

## VIETNAM

*By a Special Contributor*

Vietnam is a long, sinuous country in southeast Asia covering some 330,000 km<sup>2</sup>, roughly the size of Norway. It possesses a 3,444 km long eastern coastline extending from the Gulf of Tonkin in the north to the South China Sea in the far south. It shares a border with China to the north and with Laos and Cambodia to the west. There are central highlands, mountainous areas in the far north and northwest, and the extensive delta of the Mekong River in the far south. The climate is tropical in the south and monsoonal in the north.

The country is divided into 64 provinces and city administrations, and the main urban centres are Hanoi, the national capital in the north (with a population of three million), and Ho Chi Minh City (formerly Saigon) in the south (population: six million). With some 82 million people in total, the country is densely populated, and almost two-thirds of the labour force is involved in agriculture. Until 1989, Vietnam was able to rely on Soviet aid but since then it has had to move away from a centrally-planned economy and to introduce reforms to encourage private enterprise and foreign investment. For the past three years the industrial sector has been growing rapidly, with an emphasis on exports. GDP is growing at an annual rate of about 7%, and in 2003 GDP purchasing power parity *per capita* is estimated to have been about US\$2,500. By sector, agriculture contributes 24% of GDP, industry 37% and services 39%. Fossil fuels provide about 44% of the country's electricity requirements, the balance being provided by hydropower.

Exports, mainly crude oil, marine products, rice, coffee tea and rubber, and manufactured goods such as shoes and clothing, were worth close to US\$20 billion in 2003. Imports, however, cost about US\$22.5 billion. The main trading partners are fellow members of ASEAN, the US and Japan. The major investors to date have been from Singapore, Taiwan, Japan, South Korea, Hong Kong, China and the US. Foreign direct investment is increasing and mainly directed towards the industrial and construction sector. There is still a degree of experimentation and opacity, however, in the government's policy on foreign investment.

Vietnam's mineral resources, apart from offshore oil and gas, include phosphate, coal, bauxite, base and precious metals, and a variety of industrial minerals. More than 5,000 mineral occurrences have been identified. Five broadly-defined metallogenic epochs have been recognised and, in general, the younger the setting the more abundant the deposits. Only a few are hosted by Precambrian rocks, principally iron, gold and graphite. The early to mid-Palaeozoic contains small deposits of iron ore, lead-zinc and large deposits of potash. Larger deposits of iron ore, ilmenite, gold, nickel-copper and bauxite were formed during the early Carboniferous/late Triassic.

The principal resources of tin, tungsten, antimony, molybdenum, gold, rare earths, fluorite and kaolin, formed during the late Mesozoic to early Cenozoic, the tin largely related to late Mesozoic granitic intrusions. Epithermal gold is associated with Middle Triassic volcanic units, and some bauxite and alluvial chromite with Neogene-Quaternary sedimentary deposits.

Mineral rights in Vietnam are based on a licence system, rather than claim-staking. Mineral legislation has been developed partly with Western technical assistance but although there is an adequate legislative foundation to build upon, it has been largely untested, having been in effect for only a few years.

Of concern to foreign investors is that the mineral regime confers on the exploration licence holder the 'special right' to apply for an extraction licence for the area covered by the exploration licence but does not provide a clear definition of the term 'special right'. Hence, investors are left second-guessing whether they have an 'exclusive right' to mine what they have discovered, despite strong assurances from policy makers that they do.

Another concern is that exploration expenses do not constitute foreign investment in Vietnam; a foreign investment licence can only be obtained at the extraction stage. Given this lack of investment recognition at the exploration stage, exploration projects are not entitled to any of the benefits offered by the Foreign Investment Law. For instance, without an investment licence, an investor is not allowed to carry forward losses from the exploration stage to the extraction stage, losing tax incentives; also, the authorities do not recognise the foreign investor's exploration investment as part of its capital contribution at the extraction stage. At present, new foreign entrants to the exploration sector are being discouraged, pending a revision of the rules and regulations, although existing projects are not affected.

### **Mining sector**

The principal mineral activity at present is coal mining in the north of the country where there is a total resource of anthracite in excess of 20,000 Mt, including proven reserves of 3,600 Mt. Vietnam produced around 20 Mt of coal in 2003 and exports, mainly anthracite were estimated at 5.5 Mt. The government is promoting the construction of coal-fired power plants and the 100 MW Na Duong plant is due to come on stream in this year.

All mines are controlled by Vinacoal, a government umbrella organisation, which has been given extensive areas to explore and develop anthracite in the Quang Ninh region, where reserves are of the order of 4,000 to 4,500 Mt. Expansion and development work is being undertaken in the Khe Tam, Nui Beo, Mao Khe, Cao Son, Yen Tu, Khe Cham and South Ha Tu mines, all located in the northeast, and Vinacoal has signed a contract with Kopex of Poland to equip three new underground mines, with construction commencing in 2004. Also, considerable investment has been proposed for coal-processing facilities, and the ports of Cua Ong and Hon Gai have been developed and expanded.

The country's oil production increased by 4% in 2003 to 18 Mt, according to BP's Statistical Review of World Energy, and remaining proved reserves are estimated at 300 Mt.

At the end of 2003 it was announced that Aluminium Corp of China (Chalco) had agreed to join a Chinese Government initiative to develop a bauxite deposit in Dak Nong Province in the central highlands of Vietnam, in co-operation with the Vietnamese Government. Chalco will develop the operation in conjunction with China Non-Ferrous Mining and Construction Group (CNFMCG) and a Vietnamese company. The project could cost US\$1.35 billion but a prefeasibility study is being updated.

In January 2003, Canadian-based explorer Tiberon Minerals Ltd completed a prefeasibility study for its Nui Phao polymetallic project located 90 km northwest of Hanoi. Nui Phao contains an estimated 25.07 Mt at an average grade of 0.68% equivalent  $\text{WO}_3$  in the measured category, an indicated resource of 35.45 Mt at 0.54% and an inferred resource of 27.42 Mt at 0.50%. Metallurgical test work conducted by Lakefield Research has achieved better results than those obtained during the pre-feasibility study. The study estimated a capital cost of US\$140 million for an open-pit mine processing 3.5 Mt/y of ore over 16 years. Tiberon currently envisages annual production of 4,850 t of tungsten, 220,000 t of fluorspar, 6,400 t of copper, 3,000 oz of gold and 950 t of bismuth.

In February 2004, the company announced the receipt of the investment licence and the formation of the Nui Phao Mining Joint Venture Co Ltd. It is expected that the mining licence for the project will be received by the end of 2004. It is proposed that the project be funded 70:30 debt to equity. In August 2004, Tiberon announced the Banking Group, consisting of Fortis and WestLB, for the US\$100 million project financing. A final bankable feasibility study is scheduled for completion in the first half of 2005.

Tiberon has entered into an agreement to purchase a 49% interest in Primary Metal Inc from UK-based Avocet Mining plc. Primary's main asset is its wholly-owned subsidiary Beralt Tin and Wolfram (Portugal) SA, which operates the Panasqueira tungsten mine in Portugal. The acquisition will give Tiberon access to expertise as it proceeds with plans to develop Nui Phao.

Vancouver-based Asian Mineral Resources Ltd (AMR), listed in Toronto on the TSX Venture Exchange, has a 70% interest in, and is operator of, the Ban Phuc sulphide nickel project. The project area, located 160 km west of Hanoi in Son La Province, covers 150 km<sup>2</sup> and contains a number of nickel occurrences hosted by ultramafic rocks. The Ban Phuc deposit was first discovered and explored by Vietnamese geologists in the early 1960s, when extensive work, including exploratory shafts, adits and cross-cuts were completed. AMR estimates that there are 100,000 t of contained nickel as massive and disseminated sulphides. A major diamond drilling programme is under way as part of a feasibility study and drill intersections have included 38 m at 4.7% Ni and 1.75% Cu from a depth of 20 m. The deposit is open along strike in both directions and at depth.

Recently, AMR has signed a memorandum of understanding with the central government's mining arm Mineral Development Co Ltd to acquire the latter's 20% equity interest in the project. The remaining 10% interest is held by AMR's provincial government partner, Son La Engineering and Construction Co Ltd. AMR hopes to commence construction and mine development during 2005.

In central Vietnam, Toronto-based Olympus Pacific Minerals Inc continues with its exploration and development programmes for two gold projects, both within 100 km of the port city of Danang. At its 80%-owned Bong Mieu property, Micon International Ltd is carrying out a scoping study for open-pit development of the Ho Gan deposit, where there are measured and indicated resources of 687,000 t averaging 1.98 g/t Au. Two other deposits have been identified, Ho Ray and Nui Kem, and the company has recently announced the discovery of Thac Trang, some 400 m east of Ho Ray, where the gold is hosted in a veined and sulphide-bearing skarn. Exploration is being continued here and elsewhere at Bong Mieu to investigate zones of high-grade mineralisation.

Olympic Pacific also holds 100% of New Vietnam Mining Co, which has an 85% interest in the Phuoc Son gold project where Micon is completing a pre-feasibility study for the underground development of the Bai Dat and Bai Go deposits. The deposits are located about 1,000 m apart. Bai Dat has measured and indicated resources of 165,000 t at 19.38 g/t Au and Bai Go 153,000 t at 14.32 g/t Au.

UK-based Triple Plate Junction plc listed on AIM in January 2004 and is focusing on a major gold-mineralised system at Pu Sam Cap in the northwestern province of Lai Chau where it is seeking exploration licences covering up to 408 km<sup>2</sup>. The location is described as a "favourable tectonic triple-plate collision/rift zone" containing a young alkaline intrusive complex characterised by explosive volcanism, including calderas and breccias. Bulk tonnage, lower-grade disseminated epithermal gold and porphyry copper-gold deposits are the targets. Newmont Mining Corp's subsidiary Newmont Vietnam Pty Ltd is a significant share holder in the Pu Sam Cap venture. The licences have been approved by the Prime Minister of Vietnam and the company is poised to commence exploration in the second half of 2004, as soon as the licences are formally issued.