THAILAND

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In 2002, Thailand achieved its best economic performance since the 1997 currency crisis. GDP grew by 5.2%, up from 1.9% in the previous year. Purchasing power parity was US$429 billion or US$6,900 *per capita.* Moreover, in the final quarter, GDP expanded by 6.1%. Thailand derives around 11% of its GDP from agriculture, 40% from industry and 49% from services. Household consumption rose by 5.9% last year, investment by 7.8%, exports by 12.2% and imports by 13.6%. Government expenditure decreased by 1.1% although spending exceeded the US$19 billion budget by some US$2.0 billion. Thailand is an important exporter of computers and electrical appliances and its total exports last year were worth around US$67 billion compared with imports of US$58 billion.

The accelerated production growth was driven by the non-agricultural sector, up by 7.5%, with particularly strong growth in manufacturing (10.6%); financial services (9.6%); transport and communication (7.9%); electricity, gas and water supply (7.1%); and hotel and restaurants (5.7%). In contrast, the agricultural sector contracted by 2.7%. Production in the mineral resources sector grew by 7.3%, mainly reflecting higher crude oil production, particularly from the Benjamas field (see table).

Mineral production

Zinc

Padaeng Industry Public Co. Ltd (PDI) is Thailand's only zinc miner and smelter, with a capacity to produce 100,000 t/y of zinc metal. In 2002, the company reduced operating costs and improved productivity, with output reaching 105,148 t and sales amounting to 105,945 t, slightly higher than in 2001. However, revenue for 2002 were lower than expected because of the further decline in zinc prices. The world average price was only US$779/t compared with US$886/t in the preceding year. In addition, the Thai baht appreciated against the US dollar by 3%. As a result, sales revenues declined by 15.5% and there was a net earnings loss of Bt29.1 million or Bt0.13/share compared with a net profit of Bt1.48/share in 2001.

At year-end, the Padaeng mine at Mae Sot possessed a resource of 4.82 Mt averaging 12% Zn, representing 578,400 t of metal. Reserves are sufficient to sustain an expanded mining operation of over 360,000 t/y of ore (principally zinc silicate) for the next ten years. At the Hualon mine, also at Mae Sot, the all-zinc sulphide resource (measured and indicated), as at December 31, 2002, amounted to 295,000 t at 6% Zn.

No exploratory drilling was carried out in the Mae Sot area during the year but the leases are believed to have high potential for additional zinc silicate ore, and exploration drilling was expected to resume this year. A new mining lease

covering 39.4 ha was granted during 2002 and should give access to additional ore at Mae Sot beneath the existing pit.

Regional exploration was conducted by PDI's subsidiary, Puthep Co. Ltd in joint venture with Pan Australian Resources. The partners intend to develop the copper deposits PUT 1 and PUT 2 near Loei. PUT 1 contains an estimated resource of 80 Mt at 0.5% Cu, and PUT 2 possesses 32 Mt at 0.4% Cu. The Loei copper project is at the feasibility stage.

Elsewhere, PDI continued to assess zinc opportunities in Laos and Vietnam.

Tin

The main tin mining regions in Thailand are Kanchanbari, Phuket and Phang Nga. By the end of 2002, only some 30 out of 145 tin mines were operating, most having closed as a result of high production costs exacerbated by a complex and expensive tax structure. The country's single tin smelter is located on Phuket and operated by Thaisarco. It produced 18,000 t of tin in 2001 and production for 2002 was expected to rise to 20,000 t. The smelter does not rely solely on domestic supplies and treats substantial quantities of imported concentrates.

Gold

Kingsgate Consolidated NL of Australia commenced gold production at its Chatree gold mine during 2002 and in the financial year to June 30, 2003 it produced 155,000 oz at a cash operating cost of US$95/oz. For the 2003-04 year, output is expected to be lower as a result of major stripping operations, at around 125,000 oz, with costs nearer US$145/oz. Production is scheduled to increase again in subsequent years. There is an active exploration programme, and reverse circulation drilling within 1 km of the mine site has identified gold-bearing epithermal quartz-carbonate stockworks and fault breccia extending for 1,300 m over a width of 100 m. Better intersections of 4-5 m widths averaged between 4.0 g and 8.2 g/t Au.

Coal

Towards the end of the year, Thailand's largest coal producer, Banpu plc announced that it was increasing its interest in the Indonesian coal producer, PT Indominco Mandiri, to 100% by purchasing the 35% interest not already owned, from PT Indocement Tunggal for US$10.5 million. The acquisition of Indominco has boosted Banpu's total annual coal production from 8.7 Mt to 17.7 Mt and its reserves to 130 Mt out of a total of 180 Mt (including 14 Mt of lignite in Thailand).

In Thailand, Banpu has entered into a 50:50 joint venture with CLP Powergen Southeast Asia to build a 1,400 MW coal-fired power station at Rayong. The total cost is estimated at US$1.3 billion and Banpu is reported to be seeking to reduce sell off 15-25% of its interest.

Another coal-fired power plant near the municipality of Hin Krut about 300 km southwest of Bangkok has provoked fierce local opposition on environmental/ecological grounds. Tomen Corp. of Japan would supply the

plant with 4.0 Mt/y of high-quality, low-sulphur coal from Oakbridge Ltd in Australia, in which Tomen holds a minority (16.5%) interest.

Gypsum
In 2002, contractors exported approximately 4.4 Mt of gypsum worth around Bt2 billion. Exports went to 19 countries but most was shipped to Indonesia, Malaysia, Japan, Vietnam, South Korea and Taiwan. Marketing of gypsum, however, was unsatisfactory, and a number of contractors realised low product prices and were barely profitable. The Department of Mineral Resources, the Mining Industry Council and the contractors are addressing the marketing problem through the Gypsum Exportation Centre.

Potash developments
Toronto-based Asia Pacific Resources Ltd (APR) has identified two large potash deposits at Somboon in the Udon Thani region of northeastern Thailand, Udon North and Udon South. A feasibility study completed in 1998 identified Udon South as one of the highest-grade potash deposits in the world. Last year, the Thai parliament approved important Amendments to the Minerals Act that were highly significant for the owner of the potash resource, Asia Pacific Potash Corp. (APPC) in which APR holds 90% and the Government of Thailand 10%.

The Amendments permit underground mining to a depth greater than 100 m without requiring the consent of the surface-rights owners, and also remove the limit of 48 ha for the maximum size of a mining lease. The rights of local communities are safeguarded through a requirement for a public consultation process and compensation in the event of any damage incurred by mining activity. Local communities at Somboon have expressed concerns about soil contamination and hypersalinity if mining goes ahead, and the Amendments to the Mining Act were questioned by a minority group of Senators as being in breach of the Constitution but a court ruling in November 2002 found that the Mineral Resources Bill was not in breach of the Constitution.

Results of a scoping study for Udon South carried out by AMEC/Ausenco and SRK (Australia) Pty Ltd, and announced in October 2002, estimate the total resource at 302 Mt averaging 23.5% K_2O, including 30 Mt at 26.8% K_2O in the measured and indicated category within a single 7.2 m thick seam. The potash occurs as sylvinite in a broadly horizontal bed some 350 m below surface.

The project is deemed viable using a phased development of an underground mine, starting at 1.0 Mt/y of potash and scaling up to 2.0 Mt/y. The project could create 900 permanent jobs and 4,000 indiectly.

DMR activities
Exploration by the Department of Mineral Resources (DMR) has included the further investigation of the gold occurrences in the vicinity of Pi-Log where gold occurs with cassitierite and wolframite in sediments in streams draining the nearby mountainside. Environmental constraints have cast doubts on any proposals to construct a gold-processing plant in the vicinity.

Since the 1997 economic crisis, output of iron and steel products in Thailand has declined and imports have grown as a consequence The DMR is co-operating with industry in efforts to improve metals production through the establishment of the Thailand Institute of Iron and Metal. This recovery and improvement project has a duration of two years and the objective is to study and analyse the country's iron and metal production and examine marketing issues.

The DMR has also established a project to examine methods of improving the quality of metals used in automobile manufacture. The objective is to establish Thailand in the Asian market as a leading producer and exporter of automobiles - the 'Detroit of the East'. Thailand is favourably located as the 'gateway' to developing countries such as Laos, Cambodia, Vietnam and Myanmar, where growth in demand for cars is high.

Mineral Production (tonnes unless stated otherwise)

	2000	2001	2002
Tin concentrate	2,363	2,383	1,348
Tungsten	1	2	-
Lead ore	24,760	800	6,500
Antimony ore	176	90	23
Manganese ore	225	45	-
Iron ore	90	50	57
Gypsum ('000 t)	5,830	6,533	6,337
Lignite ('000 t)	17,714	19,617	19,508
Fluorite	4,745	3,020	2,271
Marl	7,290	7,755	83,135
Zinc ore	164,093	88,664	151,575
Natural gas (1 Mft^3)	708,958	692,574	729,192
Condensate (1,000 Bbbl)	73,113	18,899	19,609
Crude Oil (1,000 Bbbl)	20,057	22,043	27,209