The Mineral Industry of New Caledonia

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NICKEL ores and products comprised New Caledonia's most important exports in 1963, amounting to US$44.4 million of a total US$50 million. The country's economy was almost completely dependent on the nickel industry that was dominated by the French company Société Le Nickel. The company operated the mines on the island and a large nickel smelter in the capital city of Noumea. Small quantities of iron ore and chromite also contributed to the country's income. France was the principal trading partner and had the advantage of duty-free exchange of trade goods. Purchases of U.S. mining equipment were below normal in 1963. Mining activities and statistics were reported in the annual statement published by the New Caledonia Service Des Mines.

PRODUCTION

In 1963, output of nickel ore was about one-third higher and production of nickel metallurgical products, matte and ferronickel, nearly 50 percent more than in 1962. Iron ore production remained about the same as in 1962. No chromite mining was reported in1963.

TABLE 1.—Production of metals and minerals

(Metric tons unless otherwise specified)

Commodity	1959	1960	1961	1962	1963
Metals:					
Chromite (51 to 53 percent chromium oxide)	43,965	39,160	36,662	15,455	----------
Iron ore (55 to 56 percent iron)..thousand tons	287	276	277	303	299
Nickel:					
Ore [1] (3.0 to 3.1 percent nickel)..do	1,381	2,274	2,310	1,458	1,931
Metal in ore	32,800	53,500	53,300	34,000	44,500
Metallurgical products: [2]					
Ferronickel (nickel-cobalt content)	4,921	11,440	13,367	5,506	8,332
Matte (nickel-cobalt content)	6,945	10,429	12,034	9,858	14,146
Total (nickel-cobalt content)	11,866	21,869	25,401	15,364	22,478
Nonmetals:					
Giobertite [3]	3,017	----------	----------	1,176	12

[1] Mine-run ore about ¼ water; nickel content by dry analysis.
[2] Ferronickel grading 24 to 28 percent nickel-cobalt, mattes about 77 percent nickel-cobalt.
[3] Magnesian mineral used for refractories.

Source: Mines Service of New Caledonia.

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TRADE

Five mineral products, nickel ore, ferronickel (four grades), nickel matte, iron ore, and chromite, were exported in 1963, accounting for over 95 percent of New Caledonia's total value of exports. As in previous years, France was the principal destination of the metallurgical products. Japan as usual purchased nickel ore and for the first time also bought relatively large quantities of nickel matte and ferronickel. Australia and the United States took small tonnages of ferronickel. All iron ore went to Australia, and chromite, shipped from stocks, went mostly to France.

Imports consisted of petroleum products, coal, coke, cement, limestone, and gypsum; most of these going to Noumea and the nickel smelting operations. Total value of mineral products imported in 1963 was about US$6.5 million. About half of the value of mineral imports was in coal and coke from Australia. An estimated 30,000 tons of gypsum was imported from Mexico.

TABLE 2.—Exports of metals and minerals

(Metric tons)

Commodity	1962	1963	Principal destinations, 1963
Chromite	15,009	17,955	Mainly to France.
Iron ore	282,202	294,148	All to Australia.
Nickel:			
Ore	596,008	639,913	All to Japan.
Metallurgical products: [1]			
Ferronickel:			
Electric grade (25.1 percent nickel-cobalt).	1,219	1,704	Mainly to France and Japan.
Sulfur extracted (24.5 percent nickel-cobalt).	203	552	
Refined (26.3 percent nickel-cobalt).	42	141	
Overrefined (27.5 percent nickel-cobalt).	3,677	5,759	
Matte:			
Nickel, iron extracted (79 percent nickel-cobalt).	9,025	14,129	
Cobalt [2] (65 percent nickel-cobalt).	90	----------	

[1] Data in terms of contained nickel plus cobalt.
[2] Matte exceeding 2 percent in cobalt.

Source: Mines Service of New Caledonia.

COMMODITY REVIEW

Iron Ore.—Mines at the extreme southern end of New Caledonia produced iron ore averaging 55.8 percent iron in 1963 for export to the Broken Hill Proprietary Co. Ltd., steelworks in Australia. Extraction, started in 1955–56, was at a consistent level of about 300,000 tons annually.

Nickel and Cobalt.—Nickel ore containing 2.8 to 3.5 percent nickel and about 0.02 percent cobalt on a dry basis was mined by some 15 companies. Over half was mined by the French firm, Société Le Nickel (SLN), which also operated a metallurgical plant at Noumea (Doniambo plant) on the southeast coast. Ore output was higher than in 1962 but fell short of the record set in 1961. Ores came from 15 or

more districts, the most important being Thio, on the northeast coast, where SLN operated the Plateau and Bornet group mines. Sizable outputs also came from the Poya, Kouaoua, Ouaco, Tontouta, and Houailou districts. About one-third of the ore mined in 1963 was exported to Japan; the rest went to Noumea for smelting. Exported ores were mainly from the Tomo mines, Tantouta district, and from SLN's Plateau mines.

Maintaining the grade of exports was a special problem, partly due to the 25-percent moisture content of the ore. The refusal point for ore landed in Japan had been 3.0 percent nickel. Because of the clayey ore's moisture pickup in shipment, however, it was necessary to supply a somewhat higher grade, about 3.2 percent nickel. Selective mining to achieve such grade was prematurely depleting reserves. Considering this and generally declining grades in most mines, the Japanese lowered the refusal point to 2.80 percent nickel plus cobalt (dry basis) in their purchase contracts for 1962–63. An f.o.b. price of 50 cents per kilogram (about US$0.23 per pound) of contained nickel plus cobalt was continued for ore assaying 3.20 percent, with differentials applied to higher or lower grades.

SLN's Noumea smelter produced matte containing 77 percent nickel and 23 percent sulfur, and ferronickel in grades ranging 24 to 28 percent nickel. Output was nearly 50 percent higher in 1963 than in 1962 as two new furnaces were fired up. Plant operations had been slowed during 1962 by changes in the matte smelting section involving replacement of four water jacket furnaces with two 20-ton Bessemer converters. An oxygen plant of 150-cubic-meter-per-hour capacity supplied the converters. The company generated its own power with a hydroelectric plant and two thermal plants having capacities of 68,000, 25,000, and 4,000 kilowatts, respectively. Australian coal was imported and converted to coke for smelting. Most nickel matte went to the SLN plant in Havre, France, for reduction to nickel metal. In 1963, however, 4,135 tons of matte was exported to Japan. Most ferronickel also went to France in 1963, except for 1,543 tons exported to Japan, 712 tons to Australia, and 34 tons to the United States. Cobalt was recovered from matte shipped to France.

Others.—A few tons of a magnesian mineral, giobertite, used as a refractory material in nickel smelting was the only other mineral produced in New Caledonia in 1963. Chromite mining stopped at the end of 1962 but shipments continued from stocks, all exported to France. The United States had been a principal buyer of New Caledonian chromite until prices became too high owing to increased mining costs. Tiebaghi, on the northwest coast, was the chief deposit area.