

By a Special Contributor

his southwest Pacific nation comprises three regions - the Northern and Southern provinces of the 400 km Grande Terre Island, and the Loyalty Islands (Ouvea, Lifou and Mare). An independence referendum in 1998 has paved the way for increased autonomy for the French territory, leading to a further referendum on full independence within 20 years. In the meantime, the French Government will

control only defence, the police and monetary issues.

Nickel is the mainstay of the local economy, and New Caledonia is the world's fourth largest producer of mined nickel after Canada, Russia and Indonesia, and the biggest producer of ferronickel. The country possesses an estimated 25% of the world's known nickel resources, and its laterites have much higher

nickel grades than those in Australia. The country's second most important industry is tourism. French company Eramet is the dominant producer through its subsidiary Société Le Nickel (SLN), which operates four open-pit mines and the Doniambo smelter at Nouméa in the south of the island. After a restructuring of Eramet in July 1999 (incorporating privatisation), SLN is now owned 60% (previously 90%) by Eramet, 10% by Japan's Nisshin Steel and 30% by a new company, STCPI, which represents the indigenous Kanak people.

Eramet's nickel operations in New Caledonia date back to 1880 with the formation of SLN, which was established to develop and exploit nickel-rich deposits in the colony. The subsidiary's Doniambo smelter processes around 3 Mt/y of nickel ore from SLN's mines at Thio, Kouaoua, Népoui-Kopéto and Tiébaghi, as well as from the Etoile du Nord deposit at Koumac, which is worked by Société Minière Georges Montagnat. The high-grade Tiébaghi mine is building up to a full capacity of 20,000 t/y of contained nickel by 2003. The company's smelter mainly produces ferronickel, which accounts for 80% of production, and the balance is in the form of matte. Eramet converts matte from Doniambo into high-purity nickel, and nickel and cobalt salts, at a refinery at Sandouville in France. A fifth rotary calcination kiln was constructed at

Doniambo in 1998 at a cost of FF350 million, lifting metal output capacity to a current 62,000 t/y. However, production in the March quarter of 2000 fell 3% to 12,502 t after a strike on SLN's nickel mines. Employees were protesting against a restructuring plan by SLN, which they believed would lead to job losses. Doniambo operated at 70% of capacity for several weeks before normal production resumed in mid-April 2000. Output recovered during the second half, with full-year output reaching 57,463 t, compared with 56,642 t in 1999. Eramet has also now completed a feasibility study to lift capacity to 70,000 t/y by 2004 at a cost of €150 million. A decision is expected by mid-2001.

The other main nickel producer in New Caledonia is Société Minière du Sud Pacifique.

SMSP is majority owned by the Northern Province and operates five limonitic nickel mines. The company recently acquired Nickel Mining Corp., whose main asset was the Kouaoua deposit.

SMSP's ore is delivered under contract to Billiton's Yabulu nickel refinery near Townsville on Australia's east coast. In the mid-1990s, SMSP and Falconbridge announced plans to construct a second nickel smelter in the north of the island. To support this idea, in 1997 the government proposed that Eramet should exchange its Koniambo deposit for SMSP's lower-grade Poupou deposit.

After considerable controversy, Eramet's shareholders agreed to the swap, and the pre-feasibility study for Koniambo is scheduled to be completed by the end of 2001, with production expected to commence in 2006.

The resource estimate was raised in February 2001 to 151 Mt at an average grade of 2.58% Ni. (SMSP suffered a tragedy late last year when its president, Raphael Pidjot, died in a helicopter crash which killed seven people.)

Other mining operations in New Caledonia centre on the operations of Canada's Inco, whose assets include the 55%-owned Tiébaghi chromite deposit and the Pomalaa East nickel deposit, which has a mineable reserve of over 50 Mt grading 1.9% Ni. Inco also owns 85% of the Goro lateritic nickel project in Southern Province in a joint venture with France's Bureau de Recherches Géologiques et Minières (15%). Following a detailed feasibility study, completed in March 1997, involving SNC Lavalin and two other engineering firms, the partners spent some US\$50 million on constructing a 12 t/d integrated pilot plant and engineering work related to proprietary acid pressure leaching and solvent-extraction technology. In April 2001, Inco announced that the trials had been successful and a full-scale nickel-cobalt plant would be constructed at a cost of US\$1.4 billion. In March 2001, Inco raised US\$200

million in a bond issue as part of the necessary financing but is seeking a suitable partner to share the cost. Production at Goro is expected to commence in late 2004 with an annual capacity of 54,000 t nickel and 5,400 t cobalt. The end products will be nickel oxide (78% Ni) and cobalt carbonate. Cash operating costs, after allowing for by-product credits, are estimated at less than US\$1.00/lb nickel. The authorities have granted Goro a 15-year 100% tax holiday, followed by a five-year 50% tax holiday. The new plant will provide around 800 permanent jobs and a further 1,500 indirectly. Goro has total resources of 370 Mt averaging 1.6% Ni and 0.17% Co, including proven and probable reserves of 47Mt. Vancouver-based Argosy Minerals (which merged with its partner, Perth-based Calliope Metals, in May 1999) has a joint-venture partnership with Société des Mines de la Tontouta (SMT) at the Nakéty lateritic nickel-cobalt project, located 3 km from Bogota, in the Canala area. The resource at Nakéty is estimated at 88 Mt grading 1.47% Ni and 0.11% Co. Argosy recently acquired the right to acquire further concessions at Bogota from SMT. These concessions, covering almost 54 km<sup>2</sup>, are thought to contain a further 140 Mt grading 1.5% Ni and 0.13% Co. This combined potential was recognised by

Norilsk Nickel in July 2001 when the Russian company announced that it will acquire what is expected to be a majority interest in Nakéty-Bogota. A mining output of some 3.6 Mt/y is envisaged, with annual output from a high-pressure acid leach process of some 52,000 t nickel and 3,650 t cobalt, with a capital cost of at least US\$600 million.

Exploration activity in New Caledonia has been considerable in recent years. Billiton is active through QNI (which it acquired in late 1997), and its interests include a joint venture in the south of New Caledonia with Noumea Enterprises. Other companies include Caledonian Pacific Minerals (CPM), which in 1999 discovered anomalous gold in soil samples in the Nakéty area as part of a joint venture with Base Metals Exploration. In December 1999, Coronation International Mining

Corp. made a takeover offer for 60% of CPM.