

# THE MINERAL INDUSTRIES OF BHUTAN AND NEPAL

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## BHUTAN

Bhutan is a landlocked, mountainous country with an economy that is based on agriculture and forestry. Rugged terrain provides sites to harvest hydroelectric power. The country's 5-year economic plan (2002-07) placed a strong emphasis on infrastructure and energy development. In 2003, the rate of growth of the gross domestic product (GDP) was strong at 7.3%. The country remained one of the world's least developed with a per capita GDP at purchasing power parity of \$741. Bhutan had a small and limited mineral industry and produced cement, coal, dolomite, ferrosilicon, gypsum, and limestone. Of the mineral output, the country exported cement, ferrosilicon, and gypsum. The Ministry of Trade and Industry is responsible for regulating the production of most mineral commodities (U.S. Department of State, 2003<sup>1</sup>).

Bhutan Ferro Alloys was expected to decide on the long-delayed plan to expand the capacity of its ferrosilicon works in the eastern Himalayas by 8,000 metric tons per year (t/yr) to 9,000 t/yr through the installation of a new 12-megavoltampere furnace. The multipurpose furnace would be used to produce ferrosilicon and lesser amounts of silicon metal and value-added silicon-based alloys. The company had plans to import most of the equipment from international plant suppliers and to secure a portion of the facilities domestically. It also looked to expand into other markets outside of India (Metal Bulletin, 2003).

### Reference Cited

Metal Bulletin, 2003, Bhutan Ferro Alloys to decide on FeSi expansion next month: Metal Bulletin, no. 8818, December 1, p. 20.

### Internet Reference Cited

U.S. Department of State, 2003 (November), Bhutan, Background Note, accessed April 21, 2004, at URL <http://www.state.gov/r/pa/ei/bgn/26311.htm>.

### Major Source of Information

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<sup>1</sup>References that include a section mark (§) are found in the Internet Reference Cited sections.

## NEPAL

A ceasefire agreement in January 2003 between the Maoist rebels and the Government put Nepal back on the road to growth. The Government implemented a variety of reforms to generate jobs and stimulate investment. Reductions in agricultural production and the tourism industry brought down the rate of GDP growth to 2.3%. Agriculture contributed 38% of the GDP. The per capita GDP based on purchasing power parity was only \$230, and Nepal continued to be one of the world's poorest countries. Inflation was controlled at 3% in 2003. Remittances of \$90 million per year by Nepalese working in foreign countries helped the economy. Geologic surveys in Nepal found small deposits of cobalt, copper, iron, lead, limestone, magnesite, mica, and zinc. The most economically important mineral commodities produced were cement, clay, coal, limestone, magnesite, and marble (International Monetary Fund, 2003§).

Nepal launched its 10th economic development plan in 2002, and the Government began to prioritize development projects and to eliminate wasteful spending; 160 of the projects were eventually cut. A substantial amount of assistance from other countries and several multinational organizations was received. Rivers that flowed south through the Himalayas provided massive hydroelectric potential. Two privately financed hydroelectric projects were in operation—the Khimti, which had a capacity of 60 megawatts (MW), and the Bhoite Koshi, which had a capacity of 36 MW. The West Seti storage project, which had a capacity of 750 MW and was dedicated to electricity exports, was promoted by an Australian company that was negotiating a power purchase agreement with Indian Power Trading Corp. (U.S. Department of State, 2004).

### Reference Cited

U.S. Department of State, 2004, Nepal, Background Note: U.S. Department of State, January, p. 8.

### Internet Reference Cited

International Monetary Fund, 2003 (September), Nepal, World Economic Outlook Database, accessed May 19, 2004, via URL <http://www.imf.org/external/pubs/ft/weo/2003/02/data/index.htm>.

### Major Source of Information

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TABLE 1  
BHUTAN AND NEPAL: ESTIMATED PRODUCTION OF MINERAL COMMODITIES<sup>1,2</sup>

(Metric tons unless otherwise specified)

| Country and commodity <sup>3</sup> | 1999                 | 2000                 | 2001                 | 2002                 | 2003    |
|------------------------------------|----------------------|----------------------|----------------------|----------------------|---------|
| BHUTAN                             |                      |                      |                      |                      |         |
| Cement                             | 150,000              | 150,000              | 160,000              | 160,000              | 160,000 |
| Coal                               | 68,000               | 67,000               | 65,000               | 65,000               | 66,000  |
| Dolomite                           | 250,000              | 260,000              | 265,000              | 270,000              | 270,000 |
| Ferrosilicon                       | 18,000               | 15,000               | 16,000               | 21,000 <sup>r</sup>  | 21,000  |
| Gypsum                             | 54,000               | 54,000               | 55,000               | 55,000               | 56,000  |
| Limestone                          | 275,000              | 278,000              | 280,000              | 282,000              | 285,000 |
| Marble square meters               | 4,000                | 4,000                | 4,000                | 4,000                | 4,000   |
| Quartzite                          | 52,000               | 52,000               | 53,000               | 53,000               | 54,000  |
| Slate square meters                | 9,000                | 9,000                | 9,000                | 9,000                | 9,000   |
| Talc                               | 3,400                | 3,700                | 3,800                | 3,900                | 3,900   |
| NEPAL                              |                      |                      |                      |                      |         |
| Cement                             | 290,000              | 300,000              | 285,000              | 290,000              | 295,000 |
| Clay, red                          | 3,119 <sup>4</sup>   | 2,304 <sup>4</sup>   | 2,700                | 2,600                | 2,500   |
| Coal:                              |                      |                      |                      |                      |         |
| Bituminous                         | 10,954 <sup>4</sup>  | 17,530 <sup>4</sup>  | 16,589 <sup>4</sup>  | 9,612 <sup>4</sup>   | 9,700   |
| Lignite                            | 312 <sup>4</sup>     | 52 <sup>4</sup>      | -- <sup>4</sup>      | -- <sup>4</sup>      | --      |
| Total                              | 11,266 <sup>4</sup>  | 17,582 <sup>4</sup>  | 16,589 <sup>4</sup>  | 9,612 <sup>4</sup>   | 9,700   |
| Gemstones:                         |                      |                      |                      |                      |         |
| Quartz kilograms                   | 3,200 <sup>4</sup>   | 2,830 <sup>4</sup>   | 1,135 <sup>4</sup>   | 1,720 <sup>4</sup>   | 1,800   |
| Tourmaline do.                     | 11 <sup>4</sup>      | 1 <sup>4</sup>       | -- <sup>4</sup>      | -- <sup>4</sup>      | --      |
| Total do.                          | 3,211 <sup>4</sup>   | 2,831 <sup>4</sup>   | 1,135 <sup>4</sup>   | 1,720 <sup>4</sup>   | 1,800   |
| Lime, agricultural                 | 24,000               | 19,360 <sup>4</sup>  | 15,587 <sup>4</sup>  | 20,000               | 17,000  |
| Magnesia, dead-burned              | 26,000               | 1,640 <sup>4</sup>   | -- <sup>4</sup>      | -- <sup>4</sup>      | --      |
| Salt thousand tons                 | 1 <sup>4</sup>       | 2 <sup>4</sup>       | 5 <sup>4</sup>       | 5 <sup>4</sup>       | 5       |
| Steel, rolled                      | 130,000              | 120,000              | 110,000              | 100,000              | 100,000 |
| Stone:                             |                      |                      |                      |                      |         |
| Limestone                          | 401,700 <sup>4</sup> | 352,060 <sup>4</sup> | 287,810 <sup>4</sup> | 356,218 <sup>4</sup> | 360,000 |
| Marble:                            |                      |                      |                      |                      |         |
| Chips                              | 660 <sup>4</sup>     | 655 <sup>4</sup>     | 607 <sup>4</sup>     | 537 <sup>4</sup>     | 550     |
| Slab, cut square meters            | 704,750 <sup>4</sup> | 79,700 <sup>4</sup>  | 54,834 <sup>4</sup>  | 46,156 <sup>4</sup>  | 45,000  |
| Craggy do.                         | 2,092 <sup>4</sup>   | 1,530 <sup>4</sup>   | 1,333 <sup>4</sup>   | 2,279 <sup>4</sup>   | 2,000   |
| Quartzite                          | 2,700                | 2,800                | 2,800                | 2,800                | 2,900   |
| Talc                               | 6,157 <sup>4</sup>   | 5,852 <sup>4</sup>   | 3,923 <sup>4</sup>   | 2,621 <sup>4</sup>   | 2,500   |

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Includes data available through August 17, 2004.

<sup>2</sup>Estimated data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>In 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 levels.

<sup>4</sup>Reported figure.