

trade practices similar to those employed by Japan, to support further manufacturing industries based on low labour rates. They have erected high tariff barriers against the imports of refined metal to support a higher domestic price for refined copper. The higher price is passed on to the smelter allowing it to quote treatment charges at less than cost. This action has created a world surplus of smelting capacity and has put pressure on the limited availability of exportable concentrates, making uncompetitive those smelters that do not control a source of concentrate. Some less developed countries (LDC's) such as the Philippines have placed export restriction on concentrates to ensure that its smelters have adequate supplies.

World Capacity and Production

LDC's have increased mining, smelting and refining capacity. Today, due to this and to the decline in copper demand there is over-production in the world. The LDC's for social reasons and because of the need for foreign currency have not cut back mining or smelting operations in times of low demand even though losses are being incurred. In contrast North American producers have cut back some 15 percent, as they are constrained to operate at a profit, at least in the medium term. Chile is an exception among the LDC's, as its expansion is based on rich, low cost ore bodies that generate profits even at depressed copper prices.

EXEMPT
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2.c. Technological Factors

Pyrometallurgical processes are dominant for copper smelting technology. There are several technologies that are energy efficient and which permit converting sulphur dioxide emissions into sulphuric acid. Inco, Noranda, Outokumpu Oy, and Mitsubishi have commercial processes in place.

There are no barriers to obtaining foreign technology through technology licensing arrangements. Canadian processes have been sold to foreign competitors.

If Hudson Bay has to comply with the proposed pollution regulations, further R&D must be engaged in to develop a suitable process which avoids the generation of sulphur dioxide.

Several hydrometallurgical processes are in various stages of development throughout the world; however, none is comparable with the type of concentrates treated by Hudson Bay.

In Canada, a sulphate leaching process by Sheritt-Consolidated (S-C) was developed in the mid-1970's while a chloride-leach process by Great Central Mines (GCM) is under development.

These processes are expected to offer lower capital costs, comparable operating costs, better economies of scale and the important financial benefits associated with marketing elemental sulphur.