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The Mineral Industry of New Caledonia

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New Caledonia is rich in mineral resources. The territory's nickel reserves were estimated to account for about 25% of the world nickel reserves. Other identified mineral resources in New Caledonia were chromium, cobalt (associated with nickel), copper, gold, iron, manganese, and silver (Resource Information Unit, 2008, p. 52).

New Caledonia was the world's fifth ranked producer of mined nickel after Russia, Canada, Australia, and Indonesia (Kuck, 2008). It was the world's second ranked producer of ferronickel after Japan (Kuck, P.H., mineral commodity specialist, U.S. Geological Survey, unpublished data, April 28, 2008).

In 2007, exports of nickel ore went to Japan (40%), China (31%), and Australia (29%). Exports of ferronickel went to the European Union (32.9%), Taiwan (23.7%), Japan (22.9%), South Africa (8.2%), China (6.3%), the United States (4.3%), and other countries, such as India and the Republic of Korea (1.7%). Exports of nickel matte went to France (100%) (International Nickel Study Group, 2008).

According to New Caledonia Government officials, the regulations for exports of nickel ore under a new mineral law would remain unchanged. The Government of New Caledonia would continue to restrict exports of saprolite ore with nickel content higher than 2.5%. Ores with grades above 2.5% are reserved for New Caledonian smelters. The country will continue to allow exports of lower-quality laterite ore (Hornby, 2007).

Production

In the past 5 years, nickel and cobalt were the two metallic commodities that were produced in large quantity. Société Le Nickel (SLN) was the leading nickel-cobalt ore producer and the sole producer of ferronickel and nickel matte. Other major nickel ore producers were Société des Mines de la Tontouta (SMT) and Société Miniere du Sud Pacifique (SMSP). Because of the ending of a 4-month general strike before the end of January 2007, the overall mine production of nickel ore (in gross weight) increased by 21.5% in 2007 to 7.5 million metric tons (Mt), of which 5.5 Mt was saprolite and 2.0 Mt was laterite. Exports of nickel ore (in gross weight) also increased by 23.1% in 2007 to 4.0 Mt, of which 2.43 Mt was saprolite and 1.57 Mt, laterite (Institute de la Statistique et des Études Économique, 2008b).

Production of ferronickel and nickel matte was by SLN at its 75,000-metric-ton-per-year (t/yr)-capacity Doniambo Smelter near Noumea. SLN's Doniambo smelter ranked as the world's largest-capacity ferronickel plant. In 2007, The Doniambo Smelter's production of nickel in ferronickel and matte increased by 18.7% to 59,797 metric tons (t), of which 44,955 t was ferronickel and 14,842 t was nickel matte (Institute de La Statistique et des Étude Économiques, 2008b).

In February 2007, a French court overturned a ruling that required Companhia Vale do Rio Doce-Inco Ltd. (CVRD-Inco) to stop work on a section of its Goro nickel project in New Caledonia. The Paris Court of Appeals allowed CVRD-Inco to continue work on the construction of the Kwe Quest residue storage facility at Goro because the court found no evidence that the construction of the residue storage facility (waste dump) would pose an imminent risk to the environment. In April 2007, CVRD-Inco announced that it planned to invest $3.2 billion to speed up the Goro nickel project in New Caledonia. According to CVRD-Inco, the project construction at the Goro nickel site was two-thirds completed and the engineering work was 90% completed. Overall construction of the Goro nickel project was scheduled for completion at the end of 2008, and the first production was targeted for early 2009. The Goro deposit was said to be among the best undeveloped laterite ore bodies in the world with 55 Mt of estimated measured and indicated reserves of nickel ore. The Goro nickel project would have a capacity to produce 60,000 t/yr of nickel and between 4,300 and 5,000 t/yr of cobalt (Companhia Vale do Rio Doce-Inco Ltd., 2007; Reuters, 2007a, b).

Xstrata plc of Switzerland, which acquired the Koniambo nickel project from Falconbridge Ltd. of Canada in 2006, started construction in February 2007 and had completed construction of the Stage-I construction camp in December 2007. The project was scheduled to produce 60,000 t/yr of nickel in ferronickel at full capacity in 2013. According to Xstrata, the company's board of directors had approved the $3.8 billion investment for the project, of which SMSP (the partner in the project) would contribute $500 million, and Xstrata would provide the remainder (TEX Report, The, 2008).

In 2006, Falconbridge Ltd. of Canada reportedly had awarded a $250 million contract to a joint venture of Hatch Ltd. of Canada and Technip S.A. of France for the construction of the Koniambo nickel smelter, which is located near Kone in New Caledonia's North Province. The $250 million contract included engineering for the overall investment, procurement, and construction project management services. Construction began in February 2007. The Koniambo deposit was one of the world's largest and highest-grade undeveloped nickel and laterite deposits (Digital50.com, 2006).

Under an agreement signed between Pohang Iron and Steel Co. Ltd. (POSCO) of the Republic of Korea and SMSP in April 2006, POSCO and SMSP would establish a joint-venture company, Nickel Mining Company (NMC), and SMSP would transfer its nickel assets to this company shortly after the establishment of the joint venture. Because of legislative procedures in New Caledonia, the transfer of the nickel assets to NMC was delayed. The major issues that would need to be resolved were how much tax on the value added would be paid for the nickel assets, and how this tax would be treated within the existing system of taxation (TEX Report, The, 2007).

Gladstone Pacific Nickel Ltd. (GPNL) of Australia signed an agreement with Société Miniere George Montagnat (SMGM) in August 2007 to establish a joint venture in New Caledonia that would own a nickel mine, mine laterite ore in the southeastern

region of New Caledonia, and supply the nickel ore to GPNL's planned high-pressure acid leach (HPAL) facility in Gladstone, Australia. According to the agreement, GNPL would own 49% of the mining joint venture (Gladstone Pacific Nickel Ltd., 2007).

Structure of the Mineral Industry

In 2007, the mineral industry of New Caledonia comprised seven nickel-cobalt mining companies, a nickel ore processing company, a cement grinding company, and several foreign companies engaged in exploring and developing nickel-cobalt mines and nickel-cobalt ore processing facilities. The major nickel-cobalt mining companies were SLN, SMSP, and SMT. SLN operated five open pit saprolite (garnierite) nickel mines at the Kouaoua, the Nepoui-Kopeto, the Poro, and the Tiebaghi pits in North Province, and at the Thio open pits in South Province. SMSP operated four limonite (laterite) nickel mines at the Boakine, the Poum, the Poya, and the Quaco deposits in North Province. SMT operated two limonite nickel mines at the Moneo and the Nakety deposits in North Province (table 2). According to Institut de la Statistique et des Études Économique of New Caledonia, the number of employees engaged in nickel mining and nickel ore processing in 2007 totaled 3,623; of those, 2,101 were engaged in nickel mining and 1,422 were engaged in ferronickel and nickel matte manufacturing (Institut de la Statistique et des Études Économique, 2008a)

Outlook

Investment in the nickel industry during the past 5 years is expected to boost the nickel industry's mining and processing capacity by 2009. The construction work on the Goro nickel project of CVRD-Inco is expected to be completed by the end of 2008 and the first nickel production could start as early as 2009. The startup date of the Goro nickel project, however, could be delayed by New Caledonia's indigenous Kanak groups and environmental groups, which had tried to stop construction of a land-based waste dump in a biologically sensitive area in late 2007.

Xstrata, which acquired Falconbridge's Koniambo nickel-cobalt project in 2006, started construction of its $3.8 billion nickel mining and ferronickel processing plant in North Province in February 2007. The plant, which is projected to have a capacity of 60,000 t/yr of nickel in ferronickel, is expected to begin production in 5 to 6 years.

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TABLE 1
NEW CALEDONIA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2003	2004	2005	2006	2007[p]
Cement		100,171	114,762	119,302	133,074 [r]	134,000 [e]
Nickel:						
Ore:						
Gross weight	thousand metric tons	6,625	7,033	6,445 [r]	6,179 [r]	7,508 [e]
Co content[3]		2,602	2,726	1,769	1,900 [e]	1,920 [e]
Ni content		112,013	118,279 [r]	111,939	102,986 [r]	125,211
Ferronickel:						
Gross weight		167,208	151,296	155,800 [r, e]	162,000 [r, e]	145,000 [e]
Ni content		50,666	43,016	46,738	48,723	44,954
Nickel matte:						
Gross weight		15,309	17,200	18,100	19,300 [r, e]	19,500 [e]
Ni content		10,857	12,164	12,838	13,655	13,860

[e]Estimated; estimated data are rounded to no more than three significant digits. [p]Preliminary. [r]Revised.

[1]Table includes data available through May 30, 2008.

[2]In addition to the commodities listed, crude (unspecified) and crushed stone, construction sand, and silica sand for metallurgical use are produced, but available information is inadequate to make reliable estimates of output.

[3]Includes only cobalt contained in mined limonite.

Source: Institute de la Statistique et des Études Économique, New Caledonia, Series Statistiques—Mine—Metallurgie, March 2008; U.S. Geological Survey, Minerals Questionnaire, 2003-06. British Geological Survey, World Mineral Production 2002-05; World Bureau of Metal Statistics, World Metal Statistics, February 2008; and International Nickel Study Group, World Nickel Statistics, Monthly Bulletin, April 2008.

TABLE 2
NEW CALEDONIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2007

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity[e]
Cement	thousand metric tons	Société des Ciments de Numbo	Noumea	150
Cobalt				
In ore and concentrate, Co content		Société Le Nickel (SLN) (Eramet Group of France, 60%; Société Territorial Caledonian de Participation Industrielle, 30%; Nisshin Steel Co. of Japan, 10%)	Kouaoua, Nepoui-Kopeto, Poro, Tiebaghi, and Thio mining centers	2,000
Do.		Société Minière du Sud Pacifique (majority owned by the government of Northern Province, New Caledonia)	Boakaine, Ouaco, Poum, and Poya mining centers	1,000
Nickel:				
In ore and concentrate, Ni content		Société Le Nickel (SLN)	Kouaoua, Thio, Nepoui-Kopeto, Poro Tiebaghi, and Thio mining centers	61,500
Do.		Société Minière du Sud Pacifique, including Nickel Mining Corp., and Nouméa Nickel	Baokaine, Ouaco, Kouaoua, Poum, Poya, and Nakety mining centers	35,800
Do.		Société de la Tontouta (Ballande Group)	Moneo and Nakety mining centers	16,000
Do.		Other small nickel mining companies, which include Société Minière George Montanant SA, GEMINI S.A.	Moneo and Nakety-Bogota, and Tontouta mining centers	7,300
In ferronickel, Ni content		Société Métallurgique le Nickel-Société Le Nickel (SLN)	Doniambo, Noumea	60,000
In nickel matte, Ni content		do.	do.	15,000

[e]Estimated. Do., do. Ditto.