



2007 Minerals Yearbook

BHUTAN AND NEPAL [ADVANCE RELEASE]

THE MINERAL INDUSTRIES OF BHUTAN AND NEPAL

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BHUTAN

Bhutan's economy was dominated by the agriculture, forestry, and hydroelectric power generation industries. The mineral sector of Bhutan was small and insignificant to the country's economy. The mineral industry was characterized by the production of cement, coal, dolomite, ferrosilicon, graphite, and limestone. The exploitation of Bhutan's large hydropower resources has enabled the startup of a number of small local cement operations.

Production

Production of industrial minerals dominated Bhutan's mineral industry. Dolomite was mined by Jigme Mining Corp. Ltd. at Gomtu. A graphite processing plant operated at Paro Dzong. In addition, marble and slate were quarried for use as dimension stone. The output level of these mineral commodities remained steady in 2007 (table 1). Dolomite, ferrosilicon, and gypsum were exported mainly to India. Deposits of beryl, copper, lead, mica, pyrite, tin, tungsten, and zinc were reported to have been found in Bhutan.

Structure of the Mineral Industry

The Geological Survey of Bhutan is responsible for geologic mapping, mineral exploration, and geotechnical investigations in the country. The Mining Division is responsible for the inspection and regulation of various mines to ensure that the mining practices are environmentally friendly. Both are under the Department of Geology and Mines. The Department of Energy is responsible for the country's hydropower development. Both departments are under the Ministry of Economic Affairs (Ministry of Economic Affairs, 2007). Production of ferrosilicon was by a joint venture of the Government, Marubeni Corp. of Japan, and local Tashi Commercial Corp. (table 2).

Commodity Review

India imported an average of 30,000 metric tons per year (t/yr) of ferrosilicon, which was exempted from Bhutan's customs duty, and the demand for ferrosilicon in steel production was increasing in the Indian market. Bhutan Ferro Alloys Ltd., which had a production capacity of 34,000 t/yr of ferrosilicon, increased its ferrosilicon output by installing a new furnace. The company also planned to construct the following four new plants: Bhutan Ferro Industries Ltd., which would have a capacity of 14,000 t/yr; Druk Ferro Alloys Ltd., which would have a capacity of 13,200 t/yr; Druk Wang Alloys Ltd., which would have a capacity of 12,000 t/yr; and Ugen Ferro Alloys Ltd., the capacity of which was as yet undetermined. All were expected to begin their trial runs in June 2008. The

four new plants would more than double the company's current capacity (Bhutan Times, The, 2008).

References Cited

- Bhutan Times, The, 2008, Ferrosilicon industries are optimistic about the future: The Bhutan Times. (Accessed June 11, 2008, at http://www.bhutantimes.bt/index.php?option=com_content&task=view&id=637.)
Ministry of Economic Affairs, 2007, Home page: Ministry of Economic Affairs. (Accessed June 17, 2008, at <http://www.moea.gov.bt>.)

NEPAL

Nepal's economy was dominated by agricultural production, manufacturing, and tourism. Agriculture employed more than 70% of the population and contributed 38% of the gross domestic product (GDP). Mining and quarrying contributed less than 1% of the GDP. The country possesses small deposits of cobalt, copper, iron ore, lead, limestone, magnesite, mica, and zinc. A lead and zinc deposit is located near Lari in the Ganesh Himal region. Nepal's mineral resources were mostly unexploited.

Production

Mining and quarrying produced red clay, coal, limestone, and marble. The processing industry produced cement and rolled steel (production of dead-burned magnesia ceased in 2006). Some mineral commodities that had previously been produced were no longer produced or were produced only intermittently owing to exhausted reserves; these included lignite, lime, craggy marble, salt, and tourmaline. The output of limestone and marble chips increased by 104% and 148%, respectively, in 2007 owing to strong domestic demand (table 1).

Structure of the Mineral Industry

The Department of Mines and Geology under the Ministry of Industry, Commerce, and Supplies is responsible for conducting geoscientific research, carrying out exploration, evaluating mineral and energy resources, and promoting mineral-based industries. One state-owned company and several private-sector companies controlled the country's cement operations (table 2).

Commodity Review

Owing to the lack of Government policies, an uncertain investment climate, and lack of planning in the mining, processing, producing, and trading of gems, Nepal's potential to develop a lucrative gem-producing industry was uncertain. Jasper, nephrite, and tugtupite were extensively found in most of the rivers from the Dang River to the Bardia River west of Dolalghat. An opal deposit was found at Bhotechaur in Sindhupalanchowk District. The Government had yet to

establish appropriate rules and regulations with respect to the licensing of gem miners; the importation of technology, equipment, and machinery; and gem market management. In 2007, Nepal produced quartz crystal and tourmaline (eKantipur.com, 2007).

Nepal's swift rivers, which flow south through the Himalayas, provide massive hydroelectric potential to service domestic power needs and growing demand from India. Three hydroelectric projects were planned—the 600-megawatt (MW) Budhi Gandaki project, the 402-MW Arun III project, and

the 300-MW Upper Karnali project. The Government sought proposals to develop these projects from 14 foreign countries (U.S. Department of State, 2007).

References Cited

eKantipur.com, 2007, Capitalize on gem mining potential: eKantipur.com.

(Accessed July 5, 2007, at <http://www.kantipuronline.com/kolnews.php?&nid=81187>.)

U.S. Department of State, 2007, Nepal, Background note: U.S. Department of State, November, p. 10.

TABLE 1
BHUTAN AND NEPAL: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Country and commodity ²	2003	2004	2005	2006 ^c	2007 ^c
BHUTAN					
Cement ^c	160,000	170,000	170,000	180,000	180,000
Coal, bituminous	66,324	29,631	85,279	82,000	80,000
Dolomite	367,402	452,336	388,711	410,000	440,000
Ferrosilicon ^c	21,000	21,147 ³	20,000	20,000	21,000
Granite	1,076	200	877	900	1,000
Gypsum	122,829	131,236	150,585	160,000	165,000
Iron ore, gross weight	--	--	5,679	5,300	5,100
Limestone	551,525	560,807	536,030	550,000	560,000
Marble	579	314	372	480	500
Quartzite	52,058	42,599	52,694	50,000	51,000
Shale, green and pink	--	--	363	450	480
Slate	5,386	11,779	270	560	600
Stone	316,068	246,508	146,767	120,000	100,000
Talc	23,101	39,797	42,791	45,000	47,000
NEPAL					
Cement ^c	295,000	285,000	290,000	295,000	300,000
Clay, red	32,966	29,234	35,484	34,000	35,000
Coal:					
Bituminous	11,848	10,459	9,259	11,963 ³	16,274 ³
Lignite	--	58	30	--	98 ³
Total	11,848	10,517	9,289	11,963 ³	16,372 ³
Gemstones:					
Quartz	1,765	1,215	1,092	1,100	1,110
Tourmaline	--	--	7	7	5
Total	1,765	1,215	1,099	1,107 ³	1,115 ³
Lime, agricultural	13,025	--	--	--	--
Magnesia, dead-burned	--	50	56	--	--
Salt	5	4	2	--	2
Steel, rolled ^c	100,000	95,000	90,000	90,000	85,000
Stone:					
Limestone	269,379	388,109	263,701	402,130 ³	822,042 ³
Marble:					
Chips	395	481	436	384 ³	954 ³
Slab, cut	46,197	56,014	23,850	28,110 ³	22,110 ³
Craggy	681	728	--	--	--
Quartzite ^c	2,900	2,900	3,000	3,000	3,100
Talc	6,905	3,435	5,832	6,648 ³	9,043 ³

^cEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ¹Revised. do. Ditto. -- Zero.

¹Table includes data available through August 6, 2008.

²In addition to the commodities listed, crude construction materials, such as sand and gravel and a variety of stone, presumably are produced in Bhutan and Nepal, but information is inadequate to make reliable estimates of output.

³Reported figure.

TABLE 2
BHUTAN AND NEPAL: STRUCTURE OF THE MINERAL INDUSTRY IN 2007

(Thousand metric tons unless otherwise specified)

Country and commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity ^e
BHUTAN			
Cement	Penden Cement Authority Ltd.	Gomtu, Samtse District	100
Dolomite	Jigme Mining Corp. Ltd.	do.	900
Ferrosilicon	Bhutan Ferro Alloys Ltd.	Phuentsholing	34
NEPAL			
Cement	Hetauda Cement Industries Ltd.	Makawanpur	260
Do.	Himal Cement Co. Ltd.	Chobhar	130
Lead and zinc	Nepal Metal Co. Ltd.	Lari	NA
Magnesite	metric tons	Nepal Orind Magnesite Ltd.	50
Marble	Godavari Marble Industries Ltd.	Latitpur	NA

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