

The role of the state mining enterprises in Indonesia with special focus on development of the coal sector

By Ir Achmad Prijono

1. Background on the formation of State Mining Enterprises in Indonesia

Indonesia's State Mining Enterprises - particularly those in the mining area's metallic-mineral and hydrocarbon fuel mineral sectors - have a unique history.

The Enterprises' founding can be traced directly to the birth of the Republic of Indonesia in 1945. However, philosophically, their origins may go back to the Dutch colonial period and the 1899 enactment of the "Indische Mijn Wet" or IMW, when certain strategic minerals were reserved for sole use by the East-Indies Government. (See Radetzki, *State*

Mineral Enterprises.) With the transfer of sovereignty, the Dutch-administration-owned mining enterprises at once became Indonesian State Owned Companies (Perusahaan Negara). Specifically, the transfer to Indonesian government involved the so-called IBW companies - the Bangka Tin Mine, the Ombilin Coal Mine in West Sumatra, and the Bukit Asam Coal Mine in South Sumatra, administered by the Dutch East-Indies Government by provision of the IMW.

At first, absent a national mining statute, the old colonial mining law (IMW) continued in effect. The remaining Dutch private-owned mines were al-

Table 1
Indonesian tin production, 1946-1966
(in t)

| Year | Bangka | Belitung | Singkep | Total |
|------|--------|----------|---------|--------|
| 1946 | 2 715 | 3 617 | 91 | 6 423 |
| 1947 | 9 963 | 5 683 | 290 | 15 936 |
| 1948 | 17 209 | 10 858 | 2 546 | 30 613 |
| 1949 | 16 460 | 9 821 | 2 752 | 29 033 |
| 1950 | 19 429 | 10 001 | 2 672 | 32 102 |
| 1951 | 19 461 | 8 736 | 2 789 | 30 981 |
| 1952 | 21 461 | 10 654 | 2 418 | 35 003 |
| 1953 | 23 931 | 9 715 | 2 708 | 35 822 |
| 1954 | 24 695 | 9 019 | 2 146 | 35 861 |
| 1955 | 22 749 | 8 512 | 2 106 | 33 822 |
| 1956 | 20 111 | 8 182 | 1 761 | 30 054 |
| 1957 | 17 292 | 8 998 | 1 432 | 27 722 |
| 1958 | 16 221 | 5 870 | 1 109 | 23 200 |
| 1959 | 14 449 | 6 118 | 1 046 | 21 613 |
| 1960 | 13 679 | 7 629 | 1 294 | 22 602 |
| 1961 | 11 289 | 5 981 | 1 304 | 18 574 |
| 1962 | 9 522 | 6 192 | 1 874 | 17 588 |
| 1963 | 6 149 | 4 835 | 1 870 | 13 854 |
| 1964 | 10 027 | 5 328 | 1 251 | 16 606 |
| 1965 | 8 778 | 5 402 | 754 | 14 934 |
| 1966 | 7 766 | 4 263 | 741 | 12 770 |

lowed to continue operation in their concession areas. Operations continued at the *Nederlandsch Indische Bauxiet Exploratie Mij* (NIBEM), which continued to exploit bauxite deposits at the island of Kijang, Riau Province; the *Singkep Tin Exploitatie Maatschappij* (SITEM), which operated without interruption at Singkep, one of the tin islands in the Riau Province; at the remaining holdings of *NV Gemeenschappelijke Mijnbouw Maatschappij Billiton* (NV GMB) in the Billiton Tin Mine operation; and at the Loa Kulu coal mine owned by *NV Oost Borneo Maatschappij* (OBM).

At the conclusion of the liberation campaign for Irian Jaya (West New-Guinea) in 1957, President Sukarno nationalized all Dutch property in the country, including the existing Dutch-owned private mining companies. At this stage of development, no Indonesian private mining company had the capital assets and expertise to take over the Dutch-owned companies. Only the Government had the funds, staff and expertise required to continue their operation.

Consequently, in 1958, all the former Dutch mining companies were put under control of a newly formed government agency called BUPTAN (Biro Urusan Perusahaan Tambang Negara - Bureau for State Mining Affairs). Since then, all significant mines (except for 3 foreign owned oil companies -- BPM, STANVAC and CALTEX) were virtually wholly Government-owned and controlled.

By nationalization act, therefore, the former Dutch enterprises became State Owned Enterprises. The first task of the new management, recruited from newly graduated engineers and a few remaining "old hands" from the Dutch companies, was to ensure continuity of the operation for generation of income and taxes for the state; to maintain the inflow of foreign exchange; and to sustain employment of thousands of mine workers. A fall in mining output after nationalization was mainly the result of a lack of funding (especially foreign exchange) to replace worn-out equipment and the

government's inability to allocate capital for expansion and rehabilitation.

The first 15 years after the transfer of sovereignty were marred by separatist and religious political upheavals that sapped the nation's economic strength. In addition, the West-Irian campaign had drained the State's coffers. As the economy worsened toward the mid-1960s, mining companies were allocated just a fraction (10%) of the foreign exchange they earned, which led to a partial paralysis of the hydraulic land mines, the crippling of several bucket dredges and the consequent decline in production capacity (especially at Bangka Island, the main tin producer).

The colonial-era state-benefit philosophy governed exploration and mining in post-colonial Indonesia. The Mining Law of Indonesia (Law No: 11,1967) stated that all natural deposits of minerals in the territory of the Republic were considered part of the national wealth, and would, therefore, be controlled and utilized by the state for the maximum

Table 2
Indonesian bauxite production,
1956-1966
(in t)

| Year | Amount | Mining by |
|------|---------|-----------|
| 1956 | 300 300 | |
| 1957 | 241 467 | NIBEM |
| 1958 | 243 904 | |
| 1959 | 387 253 | |
| 1960 | 395 678 | |
| 1961 | 441 166 | |
| 1962 | 491 298 | PNPERBAKI |
| 1963 | 506 241 | |
| 1964 | 647 805 | |
| 1965 | 688 259 | |
| 1966 | 701 255 | |

Table 3
Energy supply mix in Indonesia
(thousand BOE)

| Energy source | Realization on the end of the 3rd five year plan 1983/1984 | | Projection on the end of the 4th five year plan 1984/85 -1988/89 | | Increase in % |
|---------------|--|---------------|--|---------------|------------------|
| 1. Non Oil | | | | | |
| Coal | 1 109 | (0.53%) | 28 244 | (9.67%) | 2 446.80 |
| Hydro | 7 761 | (3.69%) | 24 330 | (9.33%) | 213.49 |
| Geothermal | 0 367 | (0.17%) | 1 958 | (0.67%) | 433.51 |
| Gas + LNG | 37 164 | (17.70%) | 55 246 | (18.90%) | 48.65 |
| Sub Total | 46 401 | (22.09%) | 109 770 | (37.57%) | 136.58 |
| 2. Fuel Oil | | | | | |
| | 163 661 | (77.91%) | 182 408 | (62.43%) | 11.45 |
| Total | 210 062 | (100%) | 292 186 | (100%) | 39.09 |

1 ton TCE = 4.93 BOE; 1 MWH = 1.995 BOE; 1 MCF Gas = 0.18 BOE

welfare of the people. This law came from the philosophy contained in Article 33 of the 1945 Constitution of the Republic of Indonesia, that states:

(a) Sectors of importance to the state which vitally affect the life of the people shall be controlled by the state;

(b) Land, water and the natural resources contained therein shall be controlled by the state and used for the maximum prosperity of the people.

Consequently, the state held exclusive mining rights. Other parties, such as State Enterprises, national private undertakings, co-operatives or individuals, could conduct mining only after obtaining "Mining Authorizations" (Kuasa Pertambangan or KP) issued by the Minister of Mines and Energy on behalf of the Government.

This background may explain why, in Indonesia, only State Owned Enterprises have the necessary experience and tradition of mining, while national private companies or cooperatives lack both expertise and tradition of good mining practices.

2. The post-1966 period, and new developments in mining policy

During Indonesia's political change-over in 1966 (sparked by an abortive coup on September 30, 1965), its economy was in disorder. Inflation ran at 600%; there was negative GDP growth.

After time, political stability permitted economic development. However, most of Indonesia's mines by then were barely operating. Plants, machinery and equipment were worn down and lacked spare parts. Production of the state-owned mines improved with the injection of increased funding and foreign exchange. However, new capital and expertise were required to develop Indonesia's untapped mineral resources and to expand production significantly. However, Government revenue was needed for other priorities -- develop-

ment of the national infrastructure, public utilities and education.

In the early part of the 1960's, the 1960 Law governing mineral exploitation was judged to be too state-centered, a disincentive to private initiative, and not in line with Indonesia's need to develop its rich potential to the maximum.

In 1967, a new mining Law, No.11, was promulgated in the Basic Provision of Mining. This law restates in its first article the importance of state control over minerals. It leaves, however, ample room for private and foreign investment in the development of Indonesia's mineral resources, in cooperation with the Government through Contracts of Work (COW's) and other agreements.

Article 10 in the Mining Law No. 11 of 1967 states that:

(a) The Minister of Mines and Energy may appoint other parties (including private foreign business) as Contractors to carry out mining activities that have not yet been, or cannot be, carried out by Government Agencies or State Enterprises holding mining authorizations.

b) In implementation a Contract of Work with a Contractor, the Government Agency or State Enterprise must adhere to the outlines, directives and conditions expressed by the Minister.

(c) A Contract of Work is legally

valid after authorization by the Government, in consultation with Parliament.

The enactment of this law, which was supplemented by the Foreign Investment Law No.1 in 1967, enabled foreign participation in the development of the country's mineral resources without impairing the state control stipulated in Article 33 of the Constitution.

The new mineral resource development policy relieved the Government of the risks of uncertain ventures and the financial burden of project development. At the same time, it provided opportunities for regional development and job creation.

After 1967, a flow of foreign investment began. An exploration boom developed in Indonesia in the late 1960's and early 1970's.

Freeport Indonesia Incorp. signed the first COW agreement (in the solid mineral sector) in 1967 to work the "Ertsberg" copper deposit at Tembaga Pura, Irian Jaya. Other COWs followed, which resulted in the development of the huge lateritic nickel reserves of Soroako (South Sulawesi) by INCO and some smaller tin deposits on and off-shore of the tin islands (Bangka, Belitung and Singkep) by PT Riau Tin, PT Koba Tin and PT Broken Hill Indonesia. Other prospective mineral deposits, such as the

Table 4
Production and export of coal from Indonesia

| Year | Production | | |
|------|------------|-----------------|----------------|
| | Ombilin | Total Indonesia | Export |
| 1980 | 142 830 | 337 989 | NA |
| 1981 | 241 687 | 398 770 | NA |
| 1982 | 302 572 | 587 987 | NA |
| 1983 | 325 662 | 648 239 | 417 951 |
| 1984 | 583 581 | 1458 152 | 901 510 |
| 1985 | 770 750 | 1957 548 | 1032 736 |
| 1986 | 710 049 | 2559 760 | 1 100 000(est) |

Table 5
Coal cooperation contractors

| Contract signed | Contractor/operator share-holders | Original area | Location |
|-----------------|---|---------------|-------------------------|
| 2/11/81 | PT Arutmin Indonesia Utah Exploration Inc. USA | 1 260 000 | South Kalimantan |
| 2/11/81 | PT Utah Indonesia Utah Exploration Inc. USA | 797 200 | East Kalimantan |
| 18/4/82 | PT Kaltim Prima Coal Concinz Riotinto, Australia British Petroleum, U.K. | 790 000 | East Kalimantan |
| 14/9/82 | Pt Kideco Jaya Agung - A Group of S. Korean companies | 244 140 | East Kalimantan |
| 16/11/82 | PT Adaro Indonesia Enadimsa, S.A. Spain | 150 000 | South Kalimantan |
| 26/4/83 | PT Berau Coal Nissho Iwai Corp., Japan Mobil Oil Corp., USA. | 497 625 | East Kalimantan |
| 21/8/85 | PT Allied Indo Coal Allied Indonesia Coalfield Pty. Ltd. PT Mitra Abadi Sakti | 844 | Parambahan West Sumatra |
| 15/11/85 | PT Chung Hua Overseas Mining Development, Taiwan Emro Tai Power | 150 | South Kalimantan |
| 31/12/86 | PT Multi Harapan Utama New Hope Indonesia Pty. Ltd (Australia) PT Asminco Bara Utama (Indonesia) Bpk. Ibrahim Risyad | 189 953 | East Kalimantan |
| 31/1/87 | PT Tanito Harum (Pmdn) | 123 850 | East Kalimantan |

huge nickel deposits at Gag Island and the western Gebe Island (North-Molluccas); and the extensive Tayan bauxite deposits in West Kalimantan were discovered. However, because of their inaccessibility, or as a result of falling metal prices in the post-1979 recession, these projects were judged not to be feasible, and contract areas returned to the Indonesian Government.

3. Coal resource development and energy policy diversification

Indonesia's coal industry had flourished before World War II, primarily in support of the railway and sea-communication sectors. After take-over by the Indonesian Government in 1950, however, it remained in a depressed condition until the late 1970's.

Management of former IBW coal companies had been under the administration of the Directorate of Mines for almost a decade. Industry, railway and power utilities switched from coal to oil during the era of low prices and the exploitation of deposits found in the Persian Gulf. There was virtually no export market for Indonesia's coal; the domestic market was limited as well. The coal industry also suffered through worsening economic conditions and the scarcity of foreign exchange to maintain minimum production levels.

In 1972, the coal industry was on the brink of collapse. To avoid the social impact of a closure, the Government reduced the workforce and trimmed the management and overhead of PN Tambang Batubara (the State Coal Mining Enterprise) to a minimum level. (the Loa Kulu coal mine, another state-owned mine in the Mahakam area, East Kalimantan, had been closed down earlier.) However, the first worldwide oil crisis of 1973-1974 changed the perception of coal's potential as an energy resource.

Indonesia is the second-largest oil

producer in the Western Pacific rim, after the People's Republic of China. Before the OPEC production cut in 1982, its production level amounted to 1.6 million barrels a day. Revenue from oil exports constituted more than 70% of the country's total export value; about 60% of the state revenue had its origin from oil.

The increase in oil prices after the crisis made oil Indonesia's prime foreign exchange earner among its export commodities. The need to push ahead with domestic industrial development while reserving oil for export led to the adop-

tion of a diversification policy in energy resources. This policy was encouraged by the oil crisis' warning to world energy policy makers about the vulnerability and risks involved in relying on a single and quickly depleting resource.

A deliberate, gradual shift from an oil-based economy to a diversified energy economy utilizing available non-oil resources, notably coal, became one of Indonesia's first priorities. In 1976, a Presidential Instruction was issued to utilize coal to the maximum extent in the cement industry and power utilities.

A reflection of this diversification

Table 6
Estimate of coal reserves of Perum Tambang Batubara's contractors, November 1987 (kt)

| Coal contractors and coal areas | Reserves classification | | | Total |
|--|-------------------------|------------------|------------------|------------------|
| | Measured | Indicated | Inferred | |
| <i>a. South Kalimantan</i> | | | | |
| PT Arutmin Indonesia | 300 000 | 300 000 | 199 000 | 799 000 |
| PT Adaro Indonesia | 225 240 | 328 170 | 493 120 | 1 046 530 |
| Pt Chung Hua Overseas Mining Development | - | - | - | - |
| Sub total(a) | 525 240 | 628 170 | 692 120 | 1 845 530 |
| <i>b. East Kalimantan</i> | | | | |
| PT Utah Indonesia | 67 000 | - | 50 000 | 117 000 |
| PT Kaltim Prima Coal | 100 000 | 100 000 | 91 000 | 291 000 |
| PT Kideco Jaya Agung | 98 025 | 323 223 | 114 804 | 536 052 |
| PT Berau Coal | - | - | 115 000 | 115 000 |
| PT Multi Harapan Utama | 13 023 | 11 367 | 32 955 | 57 345 |
| PT Tanito Harum | 25 000 | - | - | 25 000 |
| Ex. Agip Carbone | - | - | 175 600 | 175 600 |
| Sub total(b) | 303 048 | 434 590 | 579 359 | 1 316 997 |
| <i>c. West Sumatra</i> | | | | |
| PT Allied Indo Coal | - | 14 093 | - | 14 093 |
| Sub total(c) | - | 14 093 | - | 14 093 |
| Total (a + b + c) | 828 288 | 1 076 853 | 1 271 479 | 3 176 620 |

Table 7
Coal contractors potential production capacity
(kt)

| Contractors | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | Potential capacity/ year |
|----------------------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|-----------------------------|
| <i>a. South Kalimantan</i> | | | | | | | | | | |
| 1. PT Arutmin Indonesia | 250 | 1 000 | 1 000 | 2 000 | 2 000 | 4 000 | 4 000 | 4 000 | 4 000 | 4 000 |
| 2. PT Adaro Indonesia | - | - | 250 | 500 | 2 000 | 4 000 | 6 000 | 8 000 | 10 000 | 12 000 |
| 3. PT Chunghua OMD | - | - | - | - | - | - | 200 | 400 | 600 | 1 000 |
| Sub total(a) | 250 | 1 000 | 1 250 | 2 500 | 4 000 | 8 000 | 10 200 | 12 400 | 14 600 | 17 000 |
| <i>b. East Kalimantan</i> | | | | | | | | | | |
| 4. PT Utah Indonesia | - | 250 | 500 | 1 000 | 1 000 | 1 000 | 1 500 | 2 000 | 2 000 | 2 000 |
| 5. PT Kaltimprima Coal | 350 | 500 | 500 | 2 500 | 5 500 | 6 000 | 6 000 | 6 000 | 6 000 | 6 000 |
| 6. PT Kideco Jaya Agung | - | 300 | 1 000 | 1 500 | 2 000 | 2 000 | 2 000 | 2 000 | 2 000 | 2 000 |
| 7. PT Berau Coal | - | - | - | - | 600 | 1 600 | 2 000 | 2 000 | 2 000 | 2 000 |
| 8. PT Multi Harapan Utama | 400 | 600 | 1 000 | 1 000 | 1 000 | 1 000 | 1 000 | 1 000 | 1 000 | 1 000 |
| 9. PT Tanito Harum | 400 | 500 | 600 | 700 | 800 | 800 | 1 000 | 1 000 | 1 200 | 1 200 |
| Sub total(b) | 1 150 | 2 150 | 3 600 | 6 700 | 10 900 | 12 400 | 13 500 | 14 000 | 14 200 | 14 200 |
| <i>c. West Sumatra</i> | | | | | | | | | | |
| 10. PT Allied Indocoal | 300 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Sub total(c) | 300 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 |
| Total(a+b+c) | 1 700 | 3 650 | 5 350 | 9 700 | 15 400 | 20 900 | 24 200 | 26 900 | 29 300 | 31 700 |

policy is shown in Table 3, which is guiding the nation's current, (Fourth) Five Year Plan (1984/1985 - 1988/1989) for national energy development strategy. This chart shows that coal use is projected to increase, with 2,447% with the percentage share of coal in the energy supply mix raised from 0.53% at the end of the Third Five Year Plan to 9.67% at the end of the Fourth Plan.

The first diversification program involved rehabilitating and developing existing state-owned coal mines in Sumatra, Bukit Asam and Ombilin to enable them to generate coal output that would accommodate construction in the power and cement industries.

The former sole State Coal Mining Enterprise (PN Tambang Batubara), which managed both state owned mines Bukit Asam and Ombilin, was reorgan-

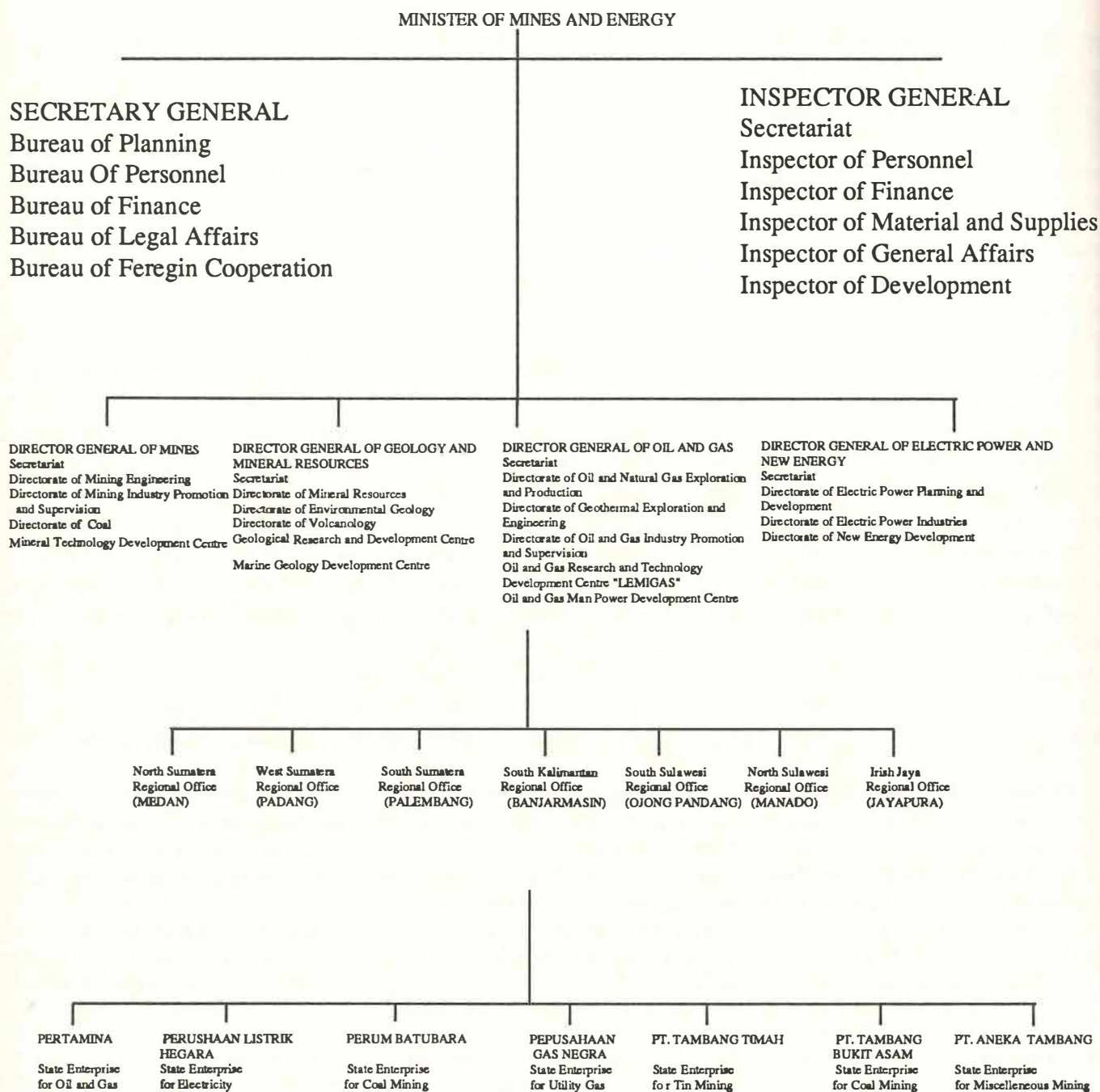
ized in early 1981. A new company, PT Tambang Batubara Bukit Asam, was created, with the specific task of developing the integrated Bukit Asam coal mine project. PN Tambang Batubara continued to manage and develop the Ombilin mine. In addition, it was charged with promoting and negotiating the development of the coal potential in East and South Kalimantan with private foreign or national companies based on the Co-operation Contracts for coal mining.

The Bukit Asam integrated project, involving an investment sum of 800 MUSD, aimed to increase production to about 3 Mt by 1988. This project includes mine development; rehabilitation of a 420 km railway track; construction of a load-out terminal and stockyard at Tarahan, South Sumatra; and sea transportation for the supply of coal across

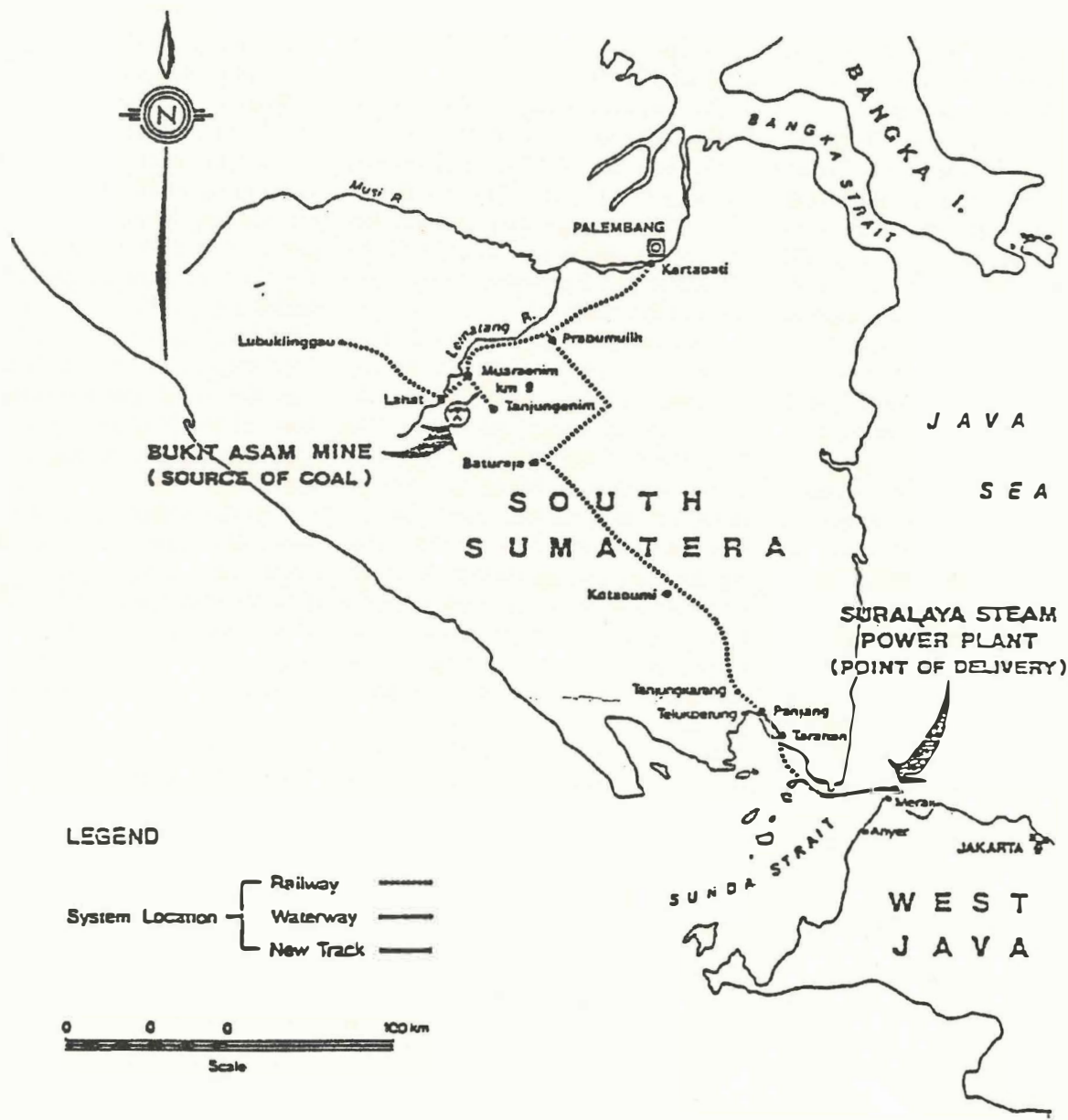
the Sunda Strait to the coal-fired Suralaya Power Plant (two units of 400 MW at the first stage in West Java. See Map 1).

The development of the Ombilin mine was carried out in several stages. The Ombilin I project, costing around 43 MUSD, included the full mechanization of the underground mine, using hydraulic power supports and armoured face conveyors. In addition, it expanded the open-pit mine by adding of heavy equipment for earth-moving, coal extraction and hauling. This Ombilin I project was carried out according plan; its production target of 750 kt in 1985 was achieved. However, to perform at this level, the existing infrastructure had to be improved, coal transportation capacities increased, harbor facilities rehabilitated and new export markets created.

ORGANIZATION SCHEME OF THE DEPARTMENT OF MINES & ENERGY



MAP I



LEGEND

- System Location {
 - Railway ———
 - Waterway ———
 - New Track ———



BUKIT ASAM COAL MINING DEVELOPMENT
AND TRANSPORT PROJECT

The Ombilin II project involves development of the underground Waringin deposit, with a recoverable reserve amount of about 24 Mt, to a depth of 650 m below the surface. A feasibility study, undertaken by the Canadian consultant Norwest Resource Consultant Ltd. and financed by World Bank, was recently finalized; after evaluation, project implementation is planned.

The new PN Tambang Batubara, whose status was changed into Perum Tambang Batubara (PTB) in 1984, had, since a year after its 1982 reorganization, continuously recorded a profit. (Perum means Perusahaan Umum or Public Enterprise.) This was the result of sharply increased production levels and the penetration of new export markets in both the ASEAN region and the north Asian industrialized countries such as Japan and Korea. (See Table 4.)

These production increases, although impressive, will not meet the steeply increasing coal needs of industry and the power sector in the late 1980s and early 1990s. In 1984, the year in which domestic oil prices (except for kerosene) were adjusted to the international level, the cement industry began to convert to coal; at the end of the Fourth Plan in April 1989, four coal-fired power plant units of each 400 MW were planned to

be operational in Suralaya and another two units of each 65 MW in Bukit Asam, South Sumatra.

Today, Indonesia is still a net importer of coal, since the two units of 2x400 MW Power Plants in Suralaya came on line in 1985 and the huge Indocement Plant in West Java started using coal in 1986.

The implementation of this diversified energy policy is under the direction of the Minister of Mines and Energy, who is assisted by four Director Generals -- for Geology and Mineral Resources; for Mines; for Oil and Gas; for Electricity and Renewable Energy (see organization chart).

Administration and supervision of mining activities, including State Mining Companies' affairs, are centralized in the Department of Mines and Energy. The State Mining Companies are responsible to the Minister of Mines and Energy. However, in practice, much of the Minister's authority over the State Mining Companies is delegated to the Director General of Mines. Consequently, the Director General of Mines is closely involved in implementing programs to promote development of the coal sector through the State Coal Companies. There is also close coordination with the Directorate General of Electricity and

Renewable Energy, which controls the demand of coal for power generation.

4. Involvement of the foreign coal contractors in coal development

Since limited funding was available for the many priorities on the national development list, and state-owned companies faced constraints in expanding production to meet demand, Indonesia's government invited foreign investors to provide both funding and organizational expertise to develop its coal resources. PN Tambang Batubara had, since 1978, issued a limited international tender for exploration and development of eight blocks with coal potential in the area of East and South-East Kalimantan on the basis of the "Cooperation Contract for Coal Mining," a variant of the COW agreement.

Foreign companies and private national companies may undertake large-scale coal mining in Indonesia by contracting with the State Coal Enterprise Perum Tambang Batubara (PTB), which acts on behalf of the Government as principal or owner. Contractual arrangements between Perum Tambang Batubara (PTB) and foreign contractors for the development of the Kalimantan

Table 8
Estimate of Indonesian coal production 1988-1994
(kt)

| Source | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 |
|---|--------------|--------------|--------------|---------------|---------------|---------------|---------------|
| 1. Ombilin Mine including Parambahan | 950 | 1 250 | 1 250 | 1 300 | 1 350 | 1 350 | 1 350 |
| 2. Bukit Asam Mine* | 1 480 | 2 160 | 2 642 | 3 365 | 3 585 | 3 200 | 3 200 |
| 3. Contractors of Putb in East & South Kalimantan | 1 200 | 2 350 | 3 650 | 6 650 | 9 750 | 11 000 | 12 800 |
| 4. Small private companies | 1 000 | 1 100 | 1 200 | 1 200 | 1 200 | 1 200 | 1 200 |
| Total production | 4 630 | 6 860 | 8 742 | 1 2515 | 15 885 | 16 750 | 18 550 |

* Based on PTBA's letter dated September 15, 1987 to the Director General of Mines and Director General of Electricity and New Energy.

Table 9
Estimated coal demand for power utilities and cement plants in Indonesia
(kt)

| Plants | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 |
|----------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <i>I. A. PLN power plants</i> | | | | | | | | |
| 1. Suralaya I, II, III, IV | 2 200 | 2 400 | 3 700 | 4 400 | 4 400 | 4 400 | 4 400 | 4 400 |
| 2. Paiton I, II | - | - | - | - | - | 1 632 | 1 951 | 2 071 |
| 3. Ombilin I, II | - | - | - | - | - | 124 | 160 | 220 |
| 4. Balikpapan I, II | - | - | - | - | - | - | 180 | 214 |
| 5. Banjarmasin I | - | - | - | - | - | - | - | 85 |
| 6. Ujungpandang | - | - | - | - | - | - | - | - |
| 7. Bukit Asam I, II | 81 | 143 | 166 | 187 | 187 | 302 | 361 | 295 |
| 8. Tarahan | - | - | - | - | - | - | - | - |
| Sub total (IA) | 2 281 | 2 543 | 3 866 | 4 587 | 4 587 | 6 458 | 7 052 | 7 385 |
| <i>B. Non PLN power plant</i> | | | | | | | | |
| Salak | 25 | 25 | 30 | 30 | 30 | 30 | 30 | 30 |
| Sub total (I) A + B | 2 306 | 2 568 | 3 896 | 4 617 | 4 617 | 6 488 | 7 082 | 7 415 |
| <i>II. Cement plants</i> | | | | | | | | |
| 1. PT Semen Padang | 240 | 250 | 265 | 280 | 280 | 280 | 280 | 280 |
| 2. PT Semen Gresik | 170 | 170 | 170 | 170 | 170 | 170 | 170 | 170 |
| 3. PT Semen Tonasa | 150 | 158 | 165 | 165 | 165 | 165 | 165 | 165 |
| 4. PT Semen Cibinong | - | - | - | - | - | - | - | - |
| 5. PT Indocement | 765 | 800 | 850 | 850 | 900 | 950 | 1 000 | 1 000 |
| 6. PT Semen Nusantara | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 7. PT Semen Baturaja | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| 8. PT Semen Andalas | 100 | 120 | 120 | 120 | 120 | 120 | 120 | 120 |
| 9. PT Semen Kupang | - | - | - | - | - | - | - | - |
| 10. PT Semen Cirebon | - | - | - | - | - | - | - | - |
| Sub total (II) | 1 620 | 1 693 | 1 780 | 1 830 | 1 880 | 1 930 | 1 930 | 1 930 |
| <i>III. Others/PJKA(railway)</i> | | | | | | | | |
| | 5 | 5 | 10 | 10 | 10 | 10 | 10 | 10 |
| Total coal demand | 3 931 | 4 266 | 5 671 | 6 407 | 6 457 | 8 378 | 9 022 | 9 355 |

coal resources are based on Presidential Decree No.49 of 1981.

Some of the key provisions of the Co-operation Contract for Coal Mining are:

(a) The contractor is to form a company, incorporated under Indonesian Law, and shall perform all operations and other obligations imposed on it by

the Agreement and shall have full responsibility and assume all risk thereof, but PTB shall be responsible for the management of the coal mining operations.

(b) The contractor shall provide all necessary funds and shall have the sole responsibility for the financing of the

operations. The contractor shall finance the cost of purchasing materials, supplies, plant and equipment, and such equipment shall become the property of PTB when landed at the Indonesian port of import or purchased locally.

(c) The contractor is to carry out survey, exploration, a feasibility study and

mine construction in 8 years time, and is given the right to exploit the area for the duration of 30 years.

(d) The contractor is entitled to take 86.5% of its annual coal production, and is to submit the remaining 13.5% free of charge to PTB.

(e) The contractor shall pay 35% corporation tax for the first 10 years, increasing to 45% thereafter from its annual taxable income, regional taxes in an agreed lumpsum payment as specified in the contract and deadrent in relation to the contract area.

(f) The contractor is exempted from import duties and export tax, and is allowed to apply accelerated depreciation on the invested capital and to carry forward losses during the first five years of operation into the following years.

(g) The contractor shall have the right of an investment allowance of 20% of the total investment, deductible at the rate of 5% a year from taxable income.

(h) The contractor is granted the rights to transfer into any currency, and without limitation, funds in respect of: net operating profits in proportion to the shareholding of the foreign participant, installments of foreign loans and their interest, depreciation and allowance for depreciation of imported capital assets, proceeds from the sales of shares owned by the foreign shareholders to Indonesian nationals and compensation in case of nationalization.

(i) The operating company is obliged to offer its shares for Indonesian participation, so that at the end of the 10th year of operation, a total of not less than 51% of shares should have been offered to Indonesian nationals or entities.

Since November 1981, eleven cooperation contracts for coal mining (Table 5) had been concluded, one of which, with Agip Overseas Ltd. from Italy, was annulled in 1985 because of the firm's withdrawal. The remaining ten contractors, among which two, PT Multi Harapan Utama and PT Tanito Harum, replaced Agip at its Southern area along

the Mahakam river, are still actively exploring and developing their respective coal areas.

This exploration had resulted in the location of about 2.7 Mt of coal as of December 1986; by October 1987, the figure had grown to 3.2 M. The deposits found are mostly of the steaming coal type, with its quality ranging from high volatile bituminous coal to lignite (Table 6). A majority of the coal seams found, including those containing good-quality bituminous coal, have considerable thickness (6 meters and up are not unusual); are located at shallow depth; and are easily recoverable by open-pit mining methods. In general, they are situated close to tide water, with good prospects for the construction of load-out terminals.

Most of the coal contractors are still in the exploration stage, but some, like PT Arutmin Indonesia and PT Kaltim Prima Coal, have reached or are nearing the trial production stage. It is expected that 3 or 4 coal contractors will start commercial production in 1988. Pending the availability of firm sales and supply contracts, it is difficult to draw up a production plan for the coming years. However, with the current knowledge of the coal reserves, current stage of development, existing transportation and load-out terminal possibilities, the following potential production capacity projection for PTB's coal contractors has been conceived (see Table 7).

Realized production levels are subject to real growth in the power sector and cement industry, which again depends on available funds and Indonesia's overall economic situation. In addition, the strength of the export market affects coal production. Production estimates based on projected realizable sales until 1994 are shown in Table 8.

Projected consumption increases in the power and cement industries are less than before, estimated at about 6.4 Mt by 1990. Pending other developments, such as an increased use of natural gas,

they may reach about 9.35 Mt by 1994 (see Table 9).