

### 10.3 Commodity summary

**Mineral fuels.** Oil, natural gas, coal and uranium are summarized in Chapter 11, Energy. Areas of production of other minerals and an explanation of changes in other sectors are outlined here.

#### 10.3.1 Metals

**Copper.** In 1986, mine production of copper in Canada rose for the fourth consecutive year since 1982, reaching an estimated 747 000 t of contained recoverable copper from over 50 mines. Estimated shipments in 1986 were 768 000 t of payable or recoverable copper, valued at \$1.6 billion. British Columbia and Ontario are the largest producers, and, on average since 1984, have accounted for 41% and 39%, respectively, of Canadian shipments. British Columbia's production is mostly exported for smelting, while Ontario's production is processed domestically. Manitoba and Quebec were the next largest shippers, each accounting for just over 9% of total Canadian copper shipments.

Canadian copper is produced in association with many other metals, most notably zinc, nickel and gold. The continuing low price of copper and some of its by- or co-products has seriously affected the profitability of most Canadian operations. A significant number of mines will be exhausted prior to 1990, but the prospect of continuing low prices has discouraged exploration for replacement capacity.

Annual Canadian refined production averaged 496 000 t for the period 1984 to 1986, of which just over 40% was shipped to domestic destinations for conversion into semi-fabricated forms such as sheet, tube, plate, wire and cable. Domestic producers have minimal or no tariff protection and must compete with imports from other producing countries. Imports of refined shapes generally average about 10% of domestic shipments. Thus domestic consumption of copper averaged 225 000 t from 1984 to 1986, including imported material. Exports of primary, refined and semi-manufactured copper goods have generated an average of \$1.2 billion annually, sold into an internationally competitive market, including countries with significant tariff protection.

There are six Canadian copper smelters, located in Flin Flon, Man., Timmins, Falconbridge and Copper Cliff, Ont., and Rouyn-Noranda and Murdochville, Que. The three copper refineries are in Timmins, Copper Cliff and in Montreal East. The smelter and refinery

in Timmins commenced an expansion from 60 000 to 90 000 tonnes per year that was essentially completed in late 1986.

Copper prices declined from 65 to 62 cents US/lb from 1985 to 1986. Due to the pressures associated with the low prices, companies in Canada and abroad have increased productivity and production to reduce costs — increasing oversupply and further reducing prices.

**Iron ore** production declined from a peak of 59.6 million tonnes in 1979 to a low of 33.0 million tonnes in 1983, recovering to 39.5 million tonnes in 1985 and 36.1 million tonnes in 1986. The major markets for Canadian iron ore are Western Europe, United States and Canada's own domestic steel industry.

Mine closures since 1983 in Quebec, Ontario and British Columbia reduced to six the number of iron ore mines in Canada and brought down production capacity to 50 million tonnes per year.

Three of the remaining mines are in the Labrador trough geological structure and these account for 93% of Canada's iron ore production. The three mines in Ontario, although small by world standards, have been producing advanced forms of iron ore to improve efficiency at the steel plants.

**Nickel.** Canada is the largest producer of nickel in the world, accounting for a little over one-fifth of total production. In 1986, Canada produced about 180 600 t, valued at \$1.1 billion, compared to 170 000 t in 1985.

With production concentrated in Ontario and Manitoba, nickel was produced from mines at Sudbury, Ont. and Thompson, Man. Refined nickel was produced at Sudbury and Port Colborne in Ontario and at Thompson, Man. A nickel refinery was also in operation at Fort Saskatchewan, Alta.

Cost reduction programs have been an important priority of producers in the past few years. The results have been encouraging and production costs have been drastically reduced. Operating costs at the Sudbury and Thompson operations, in current dollars, were actually lower in 1986 than in 1980.

Nickel prices on the London Metal Exchange fell in 1986 to an average price of US\$1.76, compared to \$2.22 in 1985. Global overcapacity has been keeping prices under pressure and the overcapacity is expected to persist for several more years.

Resistance to corrosion, high strength over a wide temperature range, pleasing appearance and suitability as an alloying agent are characteristics