THE MINERAL INDUSTRY OF

NEW CALEDONIA

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The French Territory of New Caledonia and Dependencies lies about 2,000 kilometers (km) off the eastern coast of Australia. It is one of the largest island groups in the region and consists of the 400-km-long main island of La Grande Terre surrounded by smaller islands. New Caledonia covers 19,060 square kilometers (km^2), of which 18, 575 km^2 is land. The territory comprises three provinces—Loyalty Islands, Northern, and Southern.

The mineral industry of New Caledonia continued to be dominated by the mining of nickeliferous laterite-saprolite and garnierite ores and the production of ferronickel of various commercial grades and nickel matte at the 63,000-metric-ton-per-year (t/yr)-capacity Doniambo Smelter in the harbor of Nouméa, which is the territorial capital. The products of the Doniambo plant consisted of about 80% ferronickel and 20% matte. The ferronickel was used in making stainless steel; the matte was shipped to Eramet S.A.'s Sandouville Refinery near La Havre in northern France for conversion into high-purity nickel metal and salts of nickel and cobalt. The Doniambo Smelter was owned and operated by Société le Nickel (SLN). SLN and its Eramet parent were privatized by the French Government in 1999, which resulted in Eramet owning a 60% share of SLN; a local consortium that represented indigenous peoples of the three provinces through a new public company, 30%; and Nisshin Steel Co. of Japan, 10% (Resource Information Unit, 2001, p. 129). New Caledonia was the world's fourth largest nickel miner, after Russia, Canada, and Australia (Kuck, 2001), and the largest ferronickel producer in the world (Resource Information Unit, 2001, p. 129).

The nickel industry, which included nickel mining, as well as cobalt as a coproduct and ferronickel and nickel matte from smelting, was the mainstay of New Caledonia's economy. The industry accounted for about 7% to 10% of New Caledonia's gross domestic product and contributed about 80% to foreign exchange earnings. New Caledonia has enormous nickel resources, which have been estimated to be from 25% to 40% of the world's resources [MBendi, March 29, 2001, New Caledonia (FR)—Overview, accessed March 29, 2001, at URL http://mbendi.co.za/indy/ming/au/nc/p0005.htm].

On the main island, SLN mined nickel ore from five operations—Etoile du Nord, Kouaoua, Népoui-Kopeto, Thio, and Tiébaghi. Their output supplied feed to SLN's Doniambo Smelter. Additional production was from the open cut at Kouaoua, which was operated by Société Minière du Sud Pacifique S.A. (SMSP). SMSP's ore was used as feed for Billiton Plc.'s Yabulu Refinery in Townsville, Australia, which was operated by Billiton's wholly owned subsidiary QNI Ltd.

Nickel ore was mined by removing the tops and flanks of the laterite-rich deposits that compose ultramafic rock and then trucked, piped, or moved on cableways to coastal ore stockpiles. At the Thio Mine, however, the ore was trucked or moved by cableway to coastal stockpiles and then loaded onto barges and tugged to be loaded by buckets onto 20,000- to 25,000-metric-ton ore carriers for either export to Australia or Japan or transport to the Doniambo Smelter. The cargo vessels were loaded directly from conveyor belts that ran on sea gantries (Resource Information Unit, 2000, p. 26).

In December 2000, based on the successful results of its $50 million, 12-metric-ton-per-day integrated pilot plant program, which had been testing the viability of its proprietary pressure acid leach and solvent extraction processing technology since October 1999, Inco Ltd. of Canada decided to proceed with the next phase of the project. The company was on schedule to begin production from a commercial-scale facility in late 2004 or early 2005 at its 85% owned Goro lateritic nickel-cobalt project. Inco planned to invest $100 million in 2001 for the next phase of the project, which included completing a bankable feasibility study in the first quarter, arranging financing for the commercial facility, selecting the engineering construction consortium to build the commercial-scale plant, and completing negotiations with the Government regarding the fiscal regulations, regulatory arrangements, and securing necessary permits and clearances (Inco Ltd., 2000, p. 1). The operation was envisaged to have a production capacity of about 55,000 t/yr of nickel-in-oxide and 5,000 t/yr of cobalt. Goro Nickel S.A., which was the operating company, was incorporated in New Caledonia as a 100% subsidiary of Cia. Minière de Xere, which was 85% owned by Inco and 15% owned by the French Government's Bureau de Recherches Géologiques et Minières (Mining Journal, 2000).

In addition to abundant resources of nickel ore, the island territory also has potential for volcanogenic copper-lead-zinc-gold-silver sulfide deposits and porphyry copper deposits. Significant prospects have been reported for antimony, copper, gold, iron ore, lead-zinc, manganese, and phosphate rock. None of these, however, has been mined commercially. Construction materials were produced from several quarries, and Société des Ciments de Numbo operated a cement plant at Nouméa.

References Cited

Inco Ltd., 2000, Inco to proceed with the next phase of Goro nickel project: Nouméa, Inco Ltd. press release, December 13, 3 p.

Kuck, P.H., 2001, Nickel: U.S. Geological Survey Mineral Commodity Summaries 2001, p. 112-113.

Mining Journal, 2000, Mining week—Goro go-ahead: Mining Journal, v. 335, no. 8613, December 15, p. 466-467.

Resource Information Unit, 2000, Register of Pacific mining 2000: Resource Information Unit, 144 p.

———2001, Register of Pacific mining 2001: Resource Information Unit, 156 p.

Major Source of Information

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TABLE 1
NEW CALEDONIA: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/		1996	1997	1998	1999	2000
Cement e/		100,000	100,000	-- 3/	-- 3/	100,000
Cobalt, mine output: e/						
Co content		6,000	6,500	6,500	6,500	6,000
Recovered		800	800	800	800	800
Nickel:						
Ore:						
Gross weight	thousand tons	7,240	8,145	7,526	6,561	7,087
Ni content		122,486	136,467	125,319	110,062	119,905
Metallurgical products:						
Ferronickel:						
Gross weight e/		169,000	172,000	157,959 3/	157,592 3/	169,000
Metal content (nickel plus cobalt)		42,173	44,312	44,491	45,289	42,200 e/
Nickel matte:						
Gross weight e/		16,800	18,900	16,813 3/	15,808 3/	18,500
Metal content (nickel plus cobalt)		11,239	10,580	12,011	11,353	10,143

e/ Estimated. -- Zero.

1/ Table includes data available through April 2, 2001.

2/ In addition to the commodities listed, crude (unspecified) and crushed stone, construction sand, and silica sand for metallurgical use are produced, but data are insufficient to make reliable estimates of quantities.

3/ Reported figure.