

# Zinc

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1998 mine production: \$1.5 billion  
 World rank: Second (metal production)  
 Exports: \$1.2 billion

Canada	1998	1999 <sup>e</sup>	2000 <sup>f</sup>
	(000 tonnes)		
Mine production	1 065	1 054	1 105
Metal production	743	774	784
Consumption	169	173	177

<sup>e</sup> Estimated; <sup>f</sup> Forecast.

**Z**inc 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. Secondary zinc has become an increasingly important source of the metal in recent years. Secondary 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 secondary zinc exclusively from secondary 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 PRICES, LONDON METAL EXCHANGE FOR SPECIAL HIGH GRADE ZINC

1995	1996	1997	1998	1999 <sup>e</sup>
(US\$/t)				
1 038.8	1 025.0	1 313.3	1 023.3	1 100.0

<sup>e</sup> Estimated.

## CANADIAN OVERVIEW

- Work continued at Agnico Eagle's LaRonde zinc circuit, which came on stream at the end of September 1998. The company will spend US\$104 million to the end of 2002 to complete the expansion program at LaRonde, including mill expansion and shaft sinking. In June, the company announced its decision to expand the LaRonde mine by a further 39%. It is expected to produce 52 000 t/y of zinc in concentrate by 2000.
- Anglo American Plc is investing US\$240 million at its wholly owned Canadian zinc-copper subsidiary, Hudson Bay Mining and Smelting Co. (HBMS) at Flin Flon, Manitoba. The project includes a new shaft to develop the 777 deposit, which contains some 14.5 Mt of proven and probable reserves. The project is expected to extend the life of HBMS's Flin Flon operations to 2016.
- Cominco announced in June that it intends to process its existing 215 000 t of stockpiled lead smelter slag at Trail, British Columbia, by refurbishing and restarting its No. 2 slag fuming furnace before the end of 1999. The slag stockpile is estimated to contain 35 000 t of zinc.
- Noranda completed development of the \$113 million Bell Allard zinc-copper mine in the Matagami region of Quebec.

- Following a three-month suspension of operations, Boliden Limited restarted its Myra Falls mine located in Strathcona Provincial Park, British Columbia, in March.

## WORLD OVERVIEW

- Korea Zinc Co. Ltd. announced plans to expand its lead-zinc refinery at Onsan. The company expects to increase zinc production capacity by 50 000 t to 400 000 t/y.
- In Australia, Korea Zinc Co. Ltd.'s new US\$425 million refinery in Queensland started production in October. At full production the refinery will have a capacity of 170 000 t/y of zinc.
- Rio Algom Limited, Noranda Inc., Teck Corporation and Mitsubishi Corporation announced the closing and first draw-down of funds from the US\$1320 million project financing for the Antamina copper-zinc project in Peru, and completion of the sale of 10% of Compañía Minera Antamina S.A. (CMA) to Mitsubishi. CMA is now owned 33.75% by each of Noranda and Rio Algom, 22.5% by Teck, and 10% by Mitsubishi.
- Pasminco Ltd. is expected to start shipments of zinc concentrates from its 780 000-t/y Century zinc mine in northwestern Queensland in December. Construction of the mine was completed in September, ahead of schedule and below cost.
- Ivernia West and joint-venture partner Minorco SA started producing ore in September from their Lisheen zinc mine in central Ireland. Lisheen is expected to produce up to 250 000 t of ore this year, with full production projected at 1.5 Mt/y yielding 330 000 t of zinc and 40 000 t of lead in concentrate.

## LEADING WORLD ZINC PRODUCERS

Producers Zinc in Concentrate		Producers Zinc Metal	
	1998 <sup>e</sup>		1998 <sup>e</sup>
	(000 tonnes)		(000 tonnes)
China	1 280	China	1 500
Australia	1 158	Canada	774
Canada	1 054	Japan	635
Peru	910	South Korea	427
United States	810	Spain	378

Source: International Lead and Zinc Study Group.

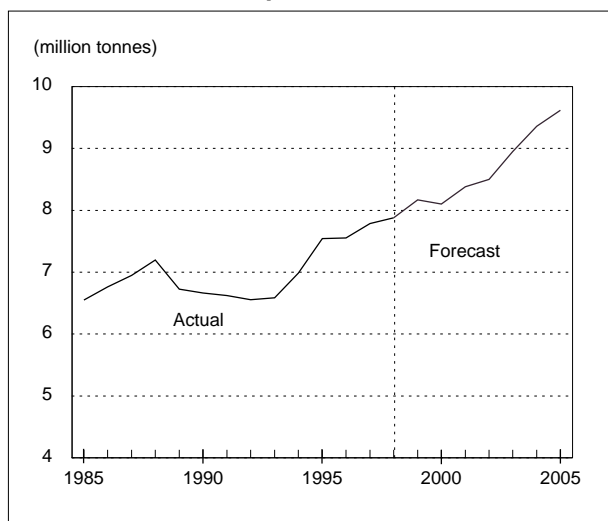
<sup>e</sup> Estimated.

## CONSUMPTION OUTLOOK

An increase of 2.6% in world zinc consumption in 2000 to 8.38 Mt is forecast, following an estimated 3.9% increase in 1999. Continued economic growth in North America should result in increased zinc demand of over 5.6% in 1999, with Europe expected to show more modest growth at just under 1%. In 2000, European demand is expected to rise by 2.7% and remain at 1999 levels for North America. The fall in demand in Japan is expected to stabilize in 1999 and a return to growth of 2% is forecast for 2000.

Beyond 2000, world zinc consumption is forecast to grow by an average 2.8%/y to 2005. Galvanizing will remain the dominant end use of zinc and exhibit the largest increase in consumption during the forecast period, followed by brass and die-cast alloys.

Figure 1  
World Zinc Consumption, 1985-2005



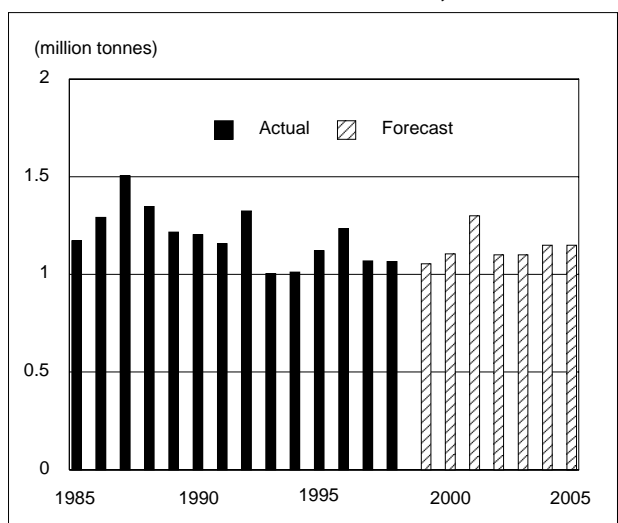
Source: Natural Resources Canada.

## CANADIAN PRODUCTION OUTLOOK

Canada's mine production of zinc is expected to be 1% lower in 1999 compared to 1998. The closure of Anvil Ranges' Faro operations and Breakwater's Caribou and Restigouche mine in 1998, together with lower mine production at a number of other operations, including losses related to the temporary shut-down at Myra Falls, all contributed to the lower mine production figures in 1999. As the new circuit at Agnico Eagle's LaRonde mine continues to ramp up production, and mine production at several other operations increases, total mine production is expected to grow about 5% in 2000. Production is expected to remain at a level between 1.3 and 1.4 Mt/y to the year 2001.

Zinc metal production in Canada will increase about 4% in 1999 to 774 000 t, primarily as a result of the completion of the 20 000-t/y expansion projects at Cominco's Trail operations in British Columbia and at Noranda's Valleyfield zinc refinery in Quebec. In 2000, Canada is expected to produce 784 000 t of zinc metal.

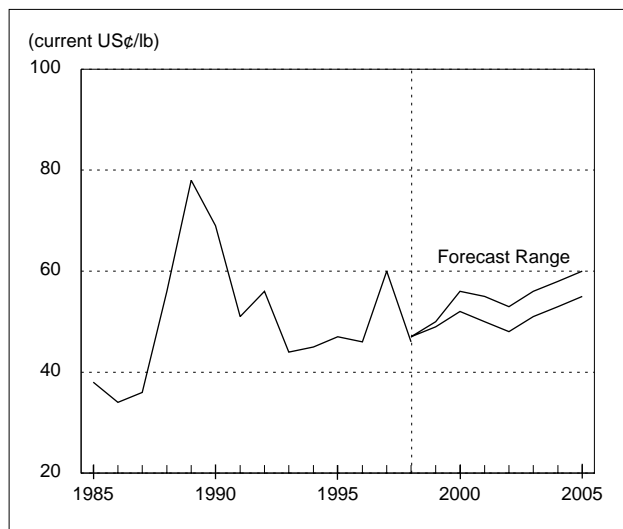
**Figure 2**  
Canadian Mine Production of Zinc, 1985-2005



Source: Natural Resources Canada.

Beyond 2000, investments made in the zinc industry in recent years are expected to result in large increases in mine and smelter capacity near the turn of the century. Continued growth in galvanizing markets, combined with a gradual recovery in overall markets, is expected in the remainder of the forecast period with zinc prices rising to US\$1200-1300/t by 2005.

**Figure 3**  
Zinc Prices, 1985-2005  
Annual LME Settlement



Source: Natural Resources Canada.

## PRICE OUTLOOK

The LME Cash Settlement prices for zinc maintained an upward trend through most of the first three quarters of 1999, peaking at US\$1226/t in September before falling back to the US\$1150/t range at the end of October, which is still some 20% higher than the US\$900/t range at the start of the year. Prices are expected to average about US\$1100/t in 1999. Higher prices reflected the strong demand and continued downward trend in stock levels. Stocks on the LME have fallen from a peak of 321 000 t in January to a low of 279 025 t at the end of October. This represents about 5.7 weeks of supply in the West, the lowest level since 1991.

For 2000, the zinc market is expected to remain fairly balanced with a slight deficit forecast overall. The market recovery in Japan and other South-East Asian nations, as well as continued growth in North America and Europe, is expected to strengthen prices, averaging about US\$1200/t (US55c/lb).

*Note: Information in this article was current as of November 19, 1999.*

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