

# Lead

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2000 mineral production: \$95.8 million  
 World rank: Seventh  
 2000 exports: \$286 million

Canada	2000	2001 <sup>e</sup>	2002 <sup>f</sup>
	(000 tonnes)		
Mine production	149	135	85
Refined production	284	245	275
Usage (refined)	68	60	60

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

**L**ead-acid batteries for automotive, industrial and consumer purposes account for 75% of the world's demand for lead. Lead's corrosion-resistant nature also makes it suitable for applications in sheeting for roofing purposes, while its radiation attenuation properties prevent the emission of harmful radiation from television, video and computer monitors. Certain dispersive or readily bio-available uses, such as lead in gasoline, in piping for drinking water systems and in household paints, have been or are being phased out in Canada and in certain other countries due to health concerns.

## ANNUAL AVERAGE CASH SETTLEMENT PRICES, LONDON METAL EXCHANGE

1997	1998	1999	2000	2001 <sup>e</sup>
(US\$/t)				
624.0	528.4	502.2	454.2	480

<sup>e</sup> Estimated.

## CANADIAN OVERVIEW

- Cominco Ltd. began a series of announced production cutbacks at its Trail smelter complex in southern British Columbia in December 2000. The cutbacks at Trail were part of a plan to allow for a fixed-price power swap agreement with a major U.S. energy company. All work at the lead smelter stopped in September to examine health concerns related to workers exposed to thallium while performing furnace maintenance. Lead production was set to restart in November.
- Elsewhere at Cominco, work continued in preparation for the closure of the Sullivan mine at Kimberly, British Columbia. The mine, which was discovered in 1892 and began operations in 1909, will continue to operate until the planned closure date in December 2001.
- In April, Teck Corporation and Cominco announced that the two companies would merge. The new company, Teck Cominco Limited, was formed in July.
- Exide Technologies delayed the start of production of industrial-type lead-acid batteries at its Maple, Ontario, plant until at least the first quarter of 2002.

## WORLD OVERVIEW

- In March, Doe Run reduced its lead output by 80 000 t/y by closing two mines in the United States and cutting lead concentrate purchases. The company placed the No. 29 mine in its south-east Missouri Mining Division on care and maintenance. The No. 28 mine at the division will be mined to closure this year. As a result of the closures, production at Doe Run's Herculaneum smelter will fall from 250 000 t/y to 170 000 t/y.
- Grupo Mexico, S.A. de C.V. announced in May that its wholly owned subsidiary, ASARCO Incorporated, would continue the suspension of operations at its 70 000-t/y East Helena lead smelter in the United States until market conditions and the

supply of lead concentrates and other raw materials improved.

- Boliden Limited closed the Laisvall mine located in Norrbotten, Sweden, in October after nearly 60 years of production. Elsewhere in Europe, the company's subsidiary, Boliden Apirsa SL, ceased production at its Los Frailes operations in Spain.
- The Henan Yuguang Gold & Lead Group Co., Ltd. completed an expansion project in China that added 50 000 t/y of capacity, increasing the company's total lead production capacity to 130 000 t/y.
- Exide Technologies, the U.S.-based battery maker and lead recycler, announced plans to close two automotive battery manufacturing plants in North America and to restructure its European operations.

#### LEADING WORLD LEAD PRODUCERS

Producers Lead in Concentrate		2001 <sup>e</sup>	Producers Lead Metal		2001 <sup>e</sup>
		(000 tonnes)			(000 tonnes)
Australia	723		United States	1 365	
China	600		China	1 100	
United States	420		Germany	375	
Peru	275		United Kingdom	370	
Mexico	140		Japan	299	
Canada	135		Australia	254	
Morocco	91		Canada	245	

<sup>e</sup> Estimated.

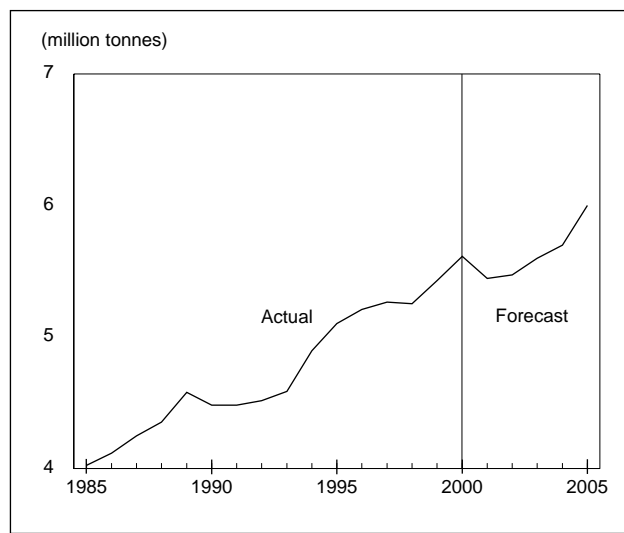
## DEMAND OUTLOOK

According to the International Lead and Zinc Study Group (ILZSG), the world's use of refined lead is expected to fall by just under 1% to 6.4 Mt in 2001, with Western World usage falling by 2.6% to 5.5 Mt. The decline in demand is mainly due to a predicted 5.8% fall in the United States, the first such decline since 1991. Demand in Europe is also expected to fall by about 0.5%. Demand in Asia is forecast to rise 3.8%, mainly as a result of continued good growth in the Chinese market. World demand in 2002 is expected to recover somewhat and to rise by just under 1% to just over 6.5 Mt. Demand in the West

will also show signs of recovery in 2002, rising by only 0.5% to 5.5 Mt. Demand in the United States is expected to rise 1.1% with growth in Asia of about 2.7%.

Over the long term, lead demand is expected to maintain an average annual growth rate of 1.5-2.0%. The battery sector will continue to account for most of the growth with the newly industrialized nations of Southeast Asia expected to continue to record the most rapid growth as the vehicle population expands.

**Figure 1**  
Western World Lead Use, 1985-2005

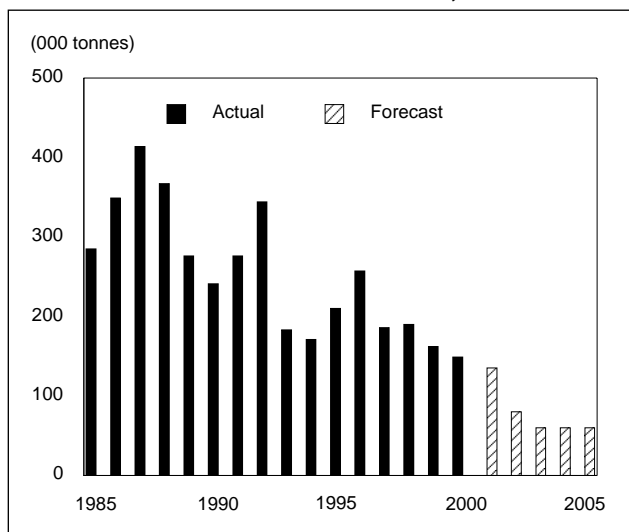


Source: Natural Resources Canada.

## CANADIAN PRODUCTION OUTLOOK

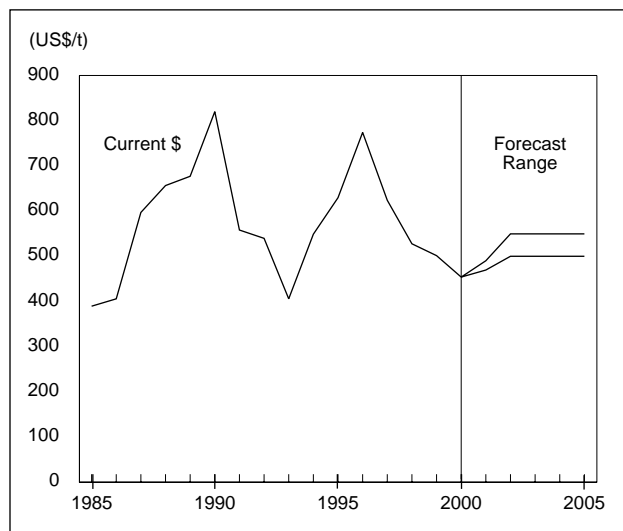
Canadian lead mine production in 2001 is forecast to decrease by about 8.7% from the 2000 level to 135 000 t, due primarily to reduced production at Teck Cominco Limited's Sullivan mine. Mine production is expected to decline a further 37% in 2002 to 85 000 t with the closure of the Sullivan mine at the end of 2001 and the Polaris mine at the end of the first half of 2002. Canadian lead metal production is expected to be 17% lower in 2001 compared to 2000, primarily due to the production cutbacks at, and temporary closure of, the Trail smelter in September and October.

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



Source: Natural Resources Canada.

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



Source: Natural Resources Canada.

## PRICE OUTLOOK

Cash London Metal Exchange (LME) settlement prices for lead traded within the range of between US\$450 and \$500/t over the year. Prices peaked at US\$522/t in March, then fell to reach a minimum for the year of US\$430/t in July. Prices rallied to trade in the \$470/t range by the end of October. Overall, lead prices have not followed the same downward pattern as the other major base metals and are expected to end the year with an average of about US\$480/t. Production has been cut, several mines have already closed or are set to close due to depleted ore reserves, and the replacement battery market is less dependent on the global economic cycle. LME stocks rose to a peak of 143 900 t at the end of February, then continued a downward decline to reach the lowest point for the year at 99 100 t in mid-October.

According to the ILZSG, Western World refined lead market is expected to move into a deficit of about 50 000 t in 2001 and again in 2002 as primary production is affected by mine closures. It is, however, recognized that the predicted levels of refined lead metal output in 2002 will be partially dependent on the availability of sufficient concentrate supplies in the West. Given that the forecasts indicate that these supplies will not be sufficient next year, it is likely that not all lead metal output targets will be achieved. The net result on prices for next year is that they will average about US\$520/t in 2002. In the longer term, prices are expected to average between US\$500 and \$550/t to the year 2005.

*Note: Information in this article was current as of November 9, 2001.*

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