



2011 Minerals Yearbook

SRI LANKA

THE MINERAL INDUSTRY OF SRI LANKA

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Sri Lanka has a variety of industrial minerals, which include ball clay, kaolin, and other clays; calcite; dolomite; feldspar; gemstones; graphite; limestone; mica; mineral sands; phosphate rock; quartz; and silica sand. The mineral industry produced cement, gemstones and jewelry, nonmetallic mineral products, and petroleum products. The country produced no metals or crude oil, and it imported petroleum for refining.

Sri Lanka's gross domestic product (GDP) was \$59 billion in 2011, and the country's per capita income was \$5,600 based on purchasing power parity. Following the end of the civil war in 2009, the country recorded strong GDP growth of 8.3% owing to reconstruction and infrastructure development. The industrial sector registered a growth of 9.6% and contributed 29.6% to the GDP. Mining and quarrying accounted for 2% of the GDP. Total exports increased by 31% in 2011, and gems and semiprecious stones were among the leading export mineral commodities. Total imports increased by 50%, and crude petroleum was a major import item (U.S. Central Intelligence Agency, 2011).

Production

In 2011, the value of Sri Lanka's gemstone production was estimated to have increased by 20% compared with the value in 2010 owing to the high prices of gemstones on the world market; the output of ruby and sapphire increased by 11.7% and 7.3%, respectively. Cement production and production of clays that were used to manufacture cement were estimated to have increased by 10% each. Feldspar production and kaolin production were estimated to have decreased by 7.2% and 2.5%, respectively. Based on the country's export data, production of rutile (a titanium mineral) decreased by 5.1%, and that of ilmenite increased by 1.2%. Production of zircon fluctuated during the past 5 years (table 1).

Structure of the Mineral Industry

The development of mineral resources is the responsibility of the Geological Survey and Mines Bureau and is governed by the Mines and Minerals Act No. 33 of 1992 and the Mining (Licensing) Regulations No. 1 of 1993. The mining of graphite, mineral sands, phosphate rock, and salt was performed by state-owned companies. A crude oil refinery was operated by state-owned Ceylon Petroleum Corp. The Government had no plans to privatize any state-owned enterprises but planned instead to retain ownership and management of these enterprises and to make them profitable. The private sector produced all other mineral output, with the exception of cement, which was manufactured and sold mostly by the private sector and foreign investors and by state-owned Sri Lanka Cement Corp. A German company owned an 87% stake in Bogala Graphite Lanka Ltd., and the Government owned the remaining 13% (table 2).

Commodity Review

Metals

Iron and Steel.—Ceylon Steel Corp. planned to commission its new steel bar mill at a cost of \$80 million. The 3-year expansion project was completed at Oruwela, south of Colombo, during 2011. The mill's production capacity was expanded to 250,000 metric tons per year (t/yr) from 100,000 t/yr, and the mill was equipped with an online capability to conduct troubleshooting from its supplier Danieli Group of Italy. The plant used the quenching and self-tempering bar process to produce high-strength corrosion-resistant steel. The company also planned to diversify its product range from bars to galvanized wire, pipes, nails, and other steel products.

Premier Steel Mills (Pvt.) Ltd. and its subsidiaries operated steel mills and produced and marketed specialty and regular steel products to domestic customers. The company also exported and imported scrap metal in a global operation (Kovilagodage, 2011).

Titanium.—The black mineral sands of Pulmoddai beach, which is located 52 kilometers north of Trincomalee, have heavy mineral concentrates of 50% to 60% and were considered to be some of the world's richest mineral sand deposits. The resource of heavy minerals at Pulmoddai beach was estimated to be 12.5 million metric tons containing 65% ilmenite, 10% rutile, 10% zircon, and minor amounts of garnet and monazite.

Lanka Mineral Sands Corp.'s plant at Pulmoddai resumed production after being shut down owing to the conflict between the Government and the Tamil Tigers rebel group. The plant employed 600 workers and had the capacity to produce 90,000 t/yr of ilmenite, 9,000 t/yr of rutile, and 5,500 t/yr of zircon. Lanka Mineral Sands exported 93,500 metric tons (t) of mineral sands in 2010 (the latest year for which data were available), of which 64% went to China, 29% to India, and 7% to the United Arab Emirates (UAE). The company exported 20,000 t/yr of ilmenite (Gunasekera, 2011).

Lanka Mineral Sands was in the process of expanding its mineral sand operation. The proposed expansion would cover newly discovered deposits that extend from Pulmoddai north to Mullaitivu. Using a 10% cutoff grade, the company intended to mine these deposits and the immediate inland areas where mineral concentration was 10%. The Government planned to invest \$500 million for a new plant and machinery, including new front-end loaders. The initial plan called for ilmenite production of between 100,000 and 125,000 t/yr. Lanka Mineral Sands had also expressed interest in entering into a joint venture with an international partner to make value-added products, such as titanium dioxide and synthetic rutile (Gunasekera, 2011).

Industrial Minerals

Cement.—Sri Lanka, which faced a potential cement shortage owing to increased demand, imported cement from Indonesia, Malaysia, and Pakistan. In August, however, more than 5,000 t of imported cement was stuck in local ports owing to a lack of certificates from the Sri Lanka Standards Institute. Much of the cement from Pakistan was thought not to meet quality standards. Later, tests by independent foreign laboratories found that the imports did meet Sri Lanka's quality standards, and the ban placed on the imported cement from Pakistan was lifted (India Cement and Construction Materials Magazine, 2011b).

Sri Lanka's cement industry continued to draw investment from abroad. Holcim Ltd. of Switzerland planned to expand the grinding capacity of its cement plants and to construct a new cement plant of undetermined production capacity. Holcim (Lanka) Ltd., which was a subsidiary of Holcim, operated a 1-million-metric-ton-per-year (Mt/yr)-capacity integrated cement plant at Puttalam and a grinding plant at Galle. The company planned to build a new packing plant at Trincomalee. The company's cement terminal at Galle received imported cement. The company also produced special cement for large-scale infrastructure projects. It sold cement and services in nine regions of the country and provided approximately 15,000 direct and indirect employment opportunities [Holcim (Lanka) Ltd., 2011].

The Government decided to reactivate the Kankesanthurai cement plant after the region was determined to have substantial limestone deposits sufficient for 100 years at a production rate of 3,500 metric tons per day. The country was in a construction boom, and the Government planned to import between 10,000 and 15,000 metric tons per month of cement from Bharathi Cement of India to meet Sri Lanka's growing demand (India Cement and Construction Materials Magazine, 2011a).

Gemstones.—Sri Lanka's gemstone deposits contain a wide range of gemstones and semiprecious stones. The majority of the deposits are secondary alluvial gravels, and the dominant gem mineral is corundum in the form of geuda, rubies, and sapphires. The Highland Complex of Sri Lanka, which is a high-grade metamorphic terrain, is one of the most prominent gem-bearing terrains in the world. The gemstone deposits are mostly of Quaternary sedimentary type and are abundant in the granulitic terrains of the southwest and southeast, such as the Ratnapura District. Highly differentiated granites and pegmatites contain monazite, rutile, and zircon. State Gem Corp. mined the topaz deposits at Polwatta in central Sri Lanka (Gem Net Sri Lanka, 2011).

Graphite.—Sri Lanka's production of graphite was steady at about 3,500 t in 2011. The country's two major producers were Bogala Graphite Lanka plc and Kahatagaha Graphite Lanka Ltd., which had a combined production capacity of 11,000 t/yr. The lump graphite was of vein type. A small amount of graphite was used domestically, but the majority of the output was exported (Moores, 2011).

The Kahatagaha Mines are located at Maduragoda in Sri Lanka's Northwestern Province and managed by state-owned Kahatagaha Graphite Lanka Ltd. Nearly 95% of the run-of-mine ore was graphite that was more than 90% carbon and had a low

ash content. The high-grade graphite was mined from the active level at 610 meters (m) below the surface. The deposit was a vein-type graphite occurrence in crystal form. The graphite products were exported to Australia, India, Japan, the Republic of Korea, Pakistan, and the United States. Sri Lanka was estimated to have graphite reserves of 180,000 t (Kahatagaha Graphite Lanka Ltd., 2011).

Phosphate Rock.—Sri Lanka sought a \$60 million credit line from the Government of Japan to expand the production capacity of Lanka Phosphate Ltd.'s Eppawala plant. The plant produced 46,000 t/yr of phosphate rock, which was used for the manufacture of diammonium phosphate. The proposed credit line would help bring in new machinery and upgrade the technology of the plant. The company planned to produce a single superphosphate (News 360 Publishers Pvt. Ltd., 2011).

The Ministry of State Resources and Enterprise Development invited bids for the design, supply, delivery, installation, commissioning, and handing over of a new grinding mill for phosphate rock to Lanka Phosphate's Eppawala plant. Bids were due by September 9, 2011. The new grinding mill would help increase the company's output of phosphate rock (Ministry of State Resources and Enterprise Development, 2011).

Mineral Fuels

Natural Gas.—Cairn Lanka Ltd., which was a subsidiary of Cairn India Ltd., made a gas discovery in a well on one block in the Mannar Basin in Sri Lanka. The well encountered a 25-m hydrocarbon column in sandstone at a depth of between 3,044 and 3,069 m. The hydrocarbons were predominantly gas bearing with some additional liquid potential. Additional drilling was required to determine if the discovery was commercial. The company was the owner and operator of Block SL 2007-01-001. Two other blocks were under exploration (Rigzone.com, 2011).

Petroleum.—The Mannar Basin, which was parceled out into eight blocks, was believed to hold more than 1 billion barrels of oil. The five blocks not under license to Cairn Lanka were expected to be the focus of a new international licensing round in Sri Lanka. The country spent \$2 billion per year for petroleum imports and was considering options to import 1 Mt/yr of liquefied natural gas (Petroleum Economist, 2011).

Outlook

Sri Lanka is expected to expand its output of downstream steel products to meet its domestic demand, particularly that of the construction industry. Production of excess capacity that is not used locally would be exported to Bhutan, the Dubai Emirate of the UAE, and the Maldives. Production of mineral sands is expected to increase as a result of Lanka Mineral Sands's purchase of new mining equipment and Government investment in a new plant. A discovery of natural gas in the Mannar Basin is expected to encourage the Government to initiate a new international licensing round in oil and gas exploration.

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TABLE 1
SRI LANKA: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Metric tons unless otherwise specified)

Commodity ³	2007	2008	2009	2010	2011
Cement, hydraulic thousand metric tons	1,700	1,800	1,900	2,000	2,200
Clays:					
Ball clay	43,004 ⁴	52,966 ⁴	54,873 ⁴	47,826 ⁴	50,000
Kaolin	11,178 ⁴	10,039 ⁴	9,538 ⁴	8,207 ⁴	8,000
Brick and tile clay	8,000	8,000	8,000	8,000	8,000
Clays for cement manufacture	950	950	950	1,000	1,100
Feldspar, crude and ground	28,866 ⁴	32,586 ⁴	73,365 ⁴	75,405 ⁴	70,000
Gemstones:					
Precious and semiprecious, other than diamond, value thousands	\$105,000	\$108,000	\$110,000	\$150,000	\$180,000
Cat's eye carats	49,000	50,000	51,000	54,000	55,000
Ruby do.	31,700 ⁴	47,900 ⁴	20,300 ⁴	31,336 ⁴	35,000
Sapphire do.	240,000 ⁴	541,900 ⁴	986,500 ⁴	1,491,698 ⁴	1,600,000
Other do.	2,200,000	2,300,000	2,400,000	2,500,000	2,400,000
Graphite, all grades	9,593 ⁴	6,615 ⁴	3,171 ⁴	3,437 ⁴	3,500
Iron and steel, metal, semimanufactures	77,905 ⁴	66,809 ⁴	72,000	75,000	76,000
Mica, scrap	3,224 ⁴	2,364 ⁴	2,347 ⁴	2,095 ⁴	2,100
Petroleum refinery products:					
Gasoline thousand 42-gallon barrels	2,300	2,300	2,400	2,600	2,700
Jet fuel do.	700	750	750	800	800
Kerosene do.	1,500	1,500	1,500	1,500	1,500
Distillate fuel oil do.	5,400	5,500	5,600	5,700	5,800
Residual fuel oil do.	5,000	4,800	4,800	4,500	4,600
Refinery fuel and losses do.	730	740	750	760	800
Other do.	2,400	2,500	2,600	2,700	2,800
Total do.	18,000	18,100	18,400	18,600	19,000
Phosphate rock, gross weight	40,128 ⁴	41,947 ⁴	36,347 ⁴	47,778 ⁴	48,000
Salt	70,209 ⁴	110,856 ⁴	10,500	10,400	11,000
Stone:					
Limestone thousand metric tons	1,095 ⁴	1,091 ⁴	1,145 ⁴	1,192 ⁴	1,200
Quartzite	35,066 ⁴	37,196 ⁴	30,409 ⁴	34,437 ⁴	36,000
Titanium mineral concentrates, gross weight:					
Ilmenite	70,728 ⁴	22,159 ⁴	122,424 ⁴	52,637 ⁴	52,000
Rutile	4,607 ⁴	11,335 ⁴	2,276 ⁴	2,568 ⁴	2,700
Zirconium, zircon, gross weight	11,000	41,000	9,000	11,000	30,000

do. Ditto.

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

²Table includes data available through July 16, 2012.

³In addition to the commodities listed, crude construction materials, such as calcite, dolomite, sand and gravel, sulfur, and varieties of stone presumably are produced, but available information is inadequate to make reliable estimates of output.

⁴Reported figure.

TABLE 2
SRI LANKA: STRUCTURE OF THE MINERAL INDUSTRY IN 2011

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity ^c
Cement	Holcim (Lanka) Ltd.	Puttalam	1,000
Do.	Sri Lanka Cement Corp. (Ministry of Industry and Commerce)	Kankesanthurai	1,000
Do.	do.	Puttalam	400
Do.	Tokyo Cement Co. (Lanka) Ltd.	Trincomalee	300
Clay, ball	Lanka Ceramic Ltd.	Dediyawala	NA
Graphite	Kahatagaha Graphite Lanka Ltd. (Ministry of Industry and Commerce)	Kahatagaha Mine	4
Do.	Bogala Graphite Lanka Ltd. (Graphit Kropfmühl AG, 87%, and Ministry of Industry and Commerce, 13%)	Bogala Mine	7
Petroleum, refined	42-gallon barrels per day Ceylon Petroleum Corp. (Ministry of Petroleum and Petroleum Resources Development)	Sapugaskanda	51,000
Phosphate rock	Lanka Phosphate Ltd. (Ministry of Industry and Commerce)	Eppawala	40
Titanium, ilmenite sands	Lanka Mineral Sands Ltd. (Ministry of State Resources and Enterprise Development)	Pulmoddai	150

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