

Zinc

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2001 mine production: \$1.42 billion
 World rank: Second (metal production)
 2001 exports: \$1.38 billion

| Canada | 2001 | 2002 (e) | 2003 (f) |
|------------------|---------|----------|----------|
| | (000 t) | | |
| Mine production | 1 052 | 900 | 770 |
| Metal production | 658 | 765 | 800 |
| Use | 181 | 190 | 200 |

(e) Estimated; (f) Forecast.

Zinc is used in the automotive and construction industries for the galvanization of steel and manufacture of die-cast alloys, in the production of brass, in semi-manufactures such as rolled zinc, and in chemical applications. Promising new applications for zinc are in the manufacture of zinc-air batteries and in galvanized steel studs as an alternative to wood in residential construction. Recycled zinc has become an increasingly important source of the metal in recent years. Recycled zinc includes high-purity refined zinc, remelted zinc of a purity less than 98.5% zinc, and zinc scrap used in the production of zinc alloys. Canada currently produces only a minor amount of recycled zinc exclusively from recycled feeds in primary zinc smelters. However, refined zinc from the processing of electric arc furnace dusts or from the de-zincing of galvanized steel scrap may become important in the future.

ANNUAL AVERAGE SETTLEMENT PRICES, LONDON METAL EXCHANGE FOR SPECIAL HIGH GRADE ZINC

| 1998 | 1999 | 2000 | 2001 | 2002 (e) |
|----------|---------|---------|-------|----------|
| (US\$/t) | | | | |
| 1 023.3 | 1 077.3 | 1 128.1 | 886.3 | 780.0 |

(e) Estimated.

CANADIAN OVERVIEW

- The Myra Falls mine in British Columbia resumed production following a three-month shut-down. Boliden AB suspended operations at the mine in December 2001 to evaluate its future. A new operating plan was put in place to improve the mine's operating efficiency.
- Teck Cominco Limited temporarily closed its Trail, British Columbia, smelter in August to cut zinc production by about 25 000 t in response to weak market conditions.
- Hudson Bay Mining and Smelting closed the Ruttan mine in northern Manitoba at the end of June after 29 years of operation. Record low zinc and copper prices, along with depressed mineral markets, were cited as the reasons for the closure.
- Noranda temporarily shut production during the month of July at its Bell Allard mine near the town of Mata-gami in northern Quebec in response to poor market conditions
- Teck Cominco Limited's Polaris mine on Little Cornwallis Island, Nunavut, closed on September 3 after 21 years of operation due to ore reserve depletion. Work has started on mine decommissioning and rehabilitation, which is expected to be completed by October 2004.

- The Nanisivik mine on northwestern Baffin Island, Nunavut, closed at the end of September after 26 years of operation. The mine, owned and operated by CanZinco Ltd., a wholly owned subsidiary of Breakwater Resources, was closed due to a combination of ore reserve depletion and weak zinc prices.

WORLD OVERVIEW

- Outokumpu resumed production at its Tara zinc mine in Ireland in mid-September after ceasing operations in November 2001. The company expects to produce some 800 000 t of ore by the end of 2002. For 2003, the mine expects to produce 2.6 Mt of ore.
- Brazil's Paranapanema nonferrous group sold its zinc smelting subsidiary, Companhia Paraibuna de Metais, to the Votorantim Grupo.
- BHP Billiton will close its Pering lead and zinc mine in South Africa at the end of 2002. The announcement reflects weak market conditions for zinc.
- Metaleurop announced its decision to switch its Noyelles-Godault plant in France from primary to recycled zinc production sometime in 2003. Zinc production will fall by 20 000-30 000 t to around 70 000 t/y.
- Big River Zinc Corp. restarted its refining operations in the state of Illinois in November following a three-month maintenance shut-down.

LEADING WORLD ZINC PRODUCERS

| Producers | | Producers | |
|---------------------|----------|---------------|----------|
| Zinc in Concentrate | 2002 (e) | Zinc in Metal | 2002 (e) |
| | (000 t) | | (000 t) |
| China | 1 500 | China | 2 000 |
| Australia | 1 450 | Canada | 770 |
| Peru | 1 250 | Japan | 640 |
| Canada | 900 | South Korea | 610 |
| United States | 740 | Australia | 570 |

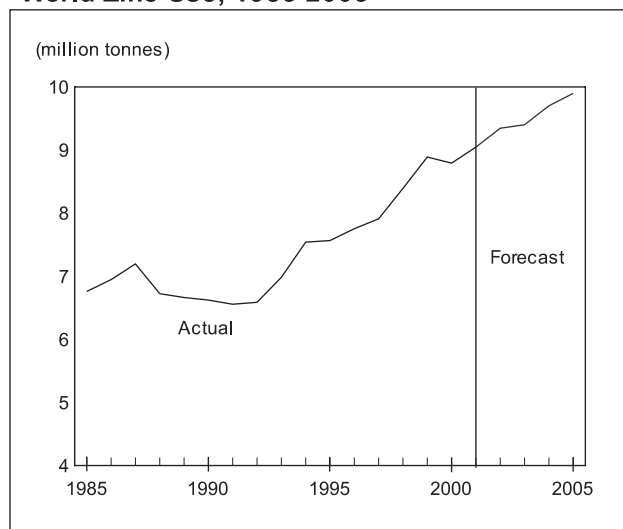
Source: International Lead and Zinc Study Group.
(e) Estimated.

DEMAND OUTLOOK

According to the International Lead and Zinc Study Group (ILZSG), world demand for refined zinc metal is forecast to rise by 3.4% in 2002 and by a further 3.3% in 2003. Strong growth in China will benefit demand in Asia, which is forecast to rise by 4% in both 2002 and 2003. Demand growth in the United States is expected to rise 6.6% in 2002 and 4.5% in 2003. Growth in Europe is forecast to be more modest at 1.6% in 2002 and 1.4% in 2003.

Galvanizing will remain the dominant end use of zinc and exhibit the largest increase in demand during the forecast period, followed by brass and die-cast alloys.

Figure 1
World Zinc Use, 1985-2005



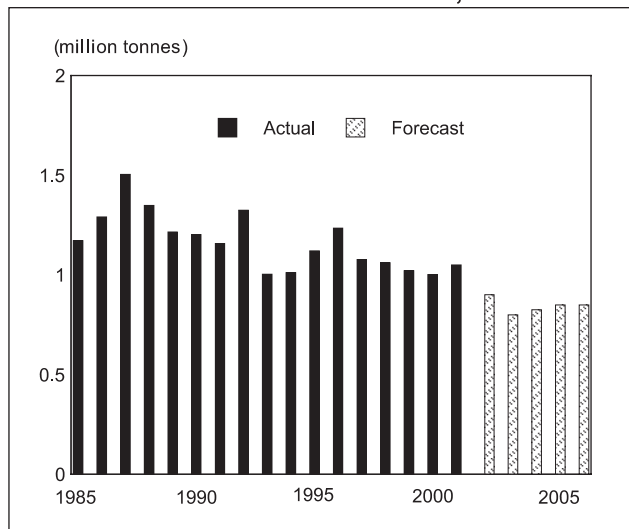
Source: Natural Resources Canada.

CANADIAN PRODUCTION OUTLOOK

Zinc mine production is expected to be about 2.5% lower in 2002 compared to 2001. The closure of the Sullivan mine at the end of 2001, together with closures at the Rutan mine, Polaris and Nanisivik mines, contributed to the lower levels for 2002. Mine production is forecast to fall another 14% in 2003 as a result of the mine closures in 2002.

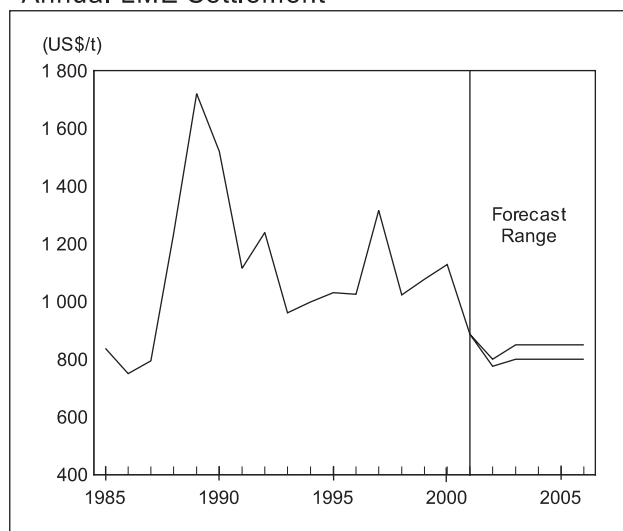
Zinc metal production in Canada is expected to increase by about 16% over 2001, again as a result of a return to more normal levels of production at the Trail smelter and the expansion at Flin Flon. Zinc metal production is expected to increase again by 4.5% in 2003 as the full effects of the expansion at Flin Flon come on stream.

Figure 2
Canadian Mine Production of Zinc, 1985-2006



Source: Natural Resources Canada.

Figure 3
Zinc Prices, 1985-2006
Annual LME Settlement



Source: Natural Resources Canada.

PRICE OUTLOOK

Cash settlement prices struggled throughout the first three quarters of the year to remain above US\$800/t on the London Metal Exchange (LME). Overall zinc prices followed a downward trend, reaching record lows of \$725.50/t by mid-August. The continued low zinc prices did not, however, lead to any significant production cuts and prices remained in the US\$740-\$780/t price range for most of the third quarter.

While consumer stocks fell by about 105 000 t during the year, stocks on the LME continued their upward climb from 434 000 t to over close to 650 000 t by the end of October. Overall, the Study Group forecast anticipates that the Western World market for refined zinc metal will again remain in substantial surplus in both 2002 and 2003. Prices are expected to continue to reflect the oversupply in the market and are forecast to average about US\$775/t in 2002 and to rise to average \$825/t in 2003.

Beyond 2003, continued growth in galvanizing markets, combined with good growth overall for principal zinc markets, is expected in the remainder of the forecast period with zinc prices ranging from US\$800-\$850/t through to 2005.

Note: Information in this article was current as of November 15, 2002.

NOTE TO READERS

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