	--
Sri Lanka ^e	--	--	--	--	--	--	--	--	--	--	--	--
Taiwan	--	--	--	11 ^e	--	--	--	--	--	--	--	--
Thailand ^e	24	--	--	--	282	20,000	600	29,664 ⁴	68,203 ⁴	--	--	--
Vietnam ^e	28	--	--	--	5,400	3,000	--	38,000	--	--	--	--
Total	7,240	1,500	892	533	189,000	263,000	62,700	6,550,000	8,070,000	--	--	--
Share of world total	46%	81%	31%	38%	74%	83%	86%	53%	62%	--	--	--
United States	--	NA	--	--	--	--	--	769,000	248,000	--	--	--
World total	15,800	1,850	2,910	1,410	256,000	319,000	72,500	12,300,000	12,900,000	--	--	--

See footnotes at end of table.

TABLE 4—Continued
ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2011¹

(Thousand metric tons unless otherwise specified)

Country	Industrial minerals							Mineral fuels			
	Cement, hydraulic	Fluorspar (metric tons)	Graphite (metric tons)	Magnesite	Salt	Coal		Natural gas, dry, marketed/ marketable (million cubic meters)	Petroleum, crude (thousand 42-gallon barrels)		
						Anthracite	Bituminous				
Afghanistan ^e	38	--	--	--	190	--	--	750	142	(5)	
Australia	8,600 ^e	--	--	300 ^e	11,744	--	--	468,000	51,253	143,456	
Bangladesh ^e	5,000	--	--	--	1,410	--	--	700	20,100	1,800	
Bhutan ^e	200	--	--	--	--	--	--	80	--	--	
Brunei ³	275 ^e	--	--	--	--	--	--	--	12,300	59,400	
Burma	538 ^e	--	--	--	35 ^e	--	--	--	12,500 ^e	6,400 ^e	
Cambodia ^e	800	--	--	--	NA	--	--	--	--	--	
China ^e	2,099,000 ⁴	4,200,000	800,000	14,500	67,420 ⁴	450,000	2,800,000	90,000	90,000	1,480,000	
Christmas Island	--	--	--	--	--	--	--	--	--	--	
Fiji	120 ^e	--	--	--	--	--	--	--	--	--	
Hong Kong ³	--	--	--	--	--	--	--	--	--	--	
India ^e	270,000	13,300	150,000	350	16,000	--	500,000	33,000	33,000	265,000	
Indonesia ^e	29,000	--	--	--	650	110	150,000	76,000	76,000	340,000	
Japan	51,291	--	--	--	978	--	900 ^e	3,500 ^e	3,500 ^e	5,235	
Korea, North ^e	6,400	12,500	30,000	150,000	500	41,000	--	--	--	--	
Korea, Republic of	48,300	--	--	--	372	2,500 ^e	--	--	--	--	
Laos	400 ^e	--	--	--	35	--	--	--	--	--	
Malaysia	20,000 ^e	--	--	--	--	--	2,916	61,400	61,400	221,000 ^e	
Mongolia	426	461,000	--	--	2	--	30,940	--	--	2,549	
Nauru	--	--	--	--	--	--	--	--	--	--	
Nepal ^e	300	--	--	--	--	--	16	--	--	--	
New Caledonia	138 ^e	--	--	--	--	--	--	--	--	--	
New Zealand	1,200 ^e	--	--	--	95 ^e	--	4,944	4,003	4,003	16,591	
Pakistan ^e	32,000	1,600	--	7	2,200	--	3,600	41,000	41,000	70,000	
Papua New Guinea ^e	--	--	--	--	--	--	--	100	100	12,500	
Philippines	16,063	--	--	--	720	--	6,881	3,975	3,975	2,326	
Singapore	--	--	--	--	--	--	--	--	--	--	
Solomon Islands	--	--	--	--	--	--	--	--	--	--	
Sri Lanka ^e	2,200	--	3,500	--	11	--	--	--	--	--	
Taiwan ^e	16,852 ⁴	--	--	--	--	--	--	330	330	71 ⁴	
Thailand ^e	36,700 ⁴	2,000	--	--	1,300	--	--	29,100 ⁶	29,100 ⁶	51,000	
Vietnam	58,994	4,000 ^e	2,000 ^e	--	929 ^e	44,494	--	8,480 ⁶	8,480 ⁶	111,315	
Total	2,700,000	4,690,000	986,000	165,000	105,000	538,000	3,970,000	447,000	447,000	2,790,000	
Share of world total	67%	66%	87%	97%	38%	93%	67%	13%	13%	10%	
United States	68,600	--	--	W	45,000	2,030	918,000	681,000	681,000	2,060,000	
World total	4,040,000	7,140,000	1,130,000	171,000	274,000	577,000	5,880,000	3,410,000	3,410,000	27,600,000	

See footnotes at end of table.

TABLE 4—Continued
 ASIA AND THE PACIFIC: PRODUCTION OF SELECTED COMMODITIES IN 2011¹

⁶Estimated; estimated data, U.S. data, and world totals are rounded to no more than three significant digits. NA Not available. W Withheld to avoid disclosing company proprietary data; not included in world total. -- Zero or zero percent.

¹Totals may not add because of independent rounding. Percentages are calculated on unrounded data. Table includes data available as of January 31, 2013.

²Primary and secondary production.

³Not included in Minerals Yearbook 2011, volume III.

⁴Reported figure.

⁵Less than ½ unit.

⁶Natural gas, gross production.

TABLE 5
ASIA AND THE PACIFIC: HISTORIC AND PROJECTED BAUXITE MINE PRODUCTION, 2005–2018¹

(Thousand metric tons, gross weight)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	59,960	68,414	69,976	80,000	85,000	91,000
China	22,000	44,000	45,000	46,000	47,000	48,000
India	12,385	9,900	10,300	13,000	15,000	17,000
Indonesia	1,442	1,050	1,100	6,000	8,000	10,000
Malaysia	5	124	188	150	150	150
Other	--	112	110	1,500	3,500	3,800
Total	95,800	124,000	127,000	150,000	160,000	170,000

^eEstimated. -- Negligible or no production.

¹Estimated 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, 2005–2018¹

(Thousand metric tons)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	2,030	2,060	2,075	2,000	2,050	2,100
China	9,740	20,200	22,200	23,000	25,000	27,000
India	942	1,607	1,667	1,800	1,900	2,000
Indonesia	252	253	244	270	280	290
Japan	1,039	126	146	180	200	220
New Zealand	373	380	376	380	380	380
Other	--	--	--	--	--	--
Total	14,400	24,600	26,700	28,000	31,000	33,000

^eEstimated. -- Negligible or no production.

¹Estimated 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, 2005–2018¹

(Metal content in thousand metric tons)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	930	870	958	1,100	1,200	1,250
China	762	1,160	1,270	1,300	1,400	1,450
India	27	36	38	43	46	48
Indonesia	1,064	878	543	600	800	1,000
Mongolia	127	125	122	550	750	740
Papua New Guinea	193	160	130	80	180	230
Philippines	16	58	64	65	70	100
Other	--	--	198	--	140	240
Total	3,190	3,350	3,320	3,800	4,600	5,100

^eEstimated. -- Negligible or no production.

¹Estimated 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 PRODUCTION, 2005–2018¹

(Thousand metric tons)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	461	417	477	500	500	500
China	2,600	4,650	3,390	5,300	5,600	5,800
India	497	664	673	700	720	740
Indonesia	263	278	257	370	380	380
Japan	1,395	1,549	1,328	1,500	1,600	1,600
Korea, Republic of	519	565	595	600	550	600
Other	--	266	270	290	310	--
Total	6,010	8,390	8,800	9,300	9,700	10,000

^eEstimated. -- Negligible or no production.

¹Estimated 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, 2005–2018¹

(Metal content in kilograms)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	263,000	261,000	260,000	280,000	300,000	320,000
China	225,000	345,000	362,000	400,000	420,000	430,000
Indonesia	130,620	106,316	96,100	115,000	120,000	125,000
Japan	8,300	8,544	8,691	8,300	8,100	8,000
Laos	6,232	5,061	3,984	7,000	8,000	8,000
Mongolia	24,120	6,037	5,703	17,000	27,000	27,000
New Zealand	10,583	13,494	14,324	12,000	12,000	12,000
Papua New Guinea	68,483	62,900	62,200	54,000	61,000	122,000
Philippines	37,490	40,847	31,120	34,000	35,000	35,000
Other	19,000	18,300	16,300	20,000	22,000	26,000
Total	793,000	867,000	860,000	948,000	1,010,000	1,110,000

^eEstimated.

¹Estimated 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, 2005–2018¹

(Metal content in thousand metric tons)

Country	Average ore grade	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
	(% Fe)						
Australia	62	163,000	271,000	277,000	330,000	350,000	370,000
China	64	134,000	350,000	400,000	410,000	420,000	430,000
India	64	97,500	147,000	154,000	170,000	172,000	174,000
Korea, North	NA	1,400	1,500	1,500	1,500	1,500	1,500
Other		1,650	3,350	5,490	5,100	5,800	6,600
Total		398,000	773,000	838,000	920,000	950,000	980,000

^eEstimated. NA Not available.

¹Estimated 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, 2005–2018¹

(Thousand metric tons)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	7,790	7,408	6,538	7,000	7,000	7,000
China	353,240	637,230	685,280	740,000	750,000	780,000
India	45,800	68,300	72,200	78,000	80,000	82,000
Japan	112,470	110,000	108,000	114,000	117,000	120,000
Korea, Republic of	47,820	58,914	68,519	65,000	65,000	65,000
Malaysia	5,296	5,693	5,941	6,500	7,000	7,000
Taiwan	18,567	20,498	22,879	23,000	23,000	23,000
Thailand	5,161	4,145	4,000	4,000	4,000	5,000
Other	7,800	12,400	12,900	18,000	21,000	22,000
Total	604,000	925,000	984,000	1,060,000	1,070,000	1,110,000

^eEstimated.

¹Estimated 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 PALLADIUM MINE PRODUCTION, 2005–2018¹

(Metal content in kilograms)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	550	650	600	650	700	700
China	450	650	650	650	700	700
Total	1,000	1,300	1,250	1,300	1,400	1,400

^eEstimated.

¹Estimated 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 PLATINUM MINE PRODUCTION, 2005–2018¹

(Metal content in kilograms)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	111	130	130	200	200	200
China	700	750	750	1,000	1,000	1,000
Total	811	880	880	1,200	1,200	1,200

^eEstimated.

¹Estimated 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 TIN MINE PRODUCTION, 2005–2018¹

(Metric tons)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	2,819	6,600	6,000	6,000	6,000	6,000
China	126,000	115,000	120,000	120,000	110,000	110,000
Indonesia	78,404	43,258	42,000	44,000	42,000	40,000
Malaysia	2,857	2,668	3,346	2,500	2,500	2,500
Thailand	158	291	282	300	300	300
Vietnam	5,400	5,400	5,400	5,400	5,400	5,400
Other	1,540	4,440	11,800	12,000	13,000	13,000
Total	217,000	178,000	189,000	190,000	180,000	180,000

¹Estimated.

^eEstimated 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 TIN METAL PRODUCTION, 2005–2018¹

(Metric tons)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	994	400	400	2,000	2,000	2,000
China	122,000	149,000	156,000	165,000	170,000	180,000
Indonesia	65,300	43,832	43,000	45,000	43,000	41,000
Japan	754	841	947	960	970	980
Malaysia	36,924	38,737	40,267	40,000	40,000	40,000
Thailand	31,600	20,000	20,000	20,000	23,500	30,000
Other	1,800	3,100	3,000	3,000	3,500	3,500
Total	259,000	255,000	264,000	280,000	280,000	300,000

^eEstimated.

¹Estimated 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 DIAMOND PRODUCTION, 2005–2018¹

(Thousand carats)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	34,307	10,000	7,586	11,000	11,000	11,000
China	100	100	100	100	100	120
India	58	50	48	46	45	45
Indonesia	30	37	37	40	40	40
Total	34,500	10,200	7,770	11,000	11,000	11,000

^eEstimated.

¹Estimated 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 LITHIUM PRODUCTION, 2005–2018¹

(Metal content in metric tons)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	4,800	8,200	10,000	10,000	10,000	11,000
China	3,600	5,100	5,400	5,600	5,600	5,700
Total	8,400	13,300	15,400	16,000	16,000	17,000

^eEstimated.

¹Historic data, 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 SALABLE COAL PRODUCTION, 2005–2018¹

(Thousand metric tons)

Country	2005	2010	2011	2014 ^e	2016 ^e	2018 ^e
Australia	370,000	520,000	533,000	530,000	540,000	560,000
China	2,260,000	3,240,000	3,520,000	3,500,000	3,700,000	3,900,000
India	360,000	507,000	528,000	570,000	580,000	590,000
Indonesia	192,920	256,789	260,000	275,000	285,000	290,000
Japan	1,114	1,000	900	600	300	--
Korea, North	23,500	41,000	41,000	40,000	40,000	40,000
Korea, Republic of	2,832	2,500	2,500	2,600	2,700	2,800
Mongolia	8,256	25,246	30,940	40,000	40,000	40,000
New Zealand	5,267	5,330	4,944	6,000	6,000	6,000
Pakistan	3,367	3,429	3,600	3,900	4,100	4,200
Philippines	3,165	6,650	6,881	7,000	9,000	9,000
Thailand	21,429	17,907	18,000	25,000	25,000	25,000
Vietnam	34,093	44,835	44,494	50,000	50,000	50,000
Other	1,450	3,950	4,570	4,800	4,900	4,900
Total	3,290,000	4,650,000	5,000,000	5,100,000	5,300,000	5,500,000

^eEstimated. -- Negligible or no production.

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