



2015 Minerals Yearbook

CAMBODIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF CAMBODIA

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In 2015, Cambodia produced cement, gravel, laterite, sand, and stone mostly for domestic consumption. According to the Ministry of Mines and Energy, Cambodia has resources of bauxite, copper, gold, iron ore, kaolin, lead, limestone, ruby, sapphire, tin, and zinc; however, the potential and the extent of these mineral resources were unknown owing to the lack of geologic surveys. The country was also facing the challenges of not having an established regulatory and legislative framework to oversee the mining industry, nor the infrastructure to support it. During the past few years, the Government had granted a number of exploration permits for bauxite, iron ore, and precious minerals, but most projects were still in the exploration stage (table 1; Mining Insight, 2015; Open Development Cambodia, 2015).

In 2015, the nominal gross domestic product was \$18.05 billion compared with \$16.78 billion (revised) in 2014. Real growth was estimated to be 7.0% in 2015 compared with 7.1% in 2014. According to the Asian Development Bank, in 2015, the gross value added of the industrial sector (which included mining) increased by 11.7%; the output value of the construction industry (also within the industrial sector) increased by 19.2% (Open Development Cambodia, 2015; Asian Development Bank, 2016, p. xxi, 199; World Bank, The, 2016a, b).

In 2015, the country's total trade increased by 11.5% to \$20.3 billion¹ from \$18.2 billion in 2014. The country's exports increased by 12% to \$8.4 billion from \$7.5 billion in 2014. In 2015, the value of total imports increased by 10.2% to \$11.9 billion from \$10.8 billion in 2014. Imports of petroleum were valued at \$1 billion and represented 8.5% of the country's total import value. In 2015, the value of Cambodia's exports to the United States increased by 6.3% to \$3.03 billion from \$2.85 billion in 2014. Mineral commodities exported to the United States included diamond, gemstones, other industrial minerals, and iron and steel, which were valued at \$7.6 million and together accounted for less than 1% of total exports. The value of imports from the United States increased by 19.2% to \$391 million from \$328.1 million (revised) in 2014. Imports of aluminum and alumina, gem diamond, fertilizers, iron and steel products and other nonferrous metals, petroleum products, and precious metals (not including gold) from the United States were valued at \$6 million, which represented 1.5% of the total import value (National Bank of Cambodia, 2016, p. 7, 62; U.S. Census Bureau, 2016a, b).

Production

In 2015, the production of commodities in the industrial minerals sector of Cambodia was estimated to have been similar

in amount to that of 2014. Most of the commodities produced were consumed by the construction sector. The production of cement was estimated to be about 1.5 million metric tons (Mt) in 2015 (table 1).

Structure of the Mineral Industry

The mineral industry of Cambodia was not well developed, and minerals were not extracted at an industrial scale. Mining operations consisted mostly of small-scale quarries that produced industrial minerals for the construction sector and artisanal miners that ran small seasonal operations to extract gold and gemstones. Artisanal mining was done informally, and output levels were difficult to determine (Open Development Cambodia, 2015).

Kampot Cement Co. Ltd., which is located in Kampot Province, was Cambodia's only active cement plant. The plant was owned by Siam City Cement Co. of Thailand (90%) and Khaou Chuly Group (10%) and had a production capacity of about 2 million metric tons per year (Mt/yr) of cement (table 2). Kampot also had the capacity to produce about 1.5 Mt/yr of limestone.

Commodity Review

Metals

Copper, Gold, and Silver.—In June 2015, Angkor Gold Corp. of Canada and operator Mesco Gold (Cambodia) Ltd. (a subsidiary of Mesco Steel Ltd. of India) informed the Ministry of Mines and Energy (MME) that the Phum Syarung gold underground mine was on track to start up operations in 2016. The mine, which is located in Ratanakiri Province in the northeastern part of the country, would have an estimated initial capacity of 500 metric tons per day of ore with a recovery rate of about 85%. Drilling samples taken in 2012 yielded 16.67 grams per metric ton (g/t) gold; however, the annual production rate was yet to be determined. In December 2014, Angkor received approval from the MME to perform an environmental impact assessment of the Phum Syarung Mine. The mining permit for the project covers an area of 12 square kilometers (km²). Mesco expected to receive a mining license from the Cambodian Development Council and the Ministry of Environment upon completion of the environmental impact assessment, which would allow Mesco to start production (Angkor Gold Corp., 2014, 2015).

During 2015, Geopacific Resources Ltd. of Australia completed an exploration campaign at the Kou Sa copper-gold project that included 25,000 meters of drilling, soil sampling, geophysical analysis, and soil geochemistry analysis. From the study, the company was able to identify drilling targets to further define mineralization zones associated with known prospects. The company explored for potential copper-gold-

¹Where necessary, values have been converted from Cambodia riel (KHR) to U.S. dollars (US\$) at an average annual exchange rate of KHR4,068=US\$1.00 for 2015 and KHR4,040=US\$1.00 for 2014.

silver mineralization within Kou Sa, which was located in Phreah Vihear Province, Chep District, and consisted of an area measuring 158 km². The company planned to define the mineral resources in 2016, based on their main targets, which were called Prospect 150 and Prospect 160 (Geopacific Resources Ltd., 2015, p. 1–3).

In July 2015, Renaissance Minerals Ltd. of Australia announced Joint Ore Reserves Committee (JORC)-compliant resource estimates for its Okvau deposit within the Okvau gold project. The resources were estimated to be 15.8 Mt grading 2.2 g/t gold and containing 35,100 kilograms (kg) (reported as 1.13 million troy ounces) of gold. The resources were defined as indicated (13.2 Mt grading 2.3 g/t gold and containing 30,000 kg of gold) and inferred (2.7 Mt grading 2 g/t gold and containing 5,300 kg of gold). Also in July, the company completed a prefeasibility study for the development of the Okvau deposit through an open pit mining operation with a capacity to process 1.5 Mt/yr of ore. The company estimated a mine life of 8 years and an average production of 2,850 kilograms per year (reported as 91,500 troy ounces per year) of gold; however, a commissioning date had not been determined. The project is located in Mondulkiri Province approximately 265 kilometers northeast of Phnom Penh and covers an area of approximately 400 km². Renaissance held 100% interest in the Okvau exploration license through its 100%-owned subsidiary Renaissance Minerals (Cambodia) Ltd. Renaissance acquired the mineral rights and the exploration license for the Okvau project in 2012 (Renaissance Minerals Ltd., 2016).

Industrial Minerals

Cement.—In August, Siam Cement Group announced that the company expected to invest between \$200 million and \$300 million in the cement industry of Cambodia within the next 5 years. According to the company, its plans were based upon the increased demand for cement as the country invests in infrastructure projects, such as the construction of new commercial and residential projects in Phnom Penh. The company's investment would include the construction of the second production line at its Kampot cement plant in southern Cambodia, which was started in the third quarter of 2015, and the addition of a third production line thereafter. The company had previously expanded its cement production capacity in Cambodia by adding 900,000 metric tons per year of cement production for a total combined capacity of 2 Mt/yr of cement (Global Cement News, 2015; Siam Cement Public Co. Ltd., 2016).

References Cited

- Angkor Gold Corp., 2014, Next step forward for Cambodia's first commercial gold mine: Sexsmith, Alberta, Canada, Angkor Gold Corp. news release, December 3. (Accessed September 28, 2015, at <http://www.angkorgold.ca/next-step-forward-for-cambodias-first-commercial-gold-mine/>.)
- Angkor Gold Corp., 2015, Cambodia mine on track for 2015 start-up: Sexsmith, Alberta, Canada, Angkor Gold Corp. news release, June 15. (Accessed October 26, 2016, at <http://www.angkorgold.ca/cambodia-mine-on-track-for-2016-start-up/>.)
- Asian Development Bank, 2016, Asian development outlook 2016—Cambodia: Manila, Philippines, Asian Development Bank, 294 p. (Accessed October 4, 2016, at <https://www.adb.org/sites/default/files/publication/182221/ado2016.pdf>.)
- Geopacific Resources Ltd., 2015, Annual report 2015: Perth, Western Australia, Australia, Geopacific Resources Ltd., 68 p. (Accessed September 7, 2016, at http://geopacific.com.au/wp-content/uploads/2015/05/Geopacific_AR_2015_FINAL.pdf.)
- Global Cement News, 2015, Siam Cement to invest US\$200-300m in Cambodia to 2020: Global Cement News, August 24. (Accessed November 10, 2015, at <http://www.globalcement.com/news/item/4059-siam-cement-to-invest-us-200-300m-in-cambodia-to-2020>.)
- Mining Insight, 2015, Industry trend analysis, Cambodia, mining potential to remain in the ground: BMI Research, May. (Accessed October 26, 2016, at <http://www.mining-insight.com/industry-trend-analysis-cambodia-mining-potential-remain-ground-may-2015/>.)
- National Bank of Cambodia, 2016, Annual report 2015: Phnom Penh, Cambodia, National Bank of Cambodia, 62 p. (Accessed September 15, 2016, at http://www.nbc.org.kh/download_files/publication/annual_rep_eng/nbc-annual-report-eng-2015.pdf.)
- Open Development Cambodia, 2015, Mining—Cambodia: Open Development Cambodia, October 26. (Accessed October 26, 2016, at <https://opendevdevelopmentcambodia.net/topics/mining/>.)
- Renaissance Minerals Ltd., 2016, Okvau Cambodian gold project: Renaissance Minerals Ltd. (Accessed October 28, 2016, at <http://www.renaissanceminerals.com.au/cambodian-gold-project>.)
- Siam Cement Public Co. Ltd., 2016, Annual report 2015: Bangkok, Thailand, Siam Cement Public Co. Ltd., March 2, 263 p. (Accessed November 22, 2016, at <http://sec.listedcompany.com/misc/ar/20160302-sec-ar-2015-en.pdf>.)
- U.S. Census Bureau, 2016a, U.S. exports to Cambodia from 2006 to 2015 by 5-digit end-use code: U.S. Census Bureau. (Accessed October 27, 2016, at <https://www.census.gov/foreign-trade/statistics/product/enduse/exports/c5550.html>.)
- U.S. Census Bureau, 2016b, U.S. imports from Cambodia from 2006 to 2015 by 5-digit end-use code: U.S. Census Bureau. (Accessed October 27, 2016, at <https://www.census.gov/foreign-trade/statistics/product/enduse/imports/c5550.html>.)
- World Bank, The, 2016a, Cambodia, GDP current US\$—Data: The World Bank. (Accessed October 27, 2016, at <http://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=KH>.)
- World Bank, The, 2016b, Cambodia, growth annual %—Data: The World Bank. (Accessed October 27, 2016, at <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=KH>.)

TABLE 1
CAMBODIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons)

| Commodity ² | 2011 | 2012 | 2013 ^c | 2014 ^c | 2015 ^c |
|-----------------------------|-----------|------------------------|-------------------|-------------------|-------------------|
| Cement | 906,711 | 980,000 ^c | 1,060,000 | 1,400,000 | 1,500,000 |
| Gravel | 38,438 | 43,000 ^c | 45,000 | 50,000 | 50,000 |
| Laterite, blocks | 355,000 | 412,500 | 415,000 | 415,000 | 415,000 |
| Sand, construction material | 8,296,590 | 8,800,000 ^c | 8,800,000 | 9,000,000 | 9,000,000 |
| Stone, crushed | 5,223,345 | 5,850,000 ^c | 5,850,000 | 6,000,000 | 6,000,000 |

^cEstimated; estimated data are rounded to no more than three significant digits.

¹Table includes data available through October 25, 2016.

²In addition to the commodities listed, clay, gemstones, gold, granite, iron ore, limestone, marble, and salt were presumably produced, but available information was inadequate to make reliable estimates of output.

TABLE 2
CAMBODIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Thousand metric tons)

| Commodity | Main operating companies and main equity owners | Location of main facilities | Annual capacity ^c |
|-----------|--|---|------------------------------|
| Cement | Kampot Cement Co. Ltd. (Siam City Cement Co., 90%, and Khaou Chuly Group, 10%) | Phnom Tatung, Touk Meas District, Kampot Province | 2,000 |
| Limestone | do. | Tatung, Kampot Province | 1,500 |
| Do. | Thai Boon Roong Cement Co. Ltd. | Phnom Laang Laan Commune, Dongtung District, Kampot Province | NA |

^cEstimated. Do., do. Ditto. NA Not available.