

# Copper

## Maureen Coulas

International and Domestic Market Policy Division

Telephone: (613) 992-4093

E-mail: mcoulas@nrcan.gc.ca

2000 production:	\$1.69 billion
World rank (mine production):	Fifth
Exports (concentrate and unwrought):	\$1.65 billion

Canada	2000	2001 <sup>e</sup>	2002 <sup>f</sup>
	(000 tonnes)		
Copper mine production	634	625	622
Refined copper production	551	575	615
Refined copper use	274	280	290

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

Copper's properties, particularly its high electrical and thermal conductivity, good tensile strength, elevated melting point, non-magnetic properties and resistance to corrosion, make it and its alloys very attractive for electrical transmission, water tubing, castings and heat exchangers. Copper is the most efficient conductor of electrical power, signals and heat of all the industrial metals. In Canada, more than half of the refined copper used annually is for electrical applications, mostly in wire.

## ANNUAL AVERAGE SETTLEMENT PRICES, LONDON METAL EXCHANGE

1997	1998	1999	2000	2001 <sup>e</sup>
(US\$/t)				
2 276	1 654	1 572	1 813	1 559

<sup>e</sup> Estimated.

## CANADIAN OVERVIEW

- In April, Teck Corporation and Cominco Ltd. announced that the two companies would merge. Teck Cominco Limited was formed in July and ranks as the fourth largest North American-based base-metal mining and refining company. The merged companies' copper assets include a 64% interest in the Highland Valley copper mine in British Columbia, a 25% interest in the Louvicourt mine in Quebec, and a 22.5% interest in the Antamina zinc-copper mine in Peru.
- In July 2001, Imperial Metals Corporation announced plans to suspend production at its copper-gold operations in British Columbia effective September 30, 2001, due to low metal prices.
- In October 2001, Hudson Bay Mining and Smelting Co., Limited (HBMS) announced that it will permanently close the Ruttan zinc-copper mine in northern Manitoba no later than May 2002. Low metal prices, a slowing world economy and a poor economic outlook were the reasons cited for the closure. The Ruttan mine produces approximately 13 500 t/y of copper in concentrate.
- Also in October 2001, Boliden AB announced a three-month suspension of production at its Myra Falls zinc-copper mine in British Columbia beginning on December 3 in response to low metal prices. The mine produces 15 000 t/y of copper in concentrate.

## WORLD OVERVIEW

- In March, London-based Billiton Plc and Australia's BHP Limited announced their intention to merge their operations to form a new company to be known as BHP Billiton. The merged company's assets are valued at approximately US\$11 billion and it ranks as the world's fourth largest producer of copper. BHP Billiton's operations in Canada include a 33.6% partnership interest in the Highland Valley Copper (HVC) copper mine in British Columbia and the 100%-owned Selbaie mine located in northwestern Quebec.

- Noranda Inc., Teck Cominco Limited, BHP Billiton Plc and Mitsubishi Corporation announced that the Antamina copper-zinc project in northern Peru had achieved commercial production in October, more than four months ahead of the original schedule of February 2002. At an average annual production of 675 million pounds of copper, Antamina is one of the largest copper mines in the world.
- In October, in response to falling copper prices, Arizona-based Phelps Dodge Corporation announced a series of production cutbacks and temporary closures at its U.S.-based operations that would result in a 220 000-t/y reduction in copper metal output by mid-January 2002. The reductions comprise a temporary closure of the Chino and Miami mines, a cutback of 50% at the Sierrita and Bagdad mines, and closure of the Chino smelter and Miami refinery.
- In November, BHP Billiton announced that it would reduce planned production at the Escondida mine in Chile by 10%, or approximately 80 000 t/y of copper in concentrate, effective the end of November. The company also announced that it would suspend sulphide production at the Tintaya mine, also in Chile, effective January 8, 2002; this represents 90 000 t of the mine's annual output. The company cited the serious fall in copper demand as the rationale for the production cuts.

## DEMAND OUTLOOK

According to the International Copper Study Group (ICSG), global demand for refined copper is expected

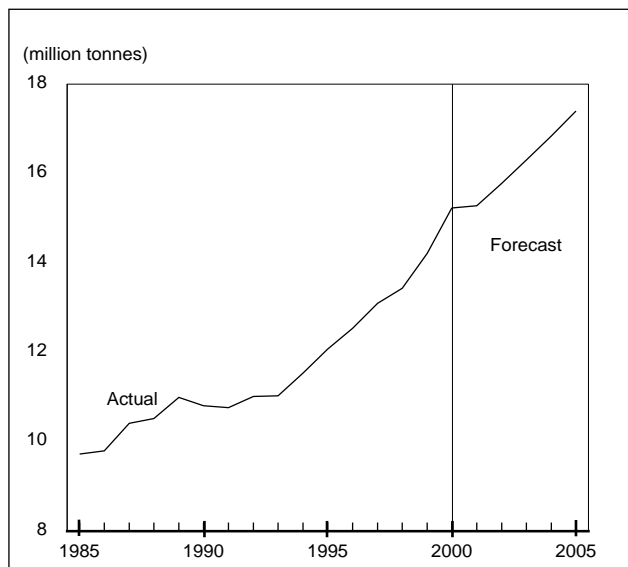
to decline by about 3.3% from 15.3 Mt in 2000 to 14.8 Mt in 2001. The decline is due to a sharp drop in economic activity that began in the second quarter in most of the major copper-using regions (e.g., the United States, Europe and Asia). Demand in Mexico and the United States in 2001 is forecast to decline by 12.9% and 10.2%, respectively. Other regions forecast to record declines in demand in 2001 include Japan at -14.1%, Taiwan at -10.5%, and the European Union at -5.1%. Offsetting these forecast declines is expected growth in demand from China (+11.8%) and India (+7.2%).

Based on figures supplied to the ICSG by member governments in November 2001, world copper usage is forecast to rise by about 3.3% in 2002 to 15.3 Mt.

## CANADIAN PRODUCTION OUTLOOK

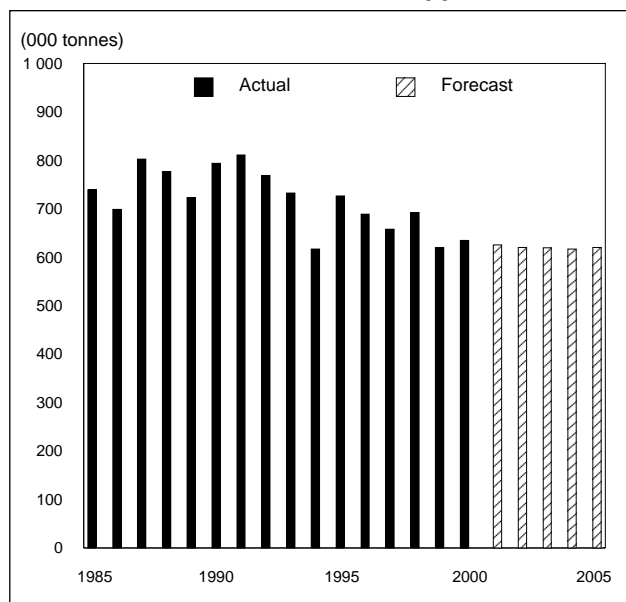
Canadian copper mine production (recoverable copper in concentrate) is expected to total approximately 625 000 t in 2001, slightly below 2000's output of 634 000 t. Lower output from the Myra Falls mine, the Mount Polley mine and Falconbridge's Sudbury operations, which were affected by a strike, were partially offset by increases at other operations, notably at Northgate Exploration Limited's Kemess mine. Estimated mine production in 2002 is currently forecast at 622 000 t, slightly below the 2001 forecast level. The forecast production for 2002 includes a reduction in output from HBMS, reflecting the announced closure of the Ruttan mine by May 2002.

**Figure 1**  
World Refined Copper Use, 1985-2005



Source: Natural Resources Canada.

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



Source: Natural Resources Canada.

Refined copper production is forecast to grow by 4.4% to 575 000 t in 2001 and by a further 7.0% to 615 000 t in 2002. The forecast rise is based on anticipated full production from the recently expanded CCR and Kidd Creek refineries compared to estimated below-capacity output at both plants in 2001.

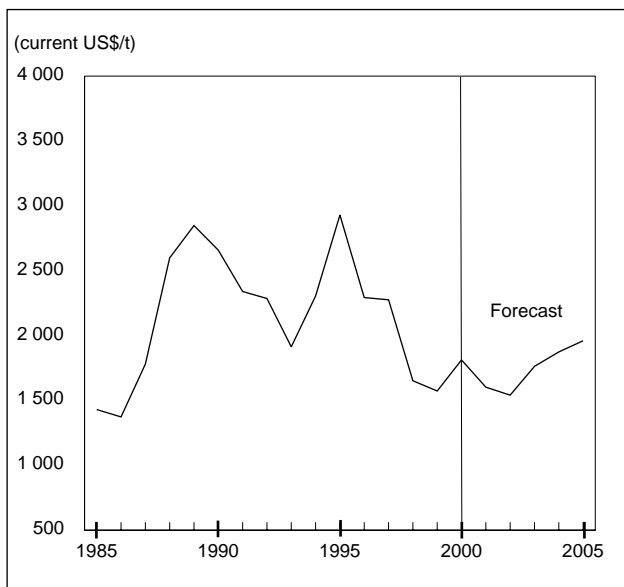
## PRICE OUTLOOK

The dramatic decline in demand that began in the second quarter of 2001, combined with an estimated 3.9% increase in world refined copper production during the year, has pushed the supply/demand balance for copper metal from a deficit in 2000 of 457 000 t to a forecast surplus of 541 000 t in 2001. Exchange stocks, which stood at 524 000 t at the start of the year, have risen dramatically since the third quarter and are now expected to finish the year at just over 1 Mt. These supply/demand fundamentals have driven down prices from a first-quarter average on the London Metal Exchange (LME) of US81¢/lb, or \$1794/t, down to the US64¢/lb (\$1485/t) level by the end of September. For the full year of 2001, the LME Cash settlement price for Grade A copper is forecast to average in the 70¢- 71¢/lb range, or US\$1600-\$1654/t, down 14% from the 2000 average of US\$1814¢/lb, or US\$1813/t.

Looking ahead to 2002, based on the cutbacks in mine production totaling approximately 485 000 t/y announced as of mid-November, growth in world refined copper use is expected to increase by 3.1% while world production of refined copper is expected to decline by about 1.1%. As a result, a small deficit of about 100 000 t is forecast. Despite this anticipated return to a balanced market in 2002, high stocks of copper metal will likely impede a major price recovery; thus, in 2002, prices are expected to average around US70¢/lb (US\$1540/t). Beyond 2002, the price outlook becomes much more bullish as growth in demand is anticipated to outstrip supply. This could push prices up to the US80¢/lb level (US\$1764/t) in the period 2003/04.

*Note: Information in this article was current as of November 22, 2001.*

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



Source: Natural Resources Canada.

## NOTE TO READERS

The intent of this document is to provide general information and to elicit discussion. It is not intended as a reference, guide or suggestion to be used in trading, investment, or other commercial activities. The author and Natural Resources Canada make no warranty of any kind with respect to the content and accept no liability, either incidental, consequential, financial or otherwise, arising from the use of this document.