

Indonesia

Bauxite-Alumina

KENDAWANGANG

Location: Ketapang Regency, West Kalimantan.

Ownership: ANTAM TBK PT 100%.

Management office: Alwingsyah Loebis, chief operating officer, Antam Tbk PT, Gedung Aneka Tambang, Jl Letjen TB Simatupang No 1, Lingkar Selatan, Tanjung Barat, Jakarta 12530, Indonesia. Ph: (62 21) 789 1234. Fax: (62 21) 789 1224.

Resources/reserves: At December 2001, the total bauxite resource at Kendawangang was estimated at 42 Mt (wet).

Comment: Antam's Kendawangang prospect was covered by an exploration mining licence covering an area of 15,100 ha. Site observation showed the bauxite sediment in this area was the high-iron grade bauxite type characterised by a reddish brown colour and compact ore. Previous exploration by PT Alcomin had found washed bauxite reserves. Investigative activities in 2000 focused on confirming Alcomin's data through random sampling. Test wells with an average distance of 400m were used. The results of site observation on 59 test wells showed the deposit to be very profitable in respect of anticipated mining costs. By the end of 2000, Antam had calculated an inferred resource. Exploration was continuing in 2001. In 2001/02, Antam explored the Kendawangang prospect using test pitting on systematic grids of 100m x 100m with targeted indicated Alumina resources using a cut-off grade of 47%. No further details of the exploration program were available at end 2003.

✕ KIJANG

Location: Bintan Island, Sumatra.

Ownership: ANTAM TBK PT 100%.

Management office: Alwingsyah Loebis, chief operating officer, Antam Tbk PT, Gedung Aneka Tambang, Jl Letjen TB Simatupang No 1, Lingkar Selatan, Tanjung Barat, Jakarta 12530, Indonesia. Ph: (62 21) 789 1234. Fax: (62 21) 789 1224.

Mine office: Bauxite Mining Business Unit, Kigang, Tanjungpinang 29151, Riau Kepulauan, Indonesia. Ph: (62 771) 21 177. Fax: (62 771) 22 819.

Geology: The bauxite deposits were formed during a long period of weathering of the bedrock under tropical conditions, which has resulted in a lateritic profile enriched in alumina in the form of trihydrate bauxite (gibbsite). The deposits form low hills with either a covering of small trees or grassy scrub and thin soil cover to a maximum of 0.30m thickness. The bauxite deposits vary from 1.5m-6m thick and average about 4m, resting directly on the bedrock.

Resources/reserves: At May 2001, proven reserves of chemical grade red bauxite were 2.58 Mt at 7.1% silica, 10.5% iron oxide, 0.75% titanium dioxide and 52.9% aluminium trioxide (cut-off grade 10.5% silica, 20% iron oxide, 45% aluminium trioxide). Total measured resources of chemical grade white bauxite were 302,300t at 9.5% silica, 2.4% iron oxide, 0.17% titanium dioxide and 58.1% aluminium trioxide (cut-off grade 15% silica, 3% iron oxide, 48% aluminium trioxide).

Operation: Open cut.

Treatment: Salt-water washing.

Plant capacity: 850,000 tpa.

Production history:

Period to	Amount	Comment
12/31/2001	1.24 Mt	wet bauxite
12/31/2002	1.28 Mt	wet bauxite
12/31/2003	1.30 Mt	wet bauxite

Comment: Bauxite had been mined and exported from Bintan Island since 1935. Antam took control of the operation in 1968 and had planned to close it during 1998, but instead gave Kijang a three-year reprieve when it decided to mine the 2.54 Mt Mount Lomesa deposit, which lay in the north of Bintan Island. A further three years was then added to Kijang's life when Lomesa's resources were upgraded to reserve status. Previously, mining had occurred in three areas - Pari and Galang (each with a washing plant) and Temborak, which supplied bauxite direct to the main stockpile area. The mine areas were spread over a number of coastal sites and ore was barged, where necessary, to the main stocking and loading facility. Antam used contractors to open-pit mine and wash bauxite ore for export to Japan and China. Kijang infrastructure included various access roads, an international harbour for shipments up to 40,000t, a hospital, schools and housing. The island had a small airstrip but access was normally by fast ferry from Batam Island to Tanjung Pinang, about 20 km west of Kijang. Indonesia's bauxite production continued to increase in 2001 to 1.24 Mt from 1.15 Mt in 2000 after significant declines in 1995-1997. Export volume, however, declined slightly to 1.22 Mt from 1.24 Mt in 2000, while export earnings dropped slightly to US\$13.36 million from US\$13.44 million in 2000. Antam, Indonesia's sole producer of bauxite from its open pit mines in the Kijang area, marketed bauxite only to Japan and China. Antam conducted exploration on the area during September 2003. No significant deposit was observed during the quarter. In November 2003, Antam was negotiating with a Japanese buyer (to sell Kijang bauxite) but needed to calculate whether the margin was economical. At late 2003, it was estimated that the Kijang mine, which had been scheduled to close in 2004, would be depleted and closed in two to three years. Kijang reportedly had around 3 Mt (wet) of bauxite reserves left in the ground.

Status: Scheduled for closure around 2006.

📄 TAYAN (includes Munggu Pesar)

Location: 95 km east of Pontianak, south of Tayan township, West Kalimantan.

Ownership: ANTAM TBK PT 100%.

Management office: Alwingsyah Loebis, chief operating officer, Antam Tbk PT, Gedung Aneka Tambang, Jl Letjen TB Simatupang No 1, Lingkar Selatan, Tanjung Barat, Jakarta 12530, Indonesia. Ph: (62 21) 789 1234. Fax: (62 21) 789 1224.

Geology: The Tayan bauxite deposit, which covers an area of 36,410 ha, conforms to the normal pattern of bauxite formation as part of a laterite sequence derived from the prolonged weathering of bedrock under tropical, humid conditions. The bauxite is mainly present as gibbsite. Locally the bedrock consists of igneous gabbro which on weathering gives rise to bauxite which is relatively high in iron. It occurs as an essentially horizontal deposit which blankets the top of the rolling hills and has been locally eroded in the deeper cut valleys. The bauxite layer has an average thickness of 2.9m and is covered by overburden of about 3m thickness.

Resources/reserves: At March 2001, measured-indicated resources on the proposed CoW were 36.13 Mt at 48.4% aluminium trioxide, 12.9% silica (3.4% reactive silica), 12.5% iron oxide and 0.9% titanium dioxide for Tayan. Indicated resources on the KP proposed for Tayan were 8.44 Mt at 45.9% aluminium trioxide, 22% silica (3.4% reactive silica), 9.1% iron oxide and 0.8% titanium dioxide. Indicated resources on the KP proposed for Munggu Pesar were 46.55 Mt at 46.8% aluminium trioxide, 9.4% silica (3.0% reactive silica), 17.2% iron oxide and 1.3% titanium dioxide.

Comment: The Indonesian Government declared the Tayan-Sunggu areas as a special economic region, with aluminium production to become its core industry. Antam had been studying the Tayan area since 1991 and planned to develop the deposit to replace bauxite production from its Kijang operation, which had been due to shut down in 2001 (the mine life at Kijang was subsequently extended). Antam's plans for Tayan involved the exploitation of bauxite and production of chemical grade alumina. Facilities to be built included a washing plant, bayer plant, fine-hydrate plant, white hydrate plant, calcining plant and utility plant. Construction was expected to take 19 months followed by nine months of commissioning. The mining license covered almost 13,000 ha. The Tayan chemical grade alumina project was expected to cost some US\$150 million for development. Negotiations for offtake agreements with Japanese aluminium producers were underway in 2004. In principle, government approval for the application of the Eighth Generation CoW had been granted, which included two as yet unnamed international partners. Financing arrangements were still being considered. The project's main hurdle was the legal aspect as there was no certainty regarding the schedule of finalising the CoW nor the new mining law. In early 2001, an internal review of the initial project feasibility study was underway. Throughout the year, infill pitting closed down to 25m by 25m to increase the definition of the resource estimate. In 2002, Antam was continuing its efforts to develop its Tayan mining concession. The area had been estimated to contain 117 Mt of bauxite based on initial exploration results. Foreign investors in the Tayan aluminium project were awaiting the establishment of a JV company with Antam. In the proposed arrangement, Antam would own 51%, with the remainder to the private-sector partners, reportedly from Japan. Besides partial ownership of the project, the prospective foreign investors also desired local government assurances of support and non-interference, following their increased authority to manage their own natural resources. If Tayan produced up to 5 Mt of bauxite annually, the mining project would operate for 25 years. In 2002, Antam spent Rp4.5 billion on Tayan development. In 2003, government approval had been granted in principle for the application of the Eighth Generation CoW; an internal review with the prospective strategic partners, specifically in anticipation of changes in the economy and laws, had been undertaken; an environmental impact analysis had been completed; and physical field activities such as project socialisation, negotiations and preparing and clearing the land for the location of the main facilities had taken place. In September 2003, Antam conducted exploration activities on the permit with infill test pitting to increase the mineral resources classifications. In November 2003, the company announced that its feasibility study of the Tayan bauxite reserves in West Kalimantan was expected to be completed by December. No confirmation of when the project was due to begin had been publicised and Antam said that it was still seeking foreign partners to help finance development of the Tayan deposit. The company indicated that uncertainties regarding the Indonesian mining industry was the biggest stumbling block in securing foreign investment.

Status: Seeking foreign investors.

Coal

✕ ADARO (includes Paringin, Tutupan and Wara)

Location: Tanjung district, Hulu Sungai Utara and Tabalong regencies, South Kalimantan.

Ownership: ADARO INDONESIA PT 100%.

Management office: Ah Hoo Chia, general manager, PT Adaro Indonesia, World Trade Centre, Suite 704, Jln. Jendral Sudirman Kav 29-31, Jakarta 12920, Indonesia. Ph: (62 21) 521 1265. Fax: (62 21) 521 1266.

Mine office: Putu Sastrawan, operations manager, Adaro mine, PO Box 110 TTB, Tanjung Tabalong 71500, Kalimantan Selatan, Indonesia. Ph: (62 526) 21 997/8. Fax: (62 526) 21 996.

Geology: The Adaro coal resources are contained within seams in Miocene sediments. The coal reserves consist of seven coal seams ranging in thickness from 20m to 40m in the major seams and 5m to 20m in the minor seams. The coal has a specific energy of 5,800-6,000 kcal/kg with 16%-17% inherent moisture, 1% ash and 0.1% sulphur.

Resources/reserves: Measured, indicated and inferred resources of 1,800 Mt. In November 1998, these included: Paringin 110 Mt; Tutupan 695 Mt; and Wara 1,015 Mt.

Operation: Open cut.

Treatment: Crushing.

Plant capacity: 22 Mtpa.

Production history:

Period to	Amount	Comment
6/30/2002	20.20 Mt	coal
6/30/2003	22.10 Mt	coal