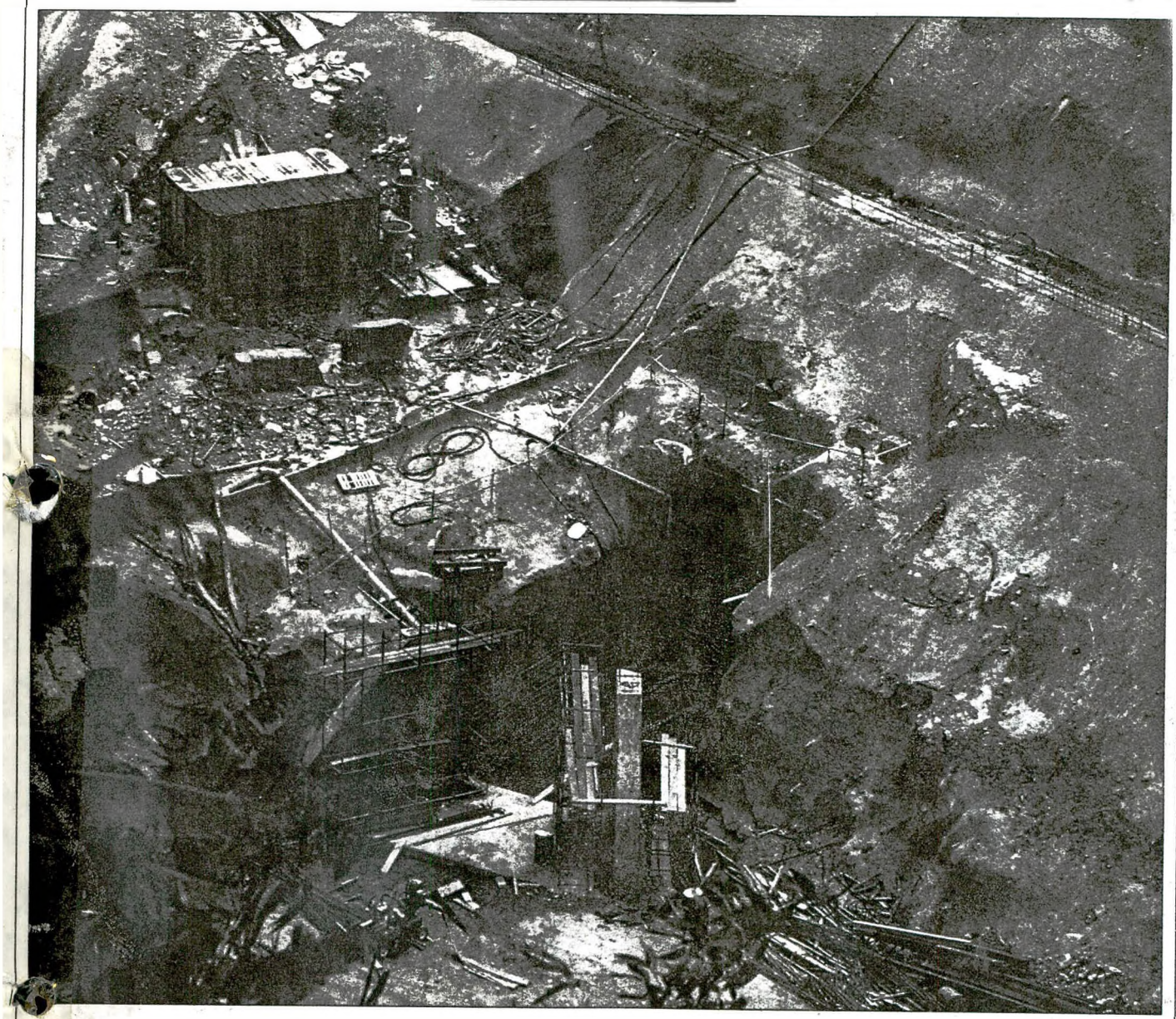

HIDRO ELEKTRIK PERGAU

Suatu Pengajaran

Oleh WAN OMAR WAN AHAMED yang melawat ke tapak hidro elektrik Pergau baru-baru ini. Foto: HAJI MOHAMAD ALI ZAKARIA

Keadaan tegang yang timbul selepas tercetusnya isu tuntutan wang pampasan oleh kerajaan PAS Kelantan terhadap Projek Hidro Elektrik Pergau, kini berakhir dengan termeterainya perjanjian projek tersebut pada 4 Ogos 1992 yang lalu.

Walaupun selepas menandatangani perjanjian tersebut, Menteri Besar Kelantan, Nik Aziz Nik Mat, mengucapkan terima kasih kepada semua pihak, termasuk kepada Menteri Kewangan, Anwar Ibrahim dan Perdana Menteri, Dr. Mahathir Mohamad, kerana kerjasama mereka bagi memastikan projek itu dapat berjalan lancar, bagaimanapun hakikat bahawa projek tersebut telah terganggu seketika tidak dapat dinafikan oleh sesiapa pun.

Apa pun alasan yang diberi, "kecelaan sudah berlaku". Hal ini patut menjadi pengajaran yang penting bagi semua pihak jika kita bersikap jujur dan ikhlas untuk membangunkan bangsa kita.

Projek yang menelan belanja $1.3 bilion itu, kini sudah siap sebanyak 35 peratus. Dalam perjanjian yang telah ditandatangani pada 4 Ogos 1992 itu, kerajaan Kelantan akan menerima pampasan bernilai $117 juta dalam tempoh 35 tahun dengan terlaksananya projek itu nanti.

Projek Hidro Elektrik Pergau ini mengandungi satu empangan utama jenis tanah tambun setinggi 74 m, satu empangan kawalan aliran, alur limpah tidak berpintu, stesen jana kuasa bawah tanah setinggi 30 m, terowong lencongan sepanjang 24 km serta pelbagai struktur yang berkaitan. Empangan utama mempunyai takungan air yang boleh menampung 62.5 juta meter padu air bersamaan dengan purata 40 hari

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pengaliran air sungai ke dalam kawasan takungan. Pada paras bekalan penuh, ketinggiannya mencapai 636 meter daripada aras laut dengan luas permukaan kolam air lebih kurang 4.3 km persegi atau 430 hektar.

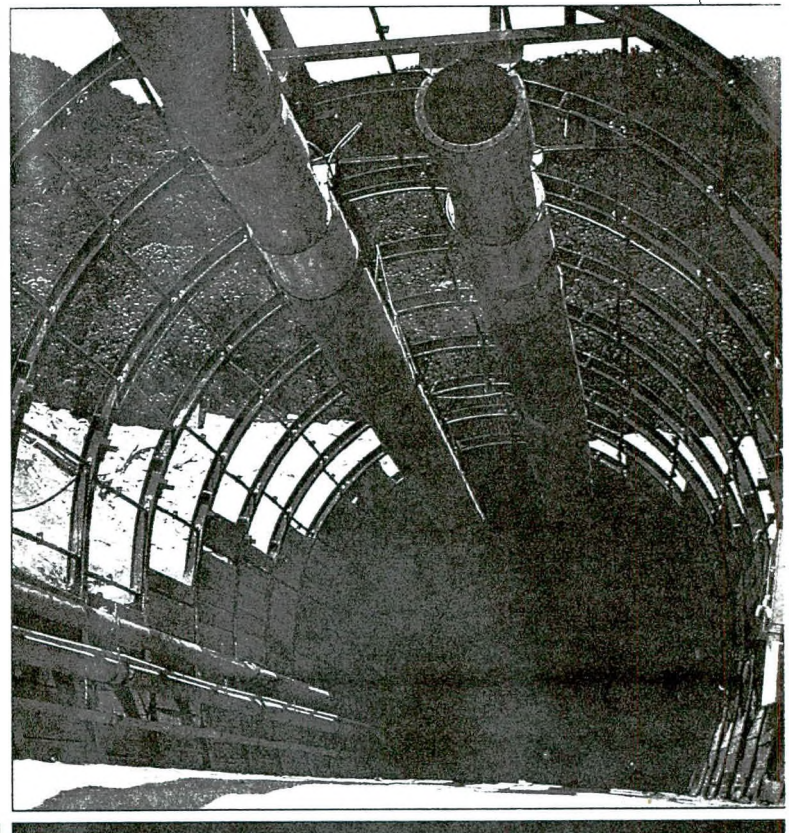
Kajian sistem penjanaan kuasa yang dilakukan oleh Tenaga Nasional sebelum projek ini berjalan, menunjukkan bahawa Semenanjung Malaysia memerlukan keupayaan kuasa kemuncak menjelang pertengahan tahun 1990-an. Keperluan maksimum tenaga elektrik bagi negeri Kelantan ialah sebanyak 75 MW dan bagi Semenanjung Malaysia 2 720 MW. Pada tahun 2000, jumlah ini akan bertambah menjadi 280 MW bagi negeri Kelantan dan 7 000 MW bagi Semenanjung Malaysia. Keperluan tenaga elektrik di Kelantan meningkat pada kadar 11 peratus setahun, manakala bagi Semenanjung Malaysia 8.6 pe

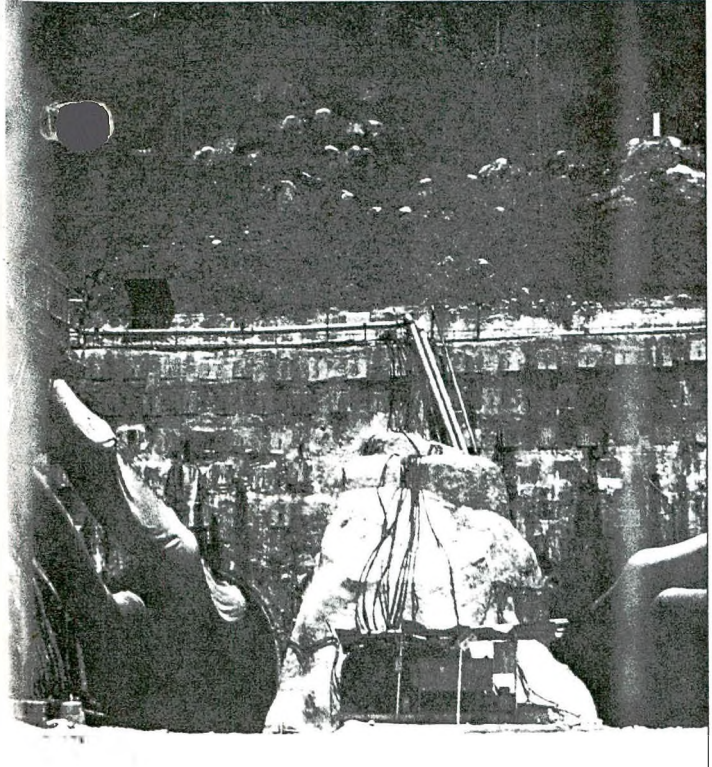
Sepanjang projek itu berlangsung, lebih 1 500 orang pekerja dalam pelbagai peringkat diperlukan. Peluang pekerjaan ini sedikit sebanyak akan memberi faedah kepada para penduduk tempatan. Malah pertumbuhan ekonomi dijangka akan meningkat dengan begitu cepat ekoran meningkatnya permintaan para pekerja terhadap barangan dan perkhidmatan di sekitar kawasan tersebut.

Pembinaan jalan masuk ke kawasan pedalaman tidak sahaja memudahkan rakyat dari segi perhubungan, malah akan membuka peluang rancangan pembangunan tanah serta pelbagai industri sampingan lain, yang akan memberi manfaat kepada rakyat. Beberapa destinasi pelancongan yang menarik seperti air terjun, tempat berkelah, dan tempat memancing akan dapat dimajukan.

Pendeknya faedah serta manfaat yang akan dinikmati oleh rakyat Kelantan khasnya dan rakyat Malaysia amnya, dengan terlaksananya projek ini, amat besar. Dalam melaksanakan projek ini, pihak Tenaga Nasional telah memberikan perhatian yang khusus terhadap isu alam sekitar, dengan bertindak bagi mencegah kesan negatif ke atas alam sekitar, selain memanfaatkan kesan positifnya ke tahap yang maksimum.

Dalam melaksanakan projek ini, pihak Tenaga Nasional telah memberikan perhatian yang khusus terhadap isu alam sekitar, dengan bertindak bagi mencegah kesan negatif ke atas alam sekitar, selain memanfaatkan kesan positifnya ke tahap yang maksimum.





TOP 100

Utilities Lead The Way

Heading the top 100 list of outstanding corporate performers in 1992 are Tenaga Nasional Bhd and Telekom Malaysia Bhd

By ZOE PHOON

UTILITY stocks Tenaga Nasional Bhd and Telekom Malaysia Bhd (see market cap tables) easily outshine the rest of the Kuala Lumpur Stock Exchange (KLSE) companies, each accounting for some 12% of the total market capitalisation of RM238.86 billion as at Dec 31, 1992. They rank first and second respectively among the top 100 companies based on market value.

With a listed capital of three billion shares, the biggest ever in local corporate history, Tenaga's RM9.95 closing gives it a market worth of RM29.85 billion. It overtakes 1991's top gun Telekom which has a RM28.70 billion market value. Telekom ended the year at RM14.50, 50 sen away from its 1992 high of RM15.

Leisure and gaming group Resorts World shot up to third placing (from sixth previously) along with a sharply higher market worth of RM7.75 billion. Although the country's premier bank Malayan Banking retained its fourth position, its RM7.55 bil market value is way ahead of the RM5.34 billion in 1991 due mainly to the surge in price to RM9.95 from RM7.10.

But conglomerate Sime Darby fell to fifth spot (second before), Genting sixth (fifth), Malaysian International Shipping Corp or MISC seventh (third) while Malaysian Airline System (MAS) maintained its ninth placing. Magnum Corp leapt to the 10th spot from its previous 20th.

New entrants to the top 100 include Ekran, Aokam Perdana, Technology Resources Industries, Malaysian Resources Corp, IJM Corp and Arab-Malaysian Corp (formerly Temerloh Rubber Estates). Counters no longer on the list include Pelangi, Cycle & Carriage Bintang, Promet, MBf Holdings, Palmco, Hock Hua Bank, Malayawata and Tradewinds.

According to Permodalan Nasional Bhd (PNB) in its 1991/92 edition of *Malaysian Corporate Performance*, Telekom is the only KLSE company whose pre-tax profit at RM1.08 billion exceeded the RM1.00 billion mark for 1991/92.

Expectedly, gaming stocks were well sought after too, with at least six making it to the top 100. They include Resorts World, Magnum, Multi-Purpose Holdings (MPHB), Tanjung Plc and Berjaya Leisure. Indeed, a research manager reckons 'it was the gaming theme and bullish expectation of the sector's long-term prospects, reinforced by news of the MPHB group (including Magnum) venturing into China's gaming industry that started off the stock market rally last September.'

But the market was unable to sustain the two month run-up. He cites weakened investor psychology due to continued uncertainty over the group's Chinese project as a possible reason for the retreat. In November, the Magnum share took a more severe beating to finish the year at RM8.85, down RM3.05 from its high of RM11.90 while MPHB shaved 95 sen off its RM3 peak.

Gaming stocks were well sought after too, with at least six of the gaming-related companies making it to the top 100

Transportation, motor, food, petroleum refining, plantations, hotel, cement and bank stocks also generated a lot of interest among investors. For transportation heavyweight MISC, SJ Securities expects the group, with containers making up 40% to 45% of its fleet, to register a 'slight earnings growth this year mainly because it has entered into a few tonnage-sharing agreements'.

But the SJ analyst does not expect any significant jump or drop in MISC's profit as some 45% of it comes from the liquefied natural gas contract with Japan which has another 13 to 15 years to go. He also notes MISC's earnings are 'very much tied to foreign exchange fluctuations as 80% of its revenue is in US dollars'. He says the liner and container service industry has not been performing up to expectations due to lower freight rates and capacity.

Among motor counters, Perusahaan Otomobil Nasional (Proton) ranked eighth in terms of market worth (at RM3.85 billion); Edaran Otomobil Nasional or EON (20th, RM1.85 billion); UMW Holdings (35th, RM1.41 billion); and Oriental Holdings (41st, RM1.14 billion).

Another top 100 member, Tan Chong's 1991/92 pre-tax profit of RM236 million, says PNB, is also among the top 10 KLSE companies ranked by earnings after Telekom, Sime Darby, Malayan Banking, MISC, Proton and Rothmans of Pall Mall (M). PNB says the motor industry saw increasingly difficult operating conditions caused by a series of tight monetary measures introduced by Bank Negara to curb rising inflation.

But plantations generally fared better given the higher commodity prices. Plantation giants Kumpulan Guthrie took 15th spot with RM2.2 billion, Golden Hope (16th; RM2.02 billion) and Kuala Lumpur Kepong (25th; RM1.66 billion). Analysts expect improved plantation earnings, especially with strengthening palm oil prices.

In hotels, PNB says the restructured Landmarks and Pernas International Hotels and Properties (PIHP) are the two companies which had released their full-year results for 1991/92 and achieved the 'highest' growth in turnover and pre-tax profit of about 57% and 81% respectively. The sector also recorded the 'highest' operating profit margin of 30% against 26% for 1990/91.

Last year's top 100 includes 46 companies (33 in 1991) with market worth of over RM1 billion, and ten new listings. Market values are generally higher, reflecting the better stock market conditions. The KLSE Composite Index hit an all-time high of 660.35 on Nov 5 (against the year's low of 546.63 on Jan 14) and the KLSE reported a record daily trading volume of 479.25 million shares worth RM959.93 million on Nov 9.

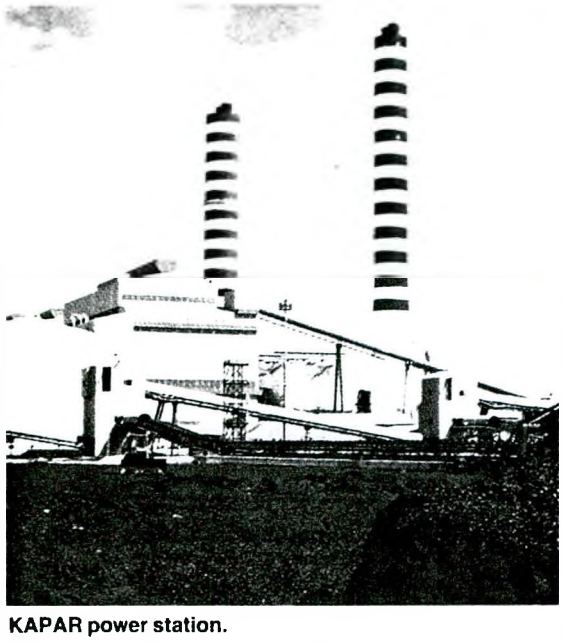
Why Conserve Energy?

AT the height of the so-called 'power crisis', Tenaga National Bhd appealed on Feb 19 to the public to conserve energy. A week later, Tenaga corporate communications manager Ibrahim Hassan happily announced that there had been no load shedding during the past week owing to the good response.

The day before this appeal, the outage had come to as much as 1,100 MW, although the shortfall had amounted to only 80 MW at the peak demand period (less than two per cent of maximum demand). This shows that a bit of public co-operation (in reducing electricity consumption or shifting operations to off-peak periods) is enough to bridge the little gap between peak demand and supply.

The point, however, is that it is possible to save energy. And that it is possible to do so, not only in exigent circumstances, but also from day to day should the public be sufficiently motivated to respond to the call. And why not? It doesn't take much effort.

Why conserve? For Tenaga, an annual 10 per cent increase in electricity consumption would entail adding out 500 MW into the generation system. But a 10 per cent reduction would save the equivalent of what would otherwise have to be invested in the installation of a 500 MW generating plant (about RM1 billion). Consumers would also stand to gain to the tune of several hundred million ringgit.



KAPAR power station.

Energy, Telecommunications & Posts Minister Datuk S Samy Vellu has described conservation as 'the fuel of the next century'. Whether or not this metaphor is apt, the need for conservation is bound to grow with the surging power demand in the coming years and decades.

At the time of the 1979-80 crisis, Daniel Yergin of the energy project at the Harvard Business School called conservation the key energy source.

Yergin referred to it as conservation energy because 'conservation is no less an energy alternative than oil, gas, coal, or nuclear'. In 1988, he called it the most important incremental energy 'source' of all.

But how much can a country save? Among economists and other experts who see a correlation between energy consumption and economic development, some argue that there is more room for conservation in the developed countries with their much higher per capita consumption than the developing countries.

While some subscribe to the so-called iron law of the energy-Gross National Product/Gross Domestic Product link, others see the coupling as not so ferrous but rather elastic.

In Malaysia, however, electricity consumption has shown a strong correlation with GDP growth. While electricity consumption nearly doubled in the past decade, GDP slightly more than doubled.

But how much can Malaysia save without constraining its economic development on a fast course?According to a recent World Bank review, Malaysia can save 7% to 10% of total consumption. While this may appear to be a rather conservative figure, it is a target worth pursuing all the same.

After launching the Ministry's energy conservation programme in December 91, Samy Vellu told reporters that industries could save up to 40% and households up to 30% using energy-saving devices. According to him, electricity consumption could be reduced by 15-20% with such devices.

The United States (US) has recently shown that substantial savings can be made without affecting the standard of living, while sparing billions of dollars and reducing environmental stress and strain.

Daniel Yergin wrote in 1988: 'In the 1970s, my colleagues and I argued that the US could use 30% to 40% less energy per unit of GNP than had been the case in 1973 without much, if any, effect on the standard of living.

At the time, this was a novel and very controversial statement, and one that stimulated much contention and criticism. Today, however, the US uses 27% less energy — and 32% less oil — per unit of GNP than it did in 1973...'

In Malaysia the Government must also take the lead with a firm commitment to conservation. 'Public policy must be its champion,' Yergin wrote way back in 1979.

The rest of the country must follow suit. And as in Japan, conservation should be made a way of life, rather than just an ad hoc response to a so-called crisis from time to time. — ***By KHOR ENG LEE***

Caught Short

MANY brickbats have been thrown at Tenaga in the gloom of the so-called power crisis. Many unfair criticisms have been levelled at the newly-privatised power utility, including this rather remarkable attribution of the power shortage to lack of planning.

It is simply inconceivable that a large organisation, particularly one responsible for the nation's vital power supply, could manage or operate without adequate and proper planning. For one thing, major power projects have long lead times—up to 10 years or more from conception to construction, completion and commissioning of new plants. In other words, Tenaga managers and engineers have to plan at least 10 years ahead.

Electricity planning begins with load forecasts, which are normally carried out annually, for the short-term (one to five years), the medium-term (six to 10 years), and the long-term (more than 10 years). Tenaga has electricity forecasts up to the year 2010.

No matter how meticulous, however, such planning cannot be perfect. And for that matter, nothing is perfect.

For example, the actual maximum demand (MD) has bust forecasts for 1990, 1991 and 1992:

It should be noted that the present maximum demand of a 14,600MW has already surpassed the Ministry's 1986 projection for 1995 (4,560MW). In view of this upsurge, Tenaga has revised upwards its forecasts for 1995 (from 5,148MW to 6,000MW) and for the year 2000 (from 7,527MW to 9,000-10,000MW).

Power demand shot up by as much as 18% in mid-1990. Such prospects of sustained high growth prompted the NEB to scale up its planting at the Port Klang Power Station and to put up a 500MW generating unit which would be the largest to be installed in the country.

In July of that year, NEB was in the final process of inviting consultants to help implement this major project for commissioning in 1996. For undisclosed reasons, however, the project has since been quietly deferred.

Although this delay has in no way contributed to the current power shortage, the so-called crisis has evidently changed the minds of the authorities. Now Tenaga is planning to install two 500MW units at Kapar for completion by 1997.

	Projected Demand	Actual MD
1990	3,341 MW	3,500 MW
1991	3,672 MW	3,960 MW
1992	4,009 MW	4,460 MW
1993 (Feb 10)	4,365 MW	4,620 MW

(Source: TNB)

At the start of the so-called crisis, the highly controversial nuclear option was invoked as a possible solution to the country's mounting power demand.

This is nothing new as nuclear power has been considered as far back as 1956.

Although nuclear is still a dirty word today, it remains a long-term option. Should we decide right now to go nuclear like our neighbours in Indonesia and Thailand, it cannot be willed into being overnight. Up to about 15 years is the lead time. We should also bear in mind that nuclear is no magic wand.

Like nuclear energy, Sarawak hydro also beckons as another long-term option. But both are fraught with formidable environmental constraints. Unlike nuclear which will have to be imported, however, Sarawak hydro is an indigenous and abundant as well as a renewable resource.

If the Bakun project had been implemented and commissioned in 1990-92 as proposed in the early 1980s, the present shortage would not have occurred. Of course, all this can only be conjecture, if not wishful thinking.

INCREASING needs: Greater demands on existing power stations.

Surprisingly, Tenaga has fallen short. But its problem is not due to lack of planning. It is probably due to an oversight in the current programme (not the long-term plan). Or quite simply, a glitch in the system. How else can the large take-down capacity of generating plants for routine maintenance and scheduled rehabilitation/ conversion be attributed? Exacting a heavy toll on Tenaga's spinning reserve, this massive take-down is the major, if not the sole, cause of the current power shortage. — ***By KHOR ENG LEE***

Competitive Power

With the rising expectations of customers for a reliable electricity service, independent power producers can play a vital and complementary role

By KHOR ENG LEE

WITH privatisation, the story of electricity generation and supply in Malaysia is coming full circle. This move will also mark the completion of a century of power supply in the country.

It all started with power for the mining sector. And it was the private sector which had initiated electrification in the country, starting with the installation of the first electrically-operated pumping equipment for a tin mine in Rawang in 1894 — nearly 100 years ago.

Shortly after local tin miners Loke Yew and Tamboosamy Pillai had introduced electrification in their mining operations, the Raub Australian Gold Mining Company constructed the country's first hydro-electric power station on Sungai Sempam in Raub, Pahang.

In Perak, the private sector dominated power supply where the bustle in tin mining had led to the incorporation of the Perak River Hydro Electric Power Company (PHREP) in 1926. This company subsequently became the biggest single producer of electricity in South-East Asia before World War II. In 1940, it provided more than half the total power supply in the Federation.

Between 1964 and 1982, however, the process of deprivatisation was virtually completed with the National Electricity Board (NEB) taking over the installations of several privately-owned entities, including those of the Electricity Supply Department of the Penang Municipal Council in 1976, and those of Perak Hydro and its subsidiary, Kinta Electric Distribution, in 1982. The NEB effectively commanded a monopoly (with its huge power stake of up to 97 % until now), except for a number of private generators in isolated areas, factories and estates with their own generating facilities.

IPPs	PLANNED CAPACITY
YTL Corporation	1,000 MW
Sikap Power	1,300 MW
Time Engineering	600 MW
Besut plant	400-600 MW
Total	3,300-3,500 MW

Subsequently, the incorporation of Tenaga Nasional Bhd under the Companies Act in July 1990 constituted the first major move towards privatisation in the power industry.

With privatisation, however, Tenaga's monopolistic status can no longer be taken for granted. Under the Electricity Supply Act 1990, the Director-General of Electricity Supply has been appointed to promote competition in the generation and supply of electricity as well as to ensure its optimum supply at reasonable prices. In fact, this is a principal objective of the privatisation of the power sector.

For now and until the foreseeable future, however, Tenaga is expected to monopolise the supply side — with its vast network of transmission and distribution lines running over 10,000km to all corners in the peninsula.

The Director-General of Electricity Supply, Mohamed Annas Mohamed Nor, told a conference held in Kuala Lumpur in January last year that the main objective in promoting the participation of private generators is to help fulfil the rising expectations of customers for a reliable electricity service.

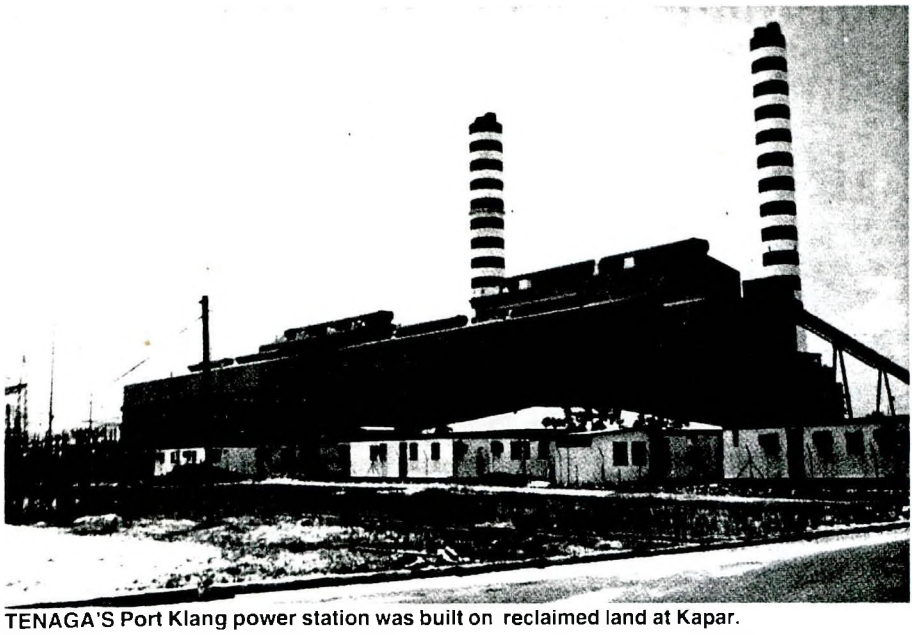
The Government has provided regulations to ensure the orderly development of the power industry and to protect consumers in a largely captive market from the monopolistic nature of the power utility.

Competition will come with the debut of several independent power producers (IPPs). According to Economic Planning Unit (EPU) Director-General Datuk Ali Abdul Hassan Sulaiman, the private sector has shown keen interest in power production despite the heavy capitalisation required in power projects. So far, the EPU has received some 30 applications from the private sector for IPP projects, including proposals for joint ventures between local and foreign interests.

YTL Corporation Bhd, the first IPP to

ALI: Private sector has shown keen interest.

ANNAS: Orderly development of industry.



TENAGA'S Port Klang power station was built on reclaimed land at Kapar.

be licensed, will build and operate two gas-fired combined cycle generating plants in Paka and Pasir Gudang with a combined capacity of 1,000MW. These two new power stations are expected to be completed and commissioned by the end of 1995. For this RM2 billion investment, United Kingdom's National Power Plc will provide the necessary expertise in management, operations and maintenance.

Sikap Power, the second licensed IPP, also plans to erect a gas-fuelled power station of 1,300MW generating capacity at Lumut. It will also use the combined cycle technology — for higher thermal efficiency of about 45 %, compared with about 37 % for a conventional oil-fired plant. To incur an estimated investment of more than RM3 billion, this new powerhouse will be completed in 1996.

WAN MOKHTAR: New power station in Besut

In February last year, Time Engineering Bhd and the Perlis State Economic Development Corporation signed a memorandum of understanding to jointly develop a RM1.4 billion power plant in Kuala Sanglang on a reclaimed site (like Tenaga's Port Klang Power Station built on reclaimed land at Kapar).

While 600MW will be installed in the first phase of development, the envisaged ultimate capacity is 2,000MW (which will make it one of the biggest, when completed, in Malaysia). It will also be a gas-fired combined cycle power station.

According to Terengganu Menteri Besar Tan Sri Wan Mokhtar Ahmad, a 400-600MW power station will be built in Besut at the end of the year. The first joint venture of its kind in the country between a local company and an American firm, it is expected to cost more than RM200 million.

Other interested parties are waiting in the wings.

Competition in the power industry will have to be viewed in the light of the overriding need for ensuring security and sufficiency of electricity supply, which in the future will have to be skilfully orchestrated with the participation of IPPs. While Tenaga as the long-established generator/supplier continues to play the key role, others are expected to play second fiddle.

In other words, IPPs are expected to play a complementary role rather than a strictly competitive one in the power generation sector. Although this role will become more and more significant as the country's power demand continues to grow in the coming decades, it is one that will have to be fine-tuned from time to time to prevent costly over-planting and redundancy.

Saga Of Delays

Our ultimate aim is to make Tenaga become a company responsible for power transmission and distribution only

By KHOR ENG LEE

BUILT on reclaimed land at Kapar about 16 km north of Port Klang, the Sultan Salahuddin Abdul Aziz Power Station (1,200 MW) is one of the largest in the region (although a mite smaller than the 1600 MW Senoko Power Station in Singapore). Conceived by NEB planning engineers about a couple of decades ago, it first appeared on the drawing boards in 1978, and its construction started with reclamation of the 208-ha site of coastal mangrove swamps before the end of 1980.

Under Phase I development, two 300 MW oil/gas-fired units were installed and became fully operational by mid-1986. Its capital cost was about RM900 million. The consultants were Ewbank Preece of UK.

Under Phase II development, another two 300 MW units were installed, of which one was commissioned in August 1988 and the other in February 1989. Although designed primarily for firing coal (making Port Klang the NEB's first coal-fired plant), it is capable of triple fuel firing. That is, it can fire coal, gas and oil individually as well as on a combination mode (coal/gas and gas/oil).

Phase II was developed at a cost of about RM1.1 billion. The consultants were Electricity Power Development Corporation (EPDC) of Japan.

Although conceived and designed 'as an urgent measure' (to quote one account) to meet the rapid escalation in power demand in the Klang Valley, the industrial heartland of the country, the story of the nation's premier powerhouse is a saga of one delay after another over the past decade.

Phase I development was delayed by 14 months, due to various factors including dithering over the use of coal as an alternative fuel for power generation.

The completion of Phase II was held back by two years. However, this two-year delay arose from a Cabinet decision to postpone its scheduled completion because of the 1985-86 recession.

Rather ironically, however, Phase II development was one of the main reasons for the shelving of the huge Bakun hydro project in Sarawak which had been programmed for implementation in 1987-95. According to a 1987 World Bank report, Bakun would be more economically viable if implemented in the first decade of the 21st Century (conjecturally by the year 2005).

Phase III development is another story altogether. The original plan was to install another couple of 300 MW oil/gas-fired plants.

With the higher than projected surge in power demand in 1989 and early 1990, however, the NEB was persuaded to introduce a 500 MW generating unit for the first time in this country. In 1990 the development cost was estimated to be about RM1.2 billion. This new plant was to be commissioned by 1996.

SAMY VELLU

Under the high demand scenario, the thinking then was to bring another 500 MW plant on stream under Phase IV — perhaps one and half years after Phase III. The objective was to meet the envisioned power demand in the mid-1990s and beyond.

However, the 1990 development plan was scrapped in the wake of the NEB's corporatisation in July that year. At about that time, the Board was in the process of inviting consultants for Phase III construction.

Not long after that, Energy, Telecommunications and Posts Minister Datuk Seri S Samy Vellu was reported in August 1991 to have said in Penang that tenders would be called soon for the privatisation of Phase III development, involving the installation of 1,000 MW. According to him, the Government envisaged an energy shortage in 1993 if steps were not 'constantly' taken to ensure adequate supply.

Less than a month later, he disclosed on September 2 that the Cabinet would discuss 'next week' the proposed privatisation of all power stations in the country, including Port Klang Phase III and Paka. His disclosure of the Government's plan to privatise the entire power generation sector must have sounded like a bombshell to the ears of many unsuspecting engineers in Tenaga Nasional.

'Our ultimate aim is to make Tenaga become a company responsible for power transmission and distribution only,' Samy Vellu was reported to have said.

On a tour of Port Klang in February last year on the eve of privatisation and public issue of TNB shares, journalists were told that the country's largest power station would be expanded nearly three times from 1,200 MW to 3,500 MW under Phases III and IV. While Phase III was expected to be completed by 1995, Phase IV would probably be completed by the year 2000.

Since then, however, Phase III has had to take another unexpected turn in its destiny.

Last month, Tenaga Nasional advertised in the local Press for the registration of interested bidders for offshore piling works as well as for prospective tenderers for the installation of two 500 MW gas/coal-fired generating units in Kapar. (Oil, already down to less than one-third of gross energy generation last year, is on its final laps in the power circuit).

Under the so-called 'fast track' programme (a catch-up or crash course) to increase Tenaga's generation capacity, the contract for Phase III will be awarded in mid-September 1993. While the commercial operation of the first 500 MW unit is scheduled for December 1996, that of the second 500 MW unit is targetted for June 1997.

Tenaga's Fast Track

A 'quick-fix' programme is being implemented to end the present power supply problem by mid-1994. New gas turbines are being installed to break the shortfall

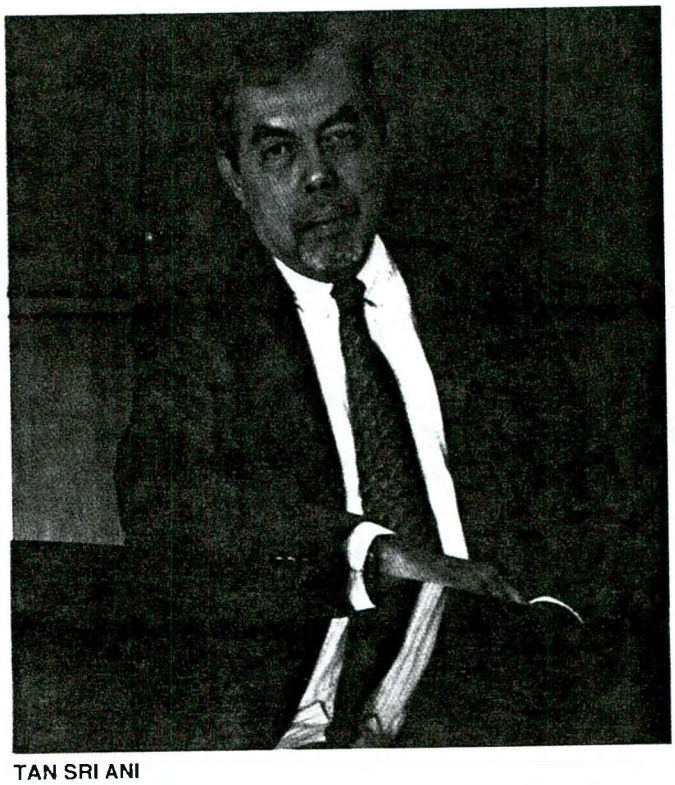
By KHOR ENG LEE

The present power supply problem is largely the result of an unprecedented erosion of Tenaga National Bhd spinning reserves. The large daily outage itself is due to both scheduled and unscheduled repairs and maintenance of generating plants.

Even though Tenaga (and its predecessor the National Electricity Board) had never faced this problem on such a scale and over such a protracted period, there is no power crisis in the country. There are no six to ten-hour blackouts from day to day as reported in Manila, nor such severe shortages as experienced in other countries like China and India.

Moreover, the public should know that Tenaga is taking the bull by the horns. The newly-privatised power utility is facing the current challenge by embarking on a fast track programme to quickly raise its gross generating capacity — not merely to break the present temporary shortfall in supply during the peak demand periods of the day, but also to re-establish a substantial reserve margin by the end of next year.

According to executive chairman Tan Sri Datuk Dr Ani Arope, the objectives of this fast track programme are two-fold. One is to provide an adequate reserve margin by mid-1994 so as to relieve the current tight electricity demand and supply situation. And the other is to increase the reserve margin to above 35% as recommended by the consultants, the UK-based National Grid Company (NGC) engaged by the Government to investigate the power failure which had blacked out the entire peninsula on Sept 29 last year.



TAN SRI ANI

Ani tells *Investors Digest:* 'By end of 1993, 600 MW will be added to the current capacity (5,589 MW). The reserve margin for the year will improve between 14% to 22%. By end of 1994, there will be further improvement with additional capacity of 2,000 MW and the reserve margin will improve further to a maximum of 42%.'

According to the NGC report which was submitted to the Cabinet on March 3, the reliability of the system and the security of supplies are critically dependent upon the continuous availability of an operating generating plant margin of at least 450 MW above the daily peak demand.

'Over the next two years, provision of such spinning reserves from a combination of additional gas turbine operation, firm interconnection transfers and daily rota demand management should be achieved as quickly as possible,' NGC advised.

PLANTING-UP OF GAS TURBINES

Year	Project	Capacity (MW)	Estimated Cost (RM Million)
Aug 93	Connaught Bridge (Package B)	2 X 34	80
Sept 93	Kapar IV (Package D1)	2 X 27	123
Sept 93	Kapar IV (Package D2)	2 X 27	131
Oct 93	Pasir Gudang (Package C)	2 X 34	90
Oct 93	Kapar (Heavy Store)	2 X 34	104
June 94	Kapar	5 X 100	750
Aug 94	Segamat	5 X 100	(APP)
Total		**1312**	**1278**

Source: Tenaga Nasional

It also said that longer term reliability and security of supplies require continuous planned reserves of 35% over the annual peak demand for each future year. NGC also called for 'an appropriate seamless investment' (a term for the planning engineers to help interpret and translate into reality) in transmission system infrastructure and operational facilities.

There are no six to ten-hour blackouts from day to day as reported in Manila, nor such severe shortages as experienced in other countries like China and India

Tenaga's fast track programme entails planting-up of ten 30 MW gas turbines and ten 100 MW gas turbines (see table) for an additional generating capacity of 1,300 MW.

While the 30 MW units will take six to eight months to be installed, the larger 100 MW units will take a longer period — 14 to 16 months. The implementation of the whole lot should be completed by August next year. The estimated cost of this fast track programme comes to nearly RM1.28 billion.

To meet the mounting power demand in the mid- and late-1990s and beyond, Tenaga will install two 500 MW generating units for Port Klang Power Station Phase III.

According to Tenaga, this unit's size (the largest to be installed in this country) as well as its configuration is 'the most economic planting up sequence to meet the demand of the system grid for the period 1996-1998'. In 1997, the peak demand is anticipated to be in the region of 7,500 MW.

Moreover, 'the introduction of larger size units of 500 MW in the generating system will also enable Tenaga to reap the economy of scale of larger size plants'.

The estimated cost of this Phase III project is RM2.5 billion.

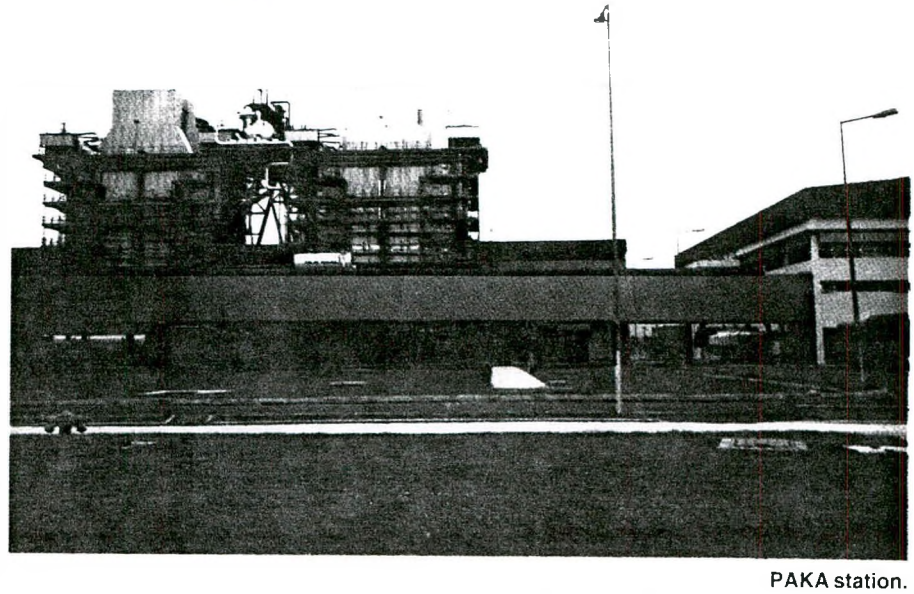
Phase IV development is presently under study and at the planning stage. According to Ani, the ultimate generating capacity of Port Klang will be in the region of 4,500 MW.

Thus it will maintain its present status as the largest power station in the country and as one of the largest in this part of the world.

Perak Menteri Besar Tan Sri Ramli Ngah Talib disclosed in November 91 Tenaga's plan to build a 4,000 MW power station in the Manjong district. According to Ramli, its construction will take 15 years at an estimated cost of RM8 billion. Phase I (1,000 MW) is expected to involve more than RM2 billion.

According to Tenaga, preliminary EIA studies as well as soil investigation on the site of the Manjong Power station commenced last year. Both environmental and soil studies are still going on.

To meet the long-term power requirements, Tenaga is expected to plant up 6,000 MW to 7,000 MW by the year 2000 in addition to its present total generating capacity of about 5,600 MW.



PAKA station.

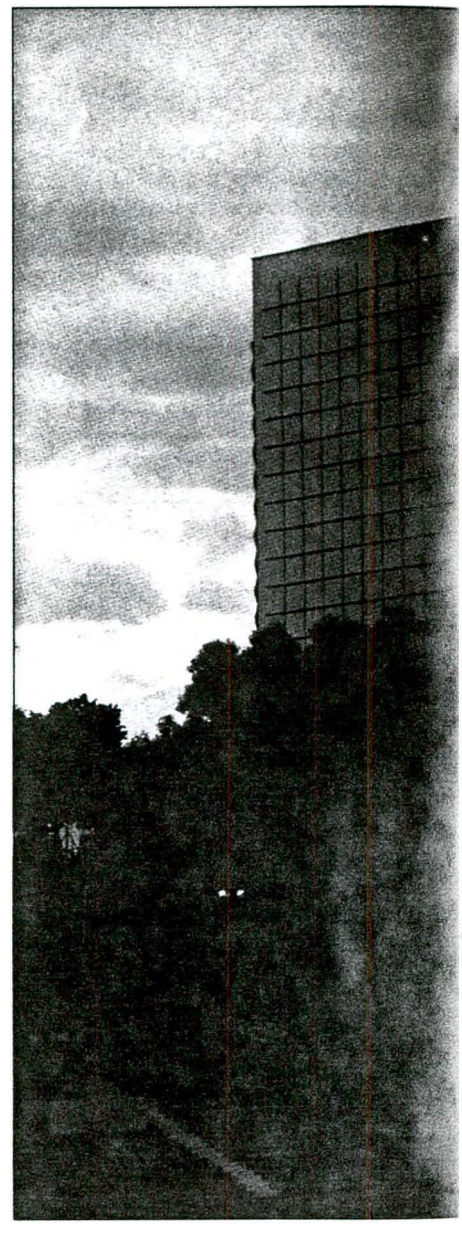
POWER WOES

Much has been said and written about the so-called energy crisis which struck the bright and breezy Malaysian scene recently, to the extent of nearly "blacking out" all other news and views about the rest of the world. By now, almost everyone who is anyone will be aware of the nature and extent of the problem, its major causes and effects, and the steps that have or can be taken to overcome the setback. As with every accident or emergency, the immediate priority is not to start arguing over rights and wrongs or to find fault with particular groups and individuals but to find ways to resolve the crisis and, to ensure that, as far as possible, such hitches do not recur.

For the sake of all concerned, it is to be hoped that, by the time this article is published, much of the crisis will be over. This no doubt will mean that the "bigger crisis" which Tenaga Nasional (TN) had warned against in mid-February would not rear its head again — a welcome change which makes it apt and timely for all interested parties to conduct the "de rigour' postmortem. *Corporate World* ***did its own search and study of the situation, and the following serves to summarise the outcome of our "undercurrent" work:***

The term "energy crisis" is an unfortunate and misleading one for what really happened. A quick and simple look at the "energy" entries in terms of the Second Outline Perspective Plan (OPP) and the Sixth Malaysia Plan immediately shows that, for obvious reasons, the term should correctly be reserved for those sources of power which not only gets distributed and used in the form of electricity but also those which have little or nothing to do with generators, transmission cables and other accessories. In fact, electricity as a source of energy or power forms only a sub-category of the overall energy genre. As such, it is highly false and misleading, not to mention alarmist as well, to describe the recent or "current" hubbub over electricity supplies as an case of energy crisis, of the same type and magnitude as the truly "shocking" energy crisis which rocked the foundations of world development in the recent past. As for the term "crisis" itself, its use in the context of what has taken or is taking place is also open to question. A close look at the facts and figures concerned shows that:

- the margin of shortage at peak consumption periods (be these counted in seconds, minutes or hours) was only around 100 megawatts (MW), as against the stated total "installed capacity" of 5,500MW
- the overall duration of supply-shortage incidents (caused mainly by the shutdown of generating plants and equipment for conversion and/or repair and maintenance purposes) was in fact for a period of days and weeks — hardly long and damaging enough, when viewed in perspective, to constitute a catastrophic crisis
- in terms of geographical spread and distribution, and actual "downtime" and other forms of loss and damage caused, the incidence of supply stoppages and supply outages (as the occurrence is technically called), was by no means extensive and persistent enough to merit the label of crisis. As Tenaga Nasional pointed out in late February there were only 20 days between last September and March when power supplies had been cut off within limited areas and centres in different parts of Peninsular Malaysia.



CRISIS OR HICCUP?

Timing

On January 31 this year, within just A FEW DAYS of the official disclosure that an "energy crisis" had arisen, a well-placed and senior TN official was reported to have announced plans by the utility supplier "to embark on a project whereby residents in each housing estate *(sic)* will be taught ways to conserve energy". Significantly enough, in making the announcement, Dr Zamzam Jaffar (the energy techno-economics manager in TN's research and development department) took pains to stress that the pending project "would not hurt (TN's) profits...." This had its ominous echo at the height of the power shortage hooha when the ever-voluble Energy, Post and Telecommunications Minister Datuk Seri S Samy Vellu made it very clear to his audience that, in no way (through the fall in the price of public-listed TN shares) would he allow the Malaysian Government's equity investment in the utility firm "to go down the drain". Reading between the lines, especially when the two seemingly innocent statements are seen in juxtaposition, one cannot help but conclude that much of the hidden and unstated cause of the power shortage imbroglio was to be found in the undue obsession that relevant powers-that-be seemed to have had for the profitability of TN's operations (at least during the all-important maiden year of its "fully privatised" operations) and for the attractiveness of its share prices (vis-a-vis its public issue price).

As is well known, when greed and profitability gain undue emphasis in the operation of monopolies and other enterprises, overt as well as hidden repercussions are bound to arise sooner or later. As fate would have it, the "tremors" of the fast-building power-quake shook the public scene at just around the time that TN was finalising its first-ever "record-breaking" annual report as a public-listed privatised monopoly.

These observations aside, the fact remains: when speaking about the launching of TN's "smart savers" public campaign, an officer of the

COINCIDENCE ... energy crisis started at just around the time that Tenaga Nasional was finalising its first-ever annual report as a public-listed privatised monopoly

status and position of Dr Zamzam, even when dealing with the "momentous" subject of power conservation, found little need to highlight the problem of supply shortfalls in the energy field, much less the imminent impact of a power crisis! To the casual bystander, it seems hard to believe that, as recently as early February, just a few days before the "energy crisis" made headline news, even the best-placed of TN's own policy and decision makers were totally unaware or unconcerned about its imminent mega strike...

Still on the subject of timing, it is also no doubt significant that, as recently as the "momentous" release of TN's first annual report in its newly-acquired capacity as a public-listed privatised monopoly, TN found little occasion (if any) to warn of a coming difficulty in the supply and demand equation for electricity supply. This is all the more surprising in view of the fact that, just two month before the official publication release of TN's 1992 annual report (on November 14), there had been a so-called "national' breakdown in power supply to users, a failure which took TN three whole days to effectively put right. Surely if there existed any need at all for TN to warn anybody (including

Mitigating The Financial Burden

Dated November 14, 1992, the 1992 annual report of Tenaga Nasional (TN) was released in conjunction with the company's second annual general meeting held on December 22. Since TN became a public-listed company on May 22, 1992, the 1992 annual report (for the year ended August 31, 1992) is the company's first as a public-listed company. Stressing that TN took less than two years to change from a corporatised statutory body to a public-listed company, the annual report points out that the transition in question "presented one of the greatest challenges ever known in the Malaysian corporate scenario".

Armed with hindsight (in view of what actually happened recently), the reader would naturally expect to find some reference or mention of the power supply problems that TN had faced or was expecting to face in line with its well-touted corporate mission "to provide an essential part of the national economic infrastructure by ... continuously meeting customers' requirements for energy safely, reliably and economically...." The shortage or "breakdown" issue, lest we forget, was very much uppermost in the public consciousness late last year when a massive power failure took place causing widespread blackouts which, in certain areas lasted as long as three days. Technically, the still-mystifying September 22 power failure took place outside the timeframe of the 1992 annual report but this does not explain why such a serious incident should be completely ignored or overlooked in the context of TN's overall and long-range perspectives.

To put the issue in the correct perspective, the following are excerpts of the chairman's statement headed "Prospects":

"The strong performance of the Malaysian economy augurs excellent prospects for expansion of electricity demand. Sales of electricity is hence likely to increase at a rate of 12.4 per cent annually from 1990-1995, and at 9.4 per cent an-

Table A: Supply and Distribution of Electricity, Malaysia (in million kilowatt-hours)

	1989	1990	1991	
TOTAL SUPPLY	**21,900.7**	**25,280.8**	**28,373.5**	**31,**
Local generation:				
Total	21,889.6	25,262.2	28,335.3	30,669.
Public installations	20,689.7	23,548.6	26,631.1	29,809.
Private installations	1,199.9	1,713.6	1,704.2	1,
Imports	11.1	18.6	38.2	76.
TOTAL DISTRIBUTED	**21,900.7**	**25,280.8**	**28,373.5**	**31,**
Local consumption:				
Total	18,788.5	21,681.0	24,085.8	23,98
Industrial, commercial & mining	14,895.9	17,388.5	19,373.2	14,542.
Domestic & public lighting	3,892.6	4,292.5	4,712.6	5,
Exports	163.7	75.8	63.4	
LOSSES	**2,948.5**	**3,524.0**	**4,224.3**	**4,**

* *Based on actual returns for first eight months of 1992*

Sources: Tenaga Nasional, Dept of Electricity Supply, Sabah Electricity Board, Sarawak Electricity Supply Corp

nually from 1995-2000 as economic growth moderates at a sustainable level.

"Peak demand in the National Grid System is expected to exceed 6,000MW in 1995 and 9,500MW in the year 2000, compared to 4,498MW presently. The rapid surge in demand provides many incentives for the Company to investigate cost-effective Demand Side Management (DSM) options. Successfully implemented, DSM will encourage more efficient utilisation of electricity and improved utilisation of capital-intensive generating plants, resulting in cost-savings to both customers and the Company....

The Company's generating capacity is expected to increase (to over) 9,000MW by September 1996 predominantly with gas-fired plants. Besides the completion of the rehabilitation and gas conversion projects of several major stations in 1992/1993, new generating capacities comprising gas, coal and hydro plants will be commissioned to meet demand requirements in the next five years.

"The National Grid is being further strengthened by the implementation of several projects, besides identifying new projects in selected strategic areas.....

"The financial year under review also witnessed the emergence of proposals for independent power production (IPP) by private companies and consortia. These companies would construct power stations and generate electricity, but would sell it in bulk to the Company. This is in response to the Government's policy to promote competition in the electricity generation sector. One objective of the Government's competition policy is to provide incentives to improve efficiency in power generation. The other objective is **TO MITIGATE THE FINANCIAL BURDEN (emphasis added, Editor)** of the Company in an industry that is rapidly growing."

The form and content of the extracted paragraphs are best left to speak for themselves. ❐

POWER SURGE ... sales of electricity is likely to increase at a rate of 12.4 per cent annually from 1990-1995

its staff and executives) of supply problems even in the far-from-immediate future, the annual report would offer the best platform and opportunity for doing so. This was not done and the RM64 billion question arises: why not?...

Vaunted "Monopoly"

Contrary to all the recent publicity about TN's nationwide "monopoly" over the supply and distribution of electrical power in Malaysia, the most basic and commonly-available of relevant statistics reflect a different picture. The simple fact ***(see Table A)*** is that, at least in terms of the supply side of the equation, power generation has come from private as well as public installations. In Peninsular Malaysia itself, people with long memories (as well as a better understanding of public affairs) are well aware that, prior to recent changes and manoeuvres affecting TN, authorities like the Penang City Council and, more pertinently, the Perak River Hydro-Electric Power Company played significant roles not only in the generation of electricity but also in the actual distribution of the utility within their respective areas of operation. Even under the so-called "national grid" system that is supposed to operate in Malaysia today, the reality of geography and other factors has necessitated the large-scale supply and distribution of electricity to be shared out between TN (Peninsular Malaysia), the Sabah Electricity Board (Sabah) and the Sarawak Electricity Supply Corporation (Sarawak).

The currently "hot" issue of "non-TN" generation of electricity is in fact a non-issue. It is and has long been a fact of life in Malaysia that, apart from standby generators and "informal sector" situations (read *pasar malam* if your vocabulary dictates such interpretations), there exist many situations in which the generation and distribution of electricity outside the "national grid" context can and must be done on an independent or non-centralised basis. Ships, of course, are ex-

SMART SAVERS CAMPAIGN ... energy conservation at a leading shopping complex in Kuala Lumpur

amples of such a situation. However, of more direct interest in the context of the national grid concept has been the incidence of such trends as the use of organic waste (biomass) to generate electricity in oil palm plantations and, in a more recent instance, the operation of "in-house" power supply units in the Genting Sanyen paper mill complex in Sepang, Selangor. The cogent point about such operations, as was publicised in the case of the Genting Sanyen situation, is that excess capacity can and will be channelled into the national grid to complement and supplement the generation capacities of TN-built or TN-owned power plants.

In the wider context of regional and world experience, it is of course well known that, contrary to what some may often be led to believe, there does and can exist numberless examples of electricity or "utility" services being provided by private sector or non-centralised suppliers and agencies. Interestingly enough, according to one Japanese industrialist who was commenting on the power crisis situation in February, in countries like Japan, there even exist situations where, contrary to all conventional wisdom about utility monopolies, end-users or consumers of electricity can readily switch from one competitive supplier to another according to their satisfaction or otherwise with their existing supplier. What the source failed to bring out, of course, was the cost factor involved in having such an "ideal" system.

Cost Considerations

The last-mentioned point about competitive or non-monopolistic systems for the supply and distribution of electricity provides the opportunity to highlight a major characteristic of large-scale power generation which, as in the case of cement plants, tend to get easily overlooked by ill-informed or simple-minded commentators. This is the phenomenon commonly referred to as the tendency for "capital intensive" projects and industries to undergo a pattern of "lumpy" development — in contrast to the gradual or "step-by-step" growth pattern that most ordinary businesses and industries (like kacang putih selling, to cite an "extreme" example) are apt to show or experience. As is the case with a RM500-RM1,000 million cement plant, a giant generation project like the well-known Bakun Dam venture is not something one can begin or abandon on a free and easy basis. Much planning has to be done and the necessary "political will" or commitment has to be provided for such long-gestation and costly ventures to be launched, completed and kept in operation. Needless to say, the failure or inability to implement projects like the much-mooted Bakun Dam project *(see inset)* takes its toll of the total supply and demand equation — to form the subject of much comment and criticism whenever a crisis or "scandal" situation erupts into public view.

"Cross Border" Exchanges

Apart from the "lumpy pattern" of development which affects the supply and demand equation of electricity at any place and time, another factor (favourable or otherwise) which has its own peculiar effect on the situation is the power utility's ability to be easily exported or imported into a given territory. In short and simple terms, it can be said that this characteristic of power supply logistics has largely manifested itself in Malaysia through the existence and operation of bilateral agreements between Malaysia and Singapore, Thailand and even Indonesia, for the export or import of electricity across the relevant national boundaries by means of "cross border" lines including under-

sea cables.

Obviously such arrangements provide the opportunity for each relevant country to buy in or sell off electricity supplies to balance any deficiencies or excesses in the local stock of available power at any time, especially in situations of serious emergency. However, one unexpected effect of such "convenient" and logical arrangements has been the recent incident where a massive failure in Singapore coincided with a correspondingly massive failure in Peninsular Malaysia. Rightly or not, the incident led many observers (despite denials and explanations from the authorities) to provide their own interpretations and analysis of the incident. Until today there still prevails much speculation and controversy over what really happened.

Conclusion

From the given account, it is obvious that the so-called "energy crisis" which hit Malaysia (at least in the Pe-

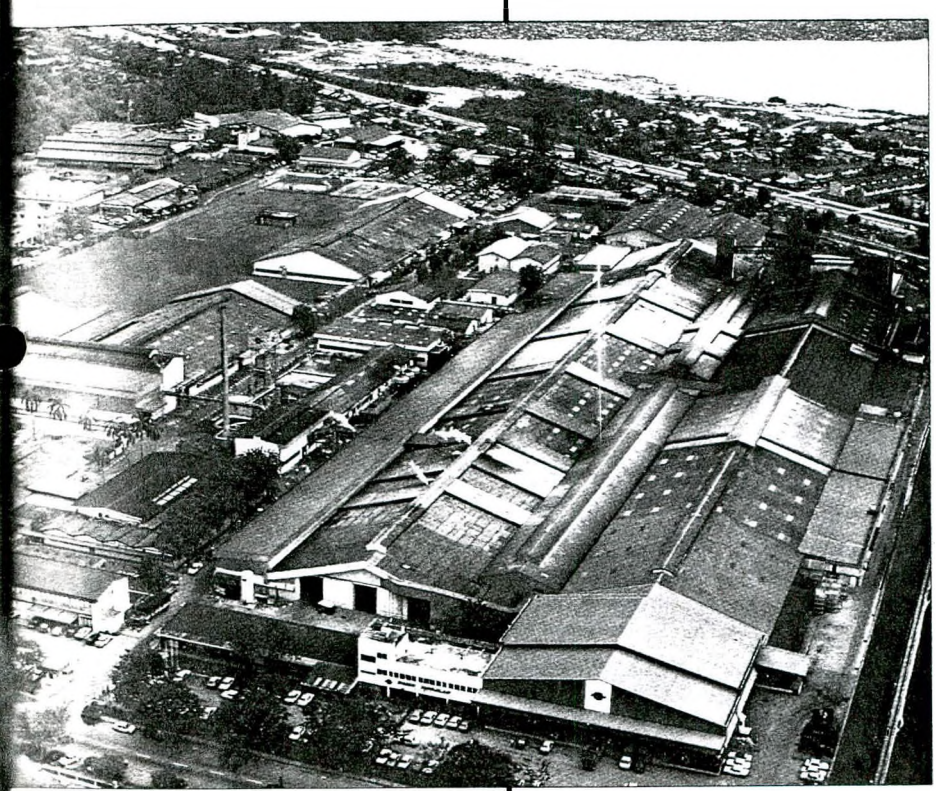


IMAGE ... any form of energy crisis will certainly project a poor and questionable image about the country's performance

The Bakun Hydro-Electric Project

Outstanding among the projects which are supposed to be carried out to maintain and increase the supply of electric power in Malaysia to meet national needs and aspirations was the long-delayed Bakun Hydro-Electric Project. For the ordinary man-in-the-street, the exact details of the project may sound so technical or "esoteric" that little purpose is served in providing them. Nevertheless, it is no doubt useful at this stage, especially in the context of "energy crisis" controversies, to project at least the general picture of what the project signifies. For this purpose, ***Corporate World*** reproduces the following foreword to a publication called *Project Information, Bakun Hydroelectric Project* which was released by the Ministry of Energy, Telecommunications and Posts in March 1986.

"Malaysia has a large hydropower potential with an estimated energy output of 123,000 (Gigowatt hour, GWh) per year or equivalent to the capacity of more than 45 power stations the size of that at Port Dickson. Today only a small fraction of that has been harnessed: the major dams being Temenggor, Bersia, Kenering and Kenyir in Peninsular Malaysia, and Batang Ai and Tenom Pangi in Sarawak and Sabah respectively. All of them generate very cheap electricity. It costs LLN (now Tenaga Nasional) for instance 6.6 sen per kWh to generate electricity from its major hydroelectric plant compared to 18 sen from oil and diesel stations. Electricity from mini-hydro plants is not cheap; they are constructed mainly to supply remote villages.

The proposed Bakun Hydro-Electric project (in Sarawak) will be one of the world's lowest-cost hydro-electric dams and when implemented will supply the nation with electricity we can depend upon — indigenous, cheap, clean and reliable, and shielded from the influence of fluctuating international fuel prices. It will boost industrial development, including the locating of industries in Sarawak. Bakun will displace alternative imported fuel for coal-fired power stations after 1996 and will not decrease the utilisation of gas for power generation. Natural gas will find expanding markets for its most beneficial utilisation in petrochemicals, transport, direct combustion and in earning foreign exchange.

The Bakun Hydro-Electric Project will bring along with it the benefits of development. The dam water control will improve year-round navigation on the Rajang and Balui Rivers. The people of inland Sarawak will enjoy better economic development, basic infrastructure and communication, public services and improved education facilities for their children....

The (Malaysian Federal) Government has accepted the project in principle and its implementation will take into account thee evolving economic situation."

Corporate World has been reliably told by a Ministry official that the project is still under consideration for due implementation. Located on the Balui River in the Upper Rajang River Basin (not far from Belaga town), the project was originally estimated to cost around RM7.8 billion. Nearly 70 per cent of the project cost was planned to be sourced from outside Malaysia. ❐

Table B: Electric Power and Energy Demand Forecast for Malaysia (1985–2010)

	1990*	1995	2000	2010
Sarawak				
Generation (GWh)	1,470	2,590	3,640	7,020
Peak Demand (MW)	280	480	670	1,290
Required Generation				
Capacity (MW)	340	580	800	1,550
Sabah				
Generation (GWh)	1,200	2,000	3,090	7,280
Peak Demand (MW)	230	390	600	1,410
Required Generation				
Capacity (MW)	280	470	720	1,700
Peninsular Malaysia				
Generation (GWh)	18,100	26,000	35,900	68,800
Peak Demand (MW)	3,130	4,560	6,310	12,080
Required Generation				
Capacity (MW)	3,750	5,470	7,570	14,500
Total Malaysia				
Generation (GWh)	20,770	30,590	42,630	83,100
Peak Demand (MW)	3,640	5,430	7,580	14,780
Required Generation				
Capacity (MW)	4,370	6,520	9,090	17,750

GWh=GigoWatt hour, MW=MegaWatt
** For the actual 1990 positions, see relevant table elsewhere*
Source: Ministry of Energy, Telecommunications and Posts, March 1986

ninsula) was by no means a straight and simple phenomenon, lending itself to easy discussion or understanding by poorly-initiated outsiders or, worse still, by self-appointed know-alls and parties with some "ever-blunt" axe to grind. As in all such situations, ***Corporate World*** takes the stand that, from the viewpoint of constructive and responsible criticism, the best thing to do is to look at the facts and figures as well as to make allowances for circumstantial and other "non-material" considerations.

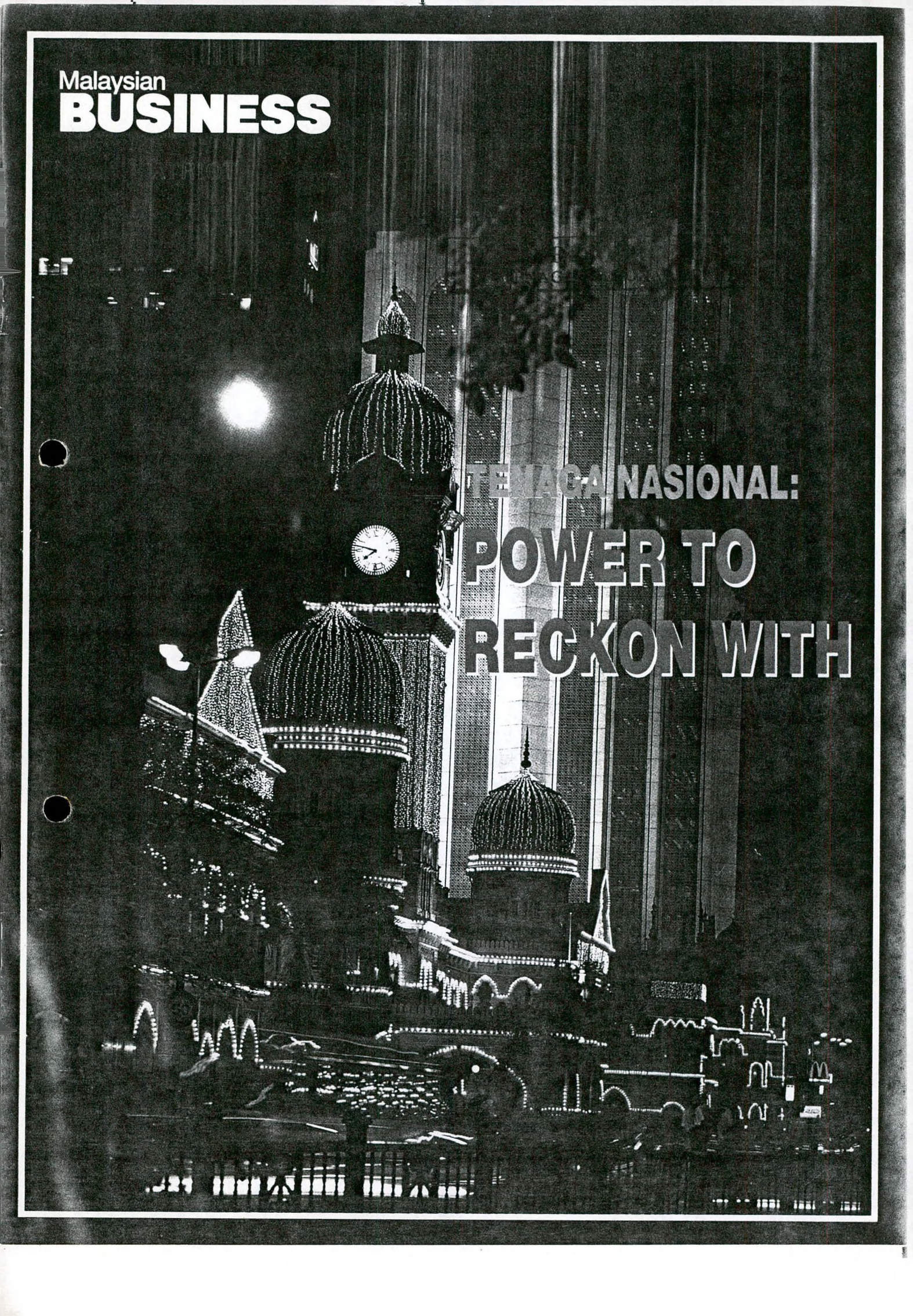
In passing, it can be argued that, for reasons highlighted in our account, there remain many aspects of the "energy crisis" affair which appear suspiciously inexplicable or unreasonable to most observers and analysts. Taking a positive or even "sympathetic" approach to the development, ***Corporate World*** is of the view that much of what has happened can best be understood in the context of the "first year" syndrome. Having been successively corporatised and privatised as well as public-listed on the Kuala Lumpur Stock Exchange in rapid succession and driven by the understandable urge to show — for commercial and other reasons — highly impressive results in the first year of its operation as a privatised and listed utility corporation, TN has allowed itself to be less than careful in the planning and execution of its power generation and distribution responsibilities.

The result was the "energy crisis" with all that its incidence implies in terms of loss and damage not only to productive output and potential but also to less tangible factors like the discouragement of foreign investment and the projection of a poor and questionable image about the country's performance as well as the policy of privatisation and public listing.

On the plus side, it can be said that, no doubt in "pollyanna" fashion, the incident was a blessing in disguise: it provided an apt and timely check on likely excesses and abuses in the existing system, thus serving a useful purpose in teaching and warning the relevant groups and individuals against possible landmines and pitfalls.

The "bolt-from-the-blue" energy crisis is now (touch wood!) under control but the whys and wherefores of its incidence, like the findings of a postmortem, should prove useful, not so much for the finding of scapegoats and the satisfying of idle curiosity but essentially for the spotting of faults and weaknesses and the resultant correction and forestalling of relevant flaws. ❐

Malaysian
BUSINESS



TENAGA NASIONAL: POWER TO RECKON WITH

FINDING ITS CORPORATE FEET

The power utility gets a handle on growing demand and increased competition.

Jacqueline Ho

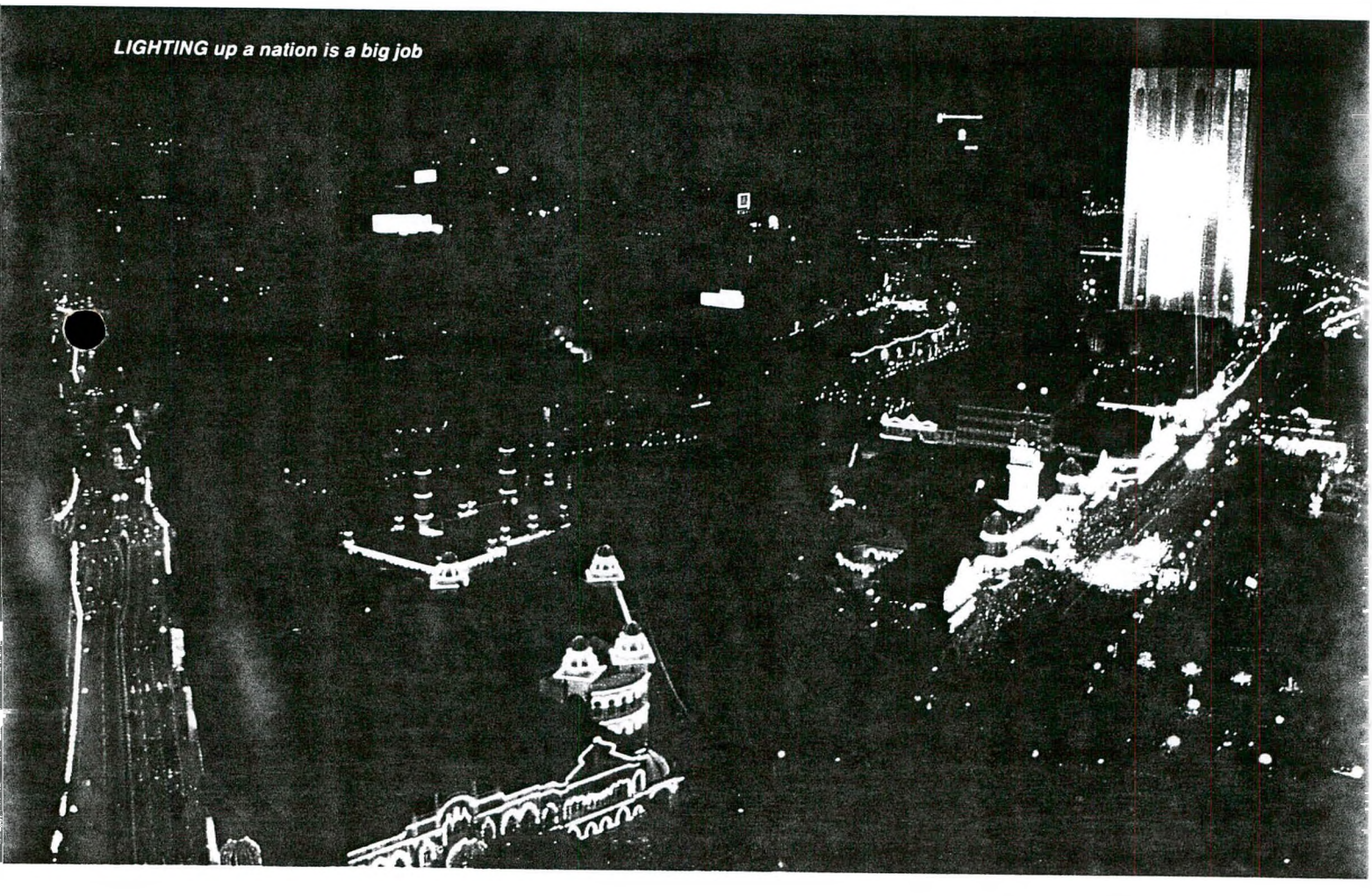
DESPITE AN encouraging set of interim results, some analysts aren't too enamoured of Tenaga Nasional Bhd. The national power company posted a profit before tax of RM911 million for the six months to Feb 28, an increase of 15.3 per cent, on the back of turnover of RM2.4 billion.

Most analysts forecast a profit before tax of between RM1.3 to RM1.4 billion for 1993. Based on a share capital of 3 billion, it gives an earnings per share (EPS) of about 45 sen and a price earnings ratio (PER) of around 22 times.

On a positive note, Tenaga is in the enviable position of facing more demand than supply. Domestic demand is expected to grow at between 12 and 15 per cent per annum.

Energy demand in the Asia-Pacific region is expected to grow by nearly 4 per cent a year in the countdown to the year 2000, twice the expected world growth. Executive director of Siemens AG Werner Schroder said that Asia will spend US$6 billion a year for the next five years on turbines to power their booming economies.

However, a negative point is the seemingly gradual erosion of its monopoly over power generation, transmission and distribution. While its privatisation prospectus was carefully worded to enable the advent of the IPPs, analysts say that recent developments seem to be paving the way to an erosion of its transmission



LIGHTING up a nation is a big job

activities as well.

That the Malaysian government is equally committed to competition as well as privatisation is without doubt. That it does not augur well for Tenaga's bottomline seems the logical conclusion.

An analyst with a foreign research house reasons that competition in transmission following competition in generation is a rational move. "There is an urgent need to increase transmission and distribution capacity," he says.

Tenaga, recognising the need, has announced plans to spend over RM7 billion to upgrade its transmission lines, including a new 500kV line along the West coast. Tenaga currently has 10,641km of transmission lines. This is expected to increase to 13,508km by the end of 1995.

The main voltage levels currently are 275kV, 132kV and 66kV. The 275kV and 132kV lines are part of the national grid while the 66kV lines, located mainly in the south, are being phased out.

"It'll be more efficient because energy loss over the higher voltage line is lower," says the analyst.

However he reckons that transmission capability may be given to certain IPPs as well. He notes that Genting Sanyen has offered to build a 66kV line linking

THROUGH 99 YEARS

Electrical power generation has come a long way.

■ *Jacqueline Ho*

THE YEAR: 1894. The place: Rawang. Electrical power first made its appearance in Malaysia 99 years ago when two tin miners, Loke Yew and Thamboosamy Pillai, used an electric generator to pump water from their tin mine.

A year later in May 1895, the Kuala Lumpur Railway Station was installed with electric lighting — the first of its kind in KL.

From then on, there was no turning back. The year 1900 marked the operation of the first power station in the Peninsula. This was the Sempam Hydro Power Station in Raub, Pahang. It was built by the Raub-Australian Gold Mining Co Ltd.

The other states soon followed. Penang was first electrified in 1904 with the commissioning of the Sungai Pinang Power Station. In 1905, Kuala Lumpur received electricity for the very first time, supplied by the Ulu Gombak Hydroelectric Power Station.

In the early years, electricity was provided by a number of private companies. For example, in the late 1920s Kuala Lumpur was further supplied with power by the Ulu Langat Hydroelectric Power Station, which was owned by Sungei Besi Mines Ltd.

Melaka obtained its public electricity from the Malacca Electric Lighting Co in 1913. And two years later, Johor Bahru was provided with power by Central Engine Works Ltd.

In 1916, it was Seremban's turn. The town received its first electricity from a station operated by United Engineers. Up in Kedah, Huttenbachs Co Ltd started to provide Bukit Mertajam, Sungai Petani and Alor Star in 1920.

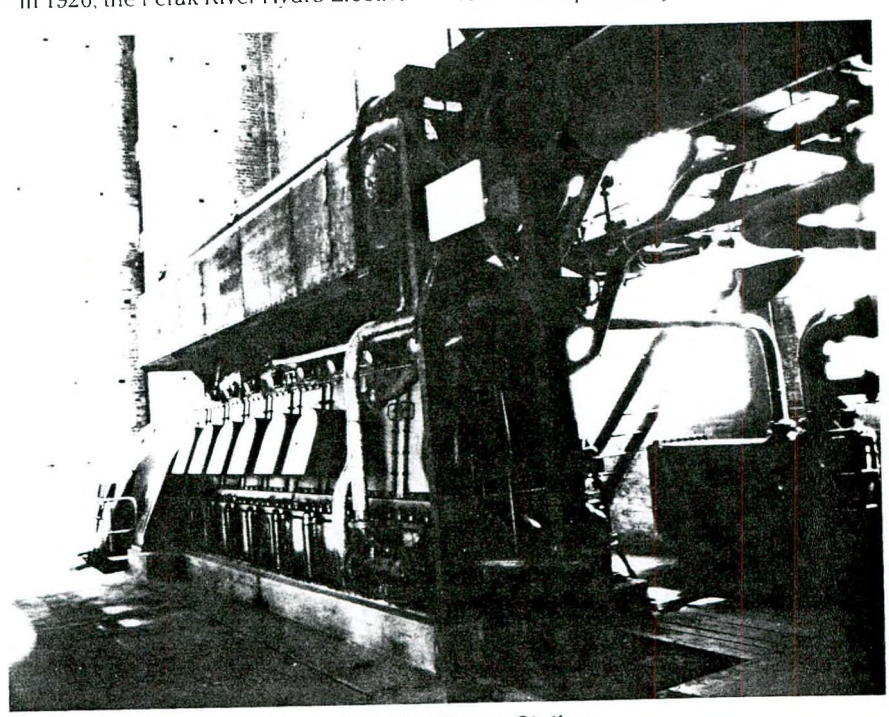
Throughout the 1920s Huttenbachs also provided electricity to other parts of Kedah and parts of Province Wellesley and Perak, Kuala Pilah and Tampin in Negri Sembilan, and Pulau Sebang in Melaka.

In 1926, the Perak River Hydro Electric Company Ltd was set up to cater to the electricity demands of the tin-rich Kinta Valley.

In 1927, the Federated Malay States Electricity Department was established. During the Second World War, the British forces followed an 'enemy denial' policy. In the face of advancing Japanese troops, the retreating British destroyed vital infrastructure and other utilities, including power plants and equipment.

However the Japanese army managed to rehabilitate nearly half of the power stations to operating status. When the British administration returned to Malaya at the end of the war, they regionalised electrical supply into the Northern, Central and Southern sectors. But power was still in many hands — with the central government, local authorities and private companies operating their respective electrical installations.

All this changed in 1949. The Electricity Ordinance No 30, which came into force on Sept 1 that year, established the



In years gone by: The Connaught Bridge Power Station

its power plant in Ulu Langat to the national grid. Thus some analysts think it logical that the government may consider giving the right to transmit electricity to those IPPs which are capable of it. For instance, Sikap Power.

Sikap, which has sold an 80 per cent stake to Malaysian Resources Corporation Bhd (MRCB), will build a mega 1,300MW plant costing nearly RM3.5 billion in Lumut on the Perak coast. The company is believed to be arranging loans up to RM2.7 billion at the moment.

The analyst notes that the Lumut plant, one of the biggest on the West coast, is well sited to supply power to the northern states directly.

That the government, being the major shareholder with over 70 per cent, has a major say on how Tenaga is run seems accepted. And it appears that the government holds Tenaga's purse strings tightly. In a previous interview with ***Malaysian Business*** (March 16-31, 1993 issue) Tenaga's executive chairman Tan Sri Ani Arope said there may be a need to hold things 'a little bit firmer' at the moment, before the right level is reached. Even so, the decision making process is a long one. Decisions made by the board goes to the Economic Planning Unit, the Ministry of Finance and the Ministry of Energy, Telecommunications

Central Electricity Board (CEB) which was given the responsibility for generating and distributing electricity.

The 40MW Connaught Bridge power station in Klang, Selangor was the first station to be commissioned by the CEB. A 66kV high voltage transmission line between Connaught Bridge and Kuala Lumpur and further south to Bangi, Seremban and Melaka was also commissioned at the same time. This marked the beginning of the national grid.

In 1956, the rural electrification programme was launched under the First Malaysia Plan (1956-60) with an allocation of RM4.6 million. Under the programme, the CEB provided perimeter security lighting for centralised new villages in remote areas using diesel generation sets.

With the declaration of independence in 1957, 'Malaysianisation' of the CEB gradually took place with Malaysians being trained to take over operations. Up till then, most CEB senior officers were expatriates.

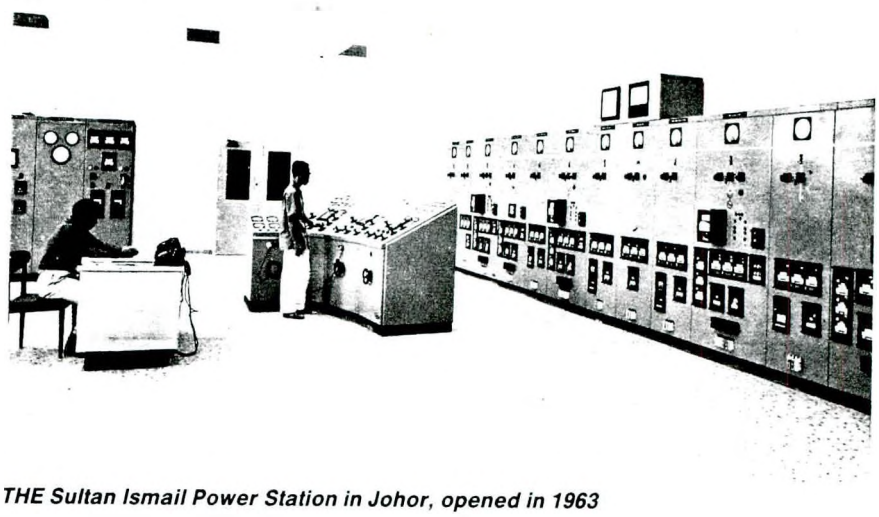
In 1963, the CEB completed the first of its immense hydroelectric schemes in the Cameron Highlands. The same year, the Sultan Ismail Power Station was opened in Johor.

On June 22, 1965, the CEB was renamed the National Electricity Board of the Sates of Malaya (NEB).

Between 1964 and 1982, the NEB consolidated the generation, transmission and distribution of electricity within itself by taking over the installations of several privately owned entities. For instance, it took over Huttenbachs' installations in 1964. In 1976, it took over the Electricity Supply Department of the Penang Municipal Council. In 1982, it was the turn of the Perak River Hydro Electric Power Co Ltd and its subsidiary Kinta Electric Distribution Ltd.

The 1970s saw the government adopting the four fuel policy. Soaring oil prices in the early 1970s decreed that a diversified mix of oil, coal, hydro power and natural gas for power generation was the best policy. The electrical giant has so far foresworn nuclear power, though that eventuality has not been discounted.

There is no clear cut choice of fuel as the priority is flexibility. Economics is not necessarily the deciding factor when it comes to choice of fuel. Hydro power is the cheapest in terms of operating costs but capital investment is prohibitive as is site suitability. Coal is relatively cheap and stable in price but bulky to store and transport.



THE Sultan Ismail Power Station in Johor, opened in 1963

Oil prices have been volatile since the early 1970s. For example, during the 1991 Gulf War, oil prices escalated to US$28 per barrel from US$10 per barrel. However most analysts expect the benchmark West Texas crude to remain around US$17 per barrel for the rest of 1993.

However, the fuel of choice for the future increasingly is natural gas since fuel accounts for 50 per cent of operating costs. Gas is a cleaner fuel and more importantly, Malaysia possesses an abundance of it.

On July 1, 1990, the NEB was corporatised under the Electricity Supply (Successor Company) Act 1990. In line with the government's privatisation policy, Tenaga Nasional Berhad was incorporated as a public limited company under the Malaysian Companies Act 1965.

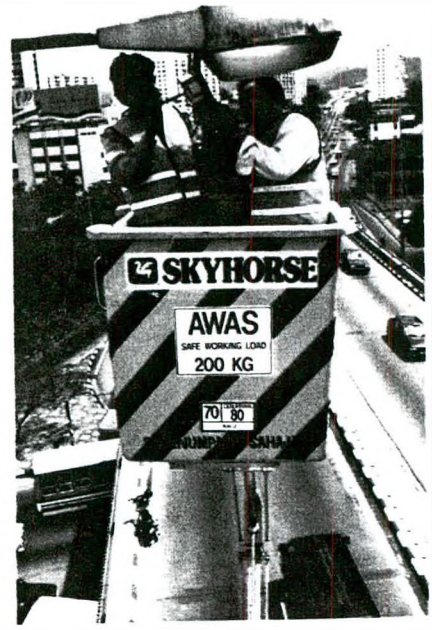
On Sept 1, 1990, all properties, rights and liabilities owned by the NEB were transferred to Tenaga.

Tenaga's operations are regulated through a licence issued by the director-general of electricity supply who was appointed by the minister of energy, telecommunications and posts. The licence dated Sept 1, 1990, entitles Tenaga to use, work, operate any electrical installation on Peninsular Malaysia.

The licence is for a non-renewal period of 21 years effective Sept 1, 1990. It contains a number of provisions aimed at maintaining Tenaga's pre-eminence as the generator, transmitter and distributor of electricity. However, the Malaysian government's dedication to competition has witnessed a gradual erosion of the utility's monopoly position.

In return, the utility company has a duty to continue with rural electrification and is required to obtain the approval of the authorities before changing the electricity tariff based on the CPI-M+Y formula (where CPI is the Consumer Price Index, M denotes efficiency and capital expenditure, and Y the fuel component).

On May 28, 1992 Tenaga was listed on the Kuala Lumpur Stock Exchange at RM8.00, a premium of RM3.40 above its issue price of RM4.50. It was the largest float in the history of the KLSE. Tenaga is the largest company on the KLSE with a market capitalisation of RM33.3 billion (on Aug 20, 1993).



TENAGA has lowered costs by improving efficiency

and Posts.

Most houses are maintaining a neutral stance on the utility since Tenaga's electrifying debut on the KLSE last year. The stock opened with a premium of RM3.50 over its offer price of RM4.50, which surprised quite a few in the market who had expected a premium of about RM2.50.

Its share price took a beating during the power crisis earlier this year, tumbling down to RM8.50 from around RM10.00. In the current bull run, the share has risen to over RM11.00 but analysts reckon that earnings will be a plod rather than a race because of the uncertainties.

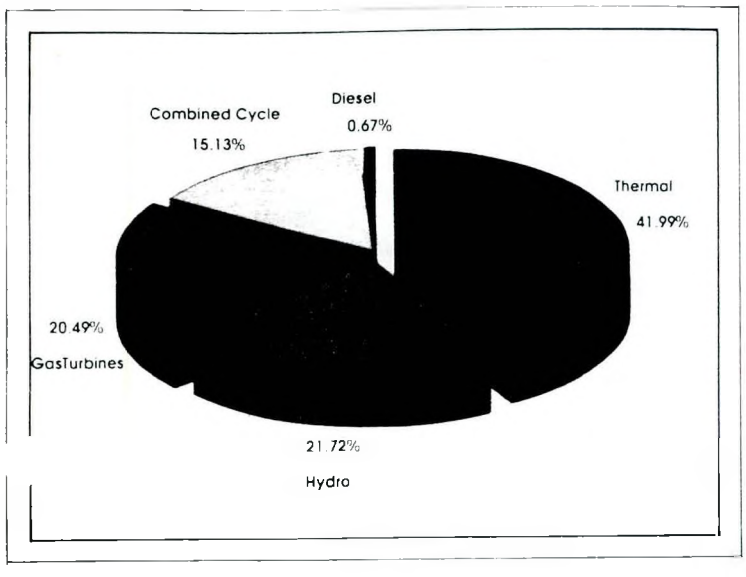
Another negative point is the non-appearance of the CPI-M+Y tariff formula (where CPI is the Consumer Price Index, M denotes efficiency and capital expenditure, and Y the fuel component). It was believed that Tenaga was preparing to implement the formula in September. However raising electricity prices, which has remained unchanged since 1987, may have repercussions which are not welcome.

According to a Tenaga study, Malaysia has the third lowest electricity tariff, at 18.78 sen/kWh, compared to eight other Asian countries (see table).

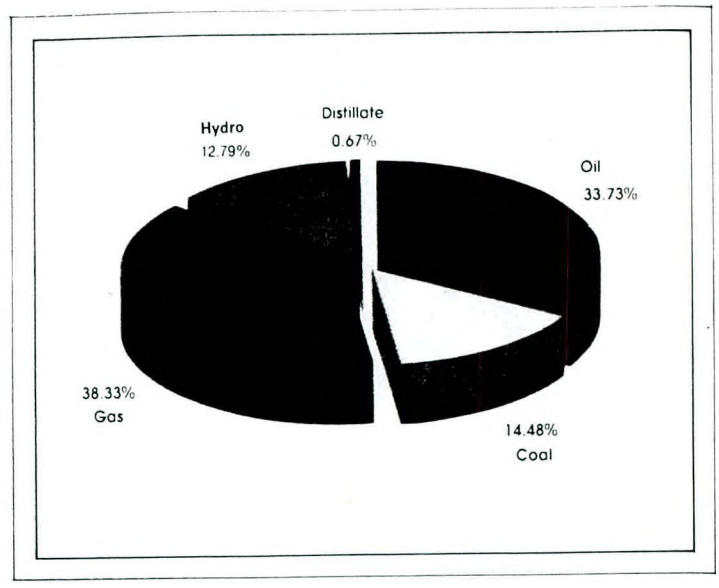
In mid-August Tenaga's Ani announced that electricity tariff rates will not be raised, despite the rising cost of fuel.

Fuel is the single most important cost item in electricity supply and accounts for over 50 per cent of operating costs. To deal with the oil price shocks, the utility has followed a four fuel policy using oil, gas, hydro power and coal.

TENAGA'S INSTALLED CAPACITY AS OF DEC 31, 1992



GENERATION MIX BY FUEL TYPE IN 1992



HOW TENAGA'S PRICES COMPARE WITH OTHERS (1992)

Country	Domestic	Commercial	Industrial (sen/kWh)	Others	Average
Malaysia	21.38	23.27	15.4	18.51	18.78
Philippines	29.04	28.51	26.15	17.88	27.77
Singapore	21.18	18.65	16.09	-	19.99
Indonesia	17.00	29.33	16.05	21.48	18.18
Thailand	15.11	22.07	16.88	-	19.77
Japan	57.50	52.35	34.93	26.26	45.05
Taiwan	22.17	25.84	20.78	-	21.51
South Korea	24.10	27.03	14.38	15.45	17.89

Source: Tenaga Nasional Bhd

Since Malaysia has an abundance of natural gas, the power company has shifted towards the use of gas as a fuel in the generation mix. By 1995, gas is expected to be the main fuel, providing 65 per cent of the mix.

Even if gas is cheaper and cleaner, analysts point out that it has the highest fuel cost per unit of output. But oil prices are relatively stable at the moment, around RM17 per barrel for the benchmark West Texas crude.

So there is no need to raise the rates yet, says Ani, due to a happy combination of factors, among them being the government's success in keeping inflation in check. Furthermore, Tenaga has been able to increase its sales by 14.5 per cent, 4.5 per cent more than its target of 10 per cent. According to Ani, sales were set to grow at 15 per cent per annum, translating into extra revenue of RM70 million a year. The utility had also lowered its costs by increasing productivity and improving efficiency.

Analysts reckon that Tenaga's bottomline will be further boosted if the tariff rebates to the industries is withdrawn completely. Tenaga had followed a policy of giving discounts on a sliding scale to various industries, among them manufacturing and hotels. The withdrawal of the rebate could add around RM240 million per year to Tenaga's bottomline, figures one analyst.

Tenaga is even more optimistic. A Tenaga report notes that the withdrawal of the discounts would increase the average selling price to 20 sen/kWh from 18 sen/kWh, resulting in contributions to profits amounting to RM300 million in 1993 and RM390 million in 1994.

The tariff discounts, ranging from 10 to 20 per cent, were withdrawn from June 1. However it is believed that some industries had appealed to ministerial level for the withdrawal to be suspended until the energy situation stabilised.

On an optimistic note, the demand for electricity is growing by leaps and bounds. An analyst expects growth in electricity consumption in Malaysia to outpace GDP by 1.5 times. Tenaga expects demand growth at around 13 per cent compounded, translating into a healthy compounded turnover growth of 12.5 per cent.

Industrial demand is the fastest growing sector due to the rapid industrialisation of the country. An analyst put industrial demand growth at around 15 per cent this year, which is slower compared to 19 per cent last year. Industrial customers contribute the most to Tenaga's coffers with sales of over 11,701 GWh (gigawatts) in 1992.

Commercial demand is expected to slow in tandem with the slowdown in the economy. The one sector which is growing this year compared to last year is the residential sector, as greater affluence leads to increased usage of electrical appliances, especially air-conditioners.

THE POWER GAME

Tenaga tackles the mathematics of demand and supply.

Jacqueline Ho

IN MID-AUGUST, Tenaga Nasional executive chairman Tan Sri Ani Arope announced, with palpable relief, that there had been no load shedding for the first half of the month. 'For the first time in eight months, we have a comfortable reserve margin of 800MW,' he said.

Ani, the man in the spotlight, had not lost his sense of humour or reason through the bad times. He once told ***Malaysian Business*** when the days were darkest, 'Never curse the darkness. Somebody light a match. Then you can find where the switch is.'

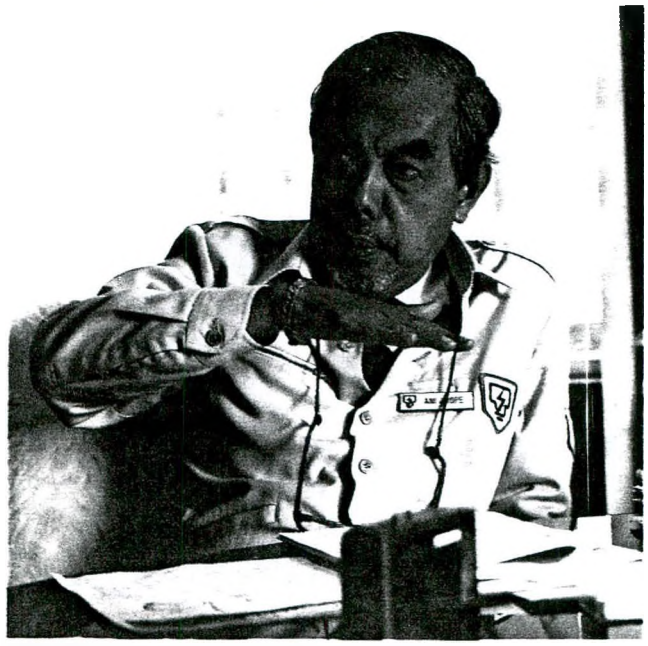
The switch in this case was the commissioning of new turbines and the re-installation of those which had been taken out for major repairs. Matters had reached crisis point back in March when over 1,000MW had to be taken out for crucial maintenance works. At that point, Tenaga's spinning reserve (or excess capacity) was a distinctly low 7 per cent (total generating capacity of 4,833MW as against maximum demand of 4,490MW). The accepted safe margin is 25 to 30 per cent.

Tenaga is spending some RM450 million on 10 new turbines of 30MW each from France, Japan, the United States and India — four of which were installed in early August. The rest will be installed in stages till October.

Also early in August, Tenaga signed an agreement with Singapore's Public Utilities Board to buy 100MW of electricity on a regular basis for six months.

With the power purchase and commissioning of the 10 turbines, Tenaga's installed capacity will be 6,155MW as against daily anticipated demand of 5,052MW. This will give a more comfortable reserve of 17 per cent as against the mere 7 per cent in March.

That is a measure of relief for annoyed householders and embattled Malaysian industries. In March, when the crisis was first acknowledged as such, the Federation of Malaysian Manufacturers (FMM) energy and utilities committee chairman G (Mike) Krishnan is reported to have said, 'We are very pleased that that ministry (of energy, telecommunications and posts) has said that there is actually a power shortage.'



ANI: We have a comfortable reserve margin

Manufacturers are understandably irked by the power shortage. They took a severe hit when the grid went down last Sept 29. In the aftermath, the nation-wide blackout could cost Tenaga more than mere embarrassment. The FMM had estimated losses to be in the region of RM220 million, based on 1991 sales of manufactured products of RM80 billion.

In mid-August, energy, telecommunications and posts minister Datuk Seri S Samy Vellu told the Dewan Rakyat that 19 companies had filed compensation claims against Tenaga to the tune of RM250 million. The claims were being studied by Malaysia National Insurance Sdn Bhd from whom Tenaga had taken a public liability policy.

Whether MNI or Tenaga has to fork out any cash remains to be seen. The official explanation for the blackout is a lightning strike at the Telok Kalong transmission lines which then tripped the whole grid.

Even so, Tenaga's embarrassment could have been avoided if the advice of some of its officials were heeded. In mid-1991, some Tenaga (then-National Electricity Board or NEB) officials pointed out that capacity could run short of demand.

This was highlighted in the 1990 annual report which noted the narrowing gap between installed capacity and maximum demand from 1992 onwards and the fact that there would be no reserves at all in mid-1995 — even if capacity had been brought on stream as planned!

Tenaga's 1990 annual report also noted that demand for electricity was to grow at an annual average of 8.7 per cent. In the event, analysts reckon that 12 to 15 per cent is closer to the mark, especially with Malaysia's rapid industrialisation. Since September 1990, Tenaga had added nearly 1,000MW to the system. But it is not enough. In fact, Ani says the power company was going to plant up an extra 1,400MW which would have given a safe excess capacity of 25 per cent. But nothing was done. The reason: 'Tenaga is serving too many masters,' says an analyst succinctly.

Ani attributes the inertia to a combination of factors, among them the Gulf War and 'other external factors'.

Even so, the dark days seem to be behind the utility now. The short term

measures have brought the breathing space needed to get its act together. Its executives are aware that a lot of work will have to be done to increase the power supply.

According to Ani, by the year 2000, supply should be around 14,000MW, more than double what is generated currently. 'We have to allow for an excess of 1,000MW at any one time which may be taken out for repairs and maintenance,' notes Ani. Demand is expected to be around 10,000MW. At such levels, the requisite safety margin will be achieved.

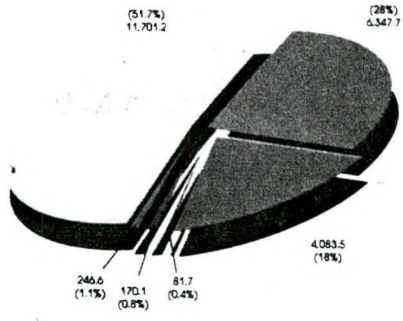
It won't be a fast ride and the road will be expensive. Tenaga's fast track projects should add 1,145MW to the grid by June next year. This will take total generating capacity to 6,890MW.

In the longer term, the power supply will be further augmented by the IPPs. So far, the Economic Planning Unit in the Prime Minister's Department has given the nod to four — YTL Bhd, Sikap Energy Ventures Sdn Bhd, the Sime Darby consortium and the Perlis Plantations consortium. The four IPPs should be supplying nearly 4,000MW from five plants. The largest is Sikap, which will build a 1,300MW plant costing between RM3.3 and 3.5 billion.

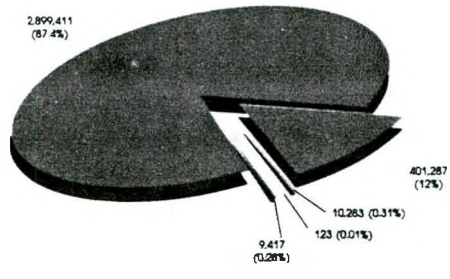
Either way, the figures seem to be swinging the other way. If all the IPPs and Tenaga's own planting-up programme come onstream the country will face an excess supply over demand.

Observers reckon that the EPU had

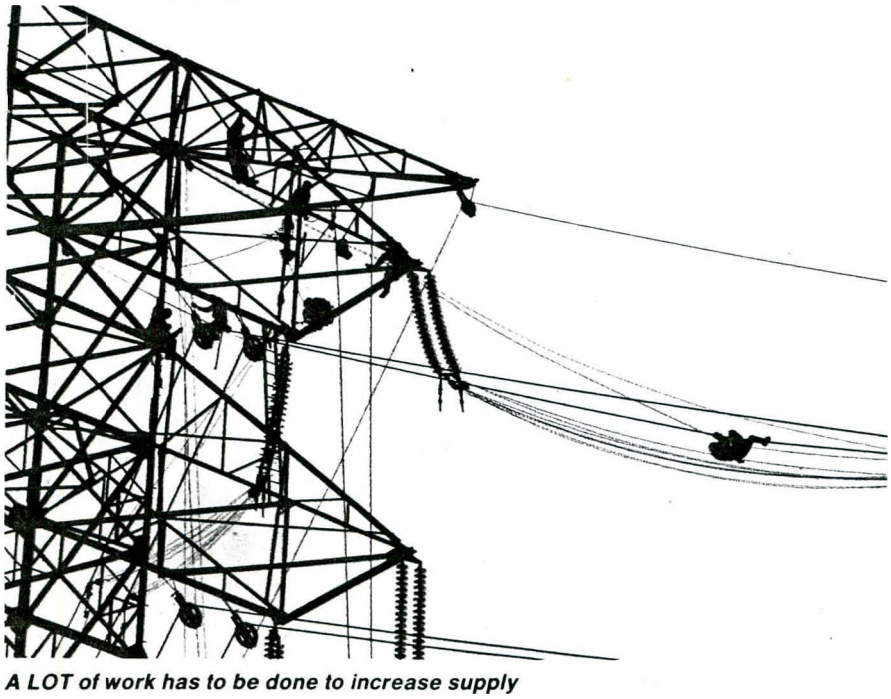
SALES OF ELECTRICITY BY CUSTOMER GROUP, 1992



SALES (GWh)	
Domestic	4,083.5
Commercial	6,347.7
Industrial	11,701.2
Mining	246.6
Public & street lighting	170.1
Export	81.7
Total sales	22,630.8



NUMBER OF CUSTOMERS	
Domestic	2,899,411
Commercial	401,287
Industrial	10,283
Mining	123
Public & street lighting	9,417
Total number of customers	3,320,521



A LOT of work has to be done to increase supply

received in excess of 50 applications for IPP licences, of which 30 were turned down for various reasons. Nine companies, either by themselves or in consortium with others, were successful in getting four licences, leaving a further 11 still be considered. It may become one IPP too many.

Ani says that Tenaga will plant up further to provide up to 10,000MW. Its allocation for power generation is estimated to be about RM9 billion.

But in the face of competition in generation from the independent power producers, analysts reckon that it could shift its expenditure elsewhere, like transmission and distribution.

In August, Ani says that Tenaga has allocated RM10 billion to upgrade its transmission and distribution network till the year 2000, including a new 500kV transmission line. The main voltage levels currently are 275kV, 132kV and 66kV. The 275kV and 132kV lines are part of the national grid while the 66kV lines, located mainly in the south, are being phased out. MB

POWER TO THE PEOPLE

IPPs add a new dimension to the power game.

Jacqueline Ho

THE RACE TO power up was the talk of the town recently when the mere whisper of an independent power producer (IPP) licence sent the most moribund of stocks soaring.

While some have materialised, like Malaysian Resources Corporation Bhd (MRCB), others have had to seek lucre elsewhere. For instance, Damansara Realty (ex-Kesang) announced its intention to produce power in the Philippines. Yet others are waiting for their dreams of power to come true. For example, Time Engineering Bhd which was supposed build an IPP in Perlis is still waiting.

In the wake of the power crisis, the call went out to the private sector to provide electricity to the nation. Observers reckon that the Economic Planning Unit (EPU) in the Prime Minister's Department had received in excess of 50 applications for IPP licences, of which 30 were turned down for various reasons.

Nine companies, either by themselves or in consortium with others, were successful in getting four licences, leaving a further 11 still being considered. So far, the EPU has given the nod to YTL Bhd, Sikap Power Sdn Bhd, the Sime Darby consortium and the Perlis Plantations consortium.

The four IPPs should be supplying nearly 4,000MW from five plants. The largest is Sikap, which will build a 1,300MW plant.

Given that Tenaga has plans to plant up to provide up to 10,000MW by the end of the century, it may soon become the case of one IPP too many. (See accompanying stories.)

That Tenaga views the IPPs as friends is not doubted. Tenaga Nasional executive chairman Tan Sri Ani Arope said in March, 'We would like to create a win-win situation where every party involved will get comfortable returns on the power generation business.' (***MB*** March 16-31, 1993.)

Pragmatism is the order of the day as analysts concur that the IPPs will remove a heavy capital burden from Tenaga. The capital expenditure on building environmentally friendly, combined cycle power plants runs to billions of ringgit.

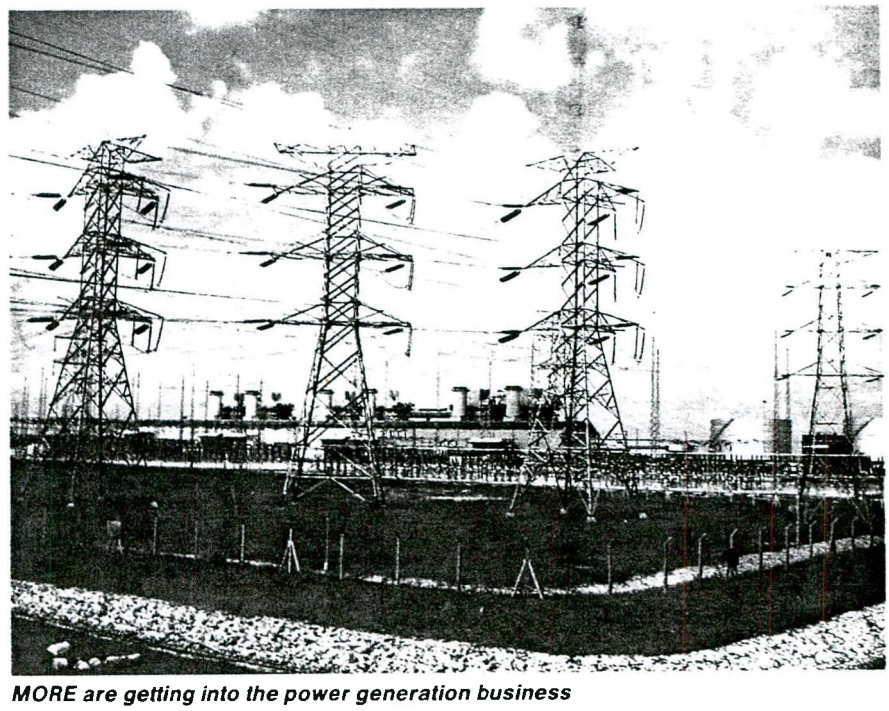
As a rule of thumb, the cost of a combined cycle plant is RM1,800 to 2,200 per kilowatt. With the current rise in materials prices, it could end up as much more. At the last count, YTL's two plants were estimated to cost RM2.5 billion to RM3 billion. The two, in Pasir Gudang, Johor and Paka, Terengganu, were originally on Tenaga's own drawing board. Sikap's plant, meanwhile, costs between RM3.3 billion and RM3.5 billion.

While capital costs are high, the returns are potentially very lucrative. In July, Sikap managing director Astaman Abdul Aziz said that the power plant would be able to generate about RM1.3 billion turnover annually when fully commissioned.

Sikap sold 80 per cent to high-flying MRCB for RM40 million after an aborted attempt to seek a reverse listing via KLSE Second Board-listed Actacorp Bhd. The restructured MRCB, which also owns majority stakes in media companies, the New Straits Times Press and TV3, has identified power as one of its core businesses.

Despite the apparent difficulties in getting started, there seems no shortage of those who would jump on the IPP wagon, not least of which are the international players which have arrived in droves. Analysts note that the more immediate profits are to be made from the construction of the power plants.

The other big player, YTL Power, which was awarded the first IPP licence, has yet to get started on its projects. Latterly, it was announced that YTL Power had awarded the construction and procurement contract to German company Siemens AG instead of its international partner, British-based National



MORE are getting into the power generation business

Power, as was widely believed. Observers reckon the event would have given food for thought to Sikap's international partner, Belgian-based Asea Brown Boveri.

It was also reported that YTL is in the final stages of negotiating the financing for the project and expects to commission its first turbine in early 1995.

The other two IPPs announced so far are small compared to YTL and Sikap, and little information has been forthcoming so far. In May, the EPU gave the go-ahead for two further IPPs — in Melaka and in Negri Sembilan. The Melaka IPP licence was believed to have been awarded to an unlisted company called Powertek Sdn Bhd, which is linked to ex-Innovest Bhd chairman Datuk Dr Mokhzani Abdul Rahim.

Powertek is believed to have courted some big names to form a consortium, including Robert Kuok-controlled Perlis Plantations (35 per cent), Arab-Malaysian Development Bhd (30 per cent), the Malacca Foundation and possibly Tenaga (35 per cent).

Analysts expect the Malaccan IPP to be a small 250MW combined cycle plant, costing around RM650 million, to be built on a fast track basis.

The Negri Sembilan IPP is marginally bigger — 450MW — costing around RM1.2 billion. The companies in the consortium are Sime Darby Bhd, MRCB (which also owns an 80 per cent stake in Sikap's power venture), little-known Hypergantic Sdn Bhd, the Negri Sembilan government and Tenaga. The equity stakes are unknown.

It was reported that Tenaga was to take up equity up to 20 per cent in the IPPs. However Ani said in July that the utility would only take a stake if the offer was right. 'It would cost up to RM500 million to take stakes in all the IPPs,' he added.

While there's no doubt that power projects will make money, analysts reckon that the companies involved in the Malaccan and Negri Sembilan IPPs will not see much impact on their bottomlines. 'Thirty per cent of the earnings of a small power plant is not a lot,' notes one.

In Tenaga's case, the trade off for sharing the capital burden may prove costly in the long run. Analysts point out that Tenaga is buying power from the IPPs at a rate higher than its own generation costs.

The national utility has signed power purchase agreements with both YTL and Sikap to buy power at an average rate of 15.5 sen/kWh while its own generation costs are about 10 sen/kWh. Some analysts reckon it could be less than that — around 8 sen/kWh. Transmission and distribution costs are around 2 sen/kWh each.

Currently, Tenaga is negotiating with Genting Sanyen to purchase power. The power plant was built to supply power to Genting International's giant paper mill in Ulu Langat. It is expected to supply 30MW to Tenaga by the end of this year and is believed to be negotiating for the issue of an IPP licence.

Tenaga's historical operating cost is about 10.5 sen/KWh. Given rising fuel costs, Tenaga's Ani ***Malaysian Business*** (March 16-31, 1993 issue) that he does not see Tenaga producing electricity at less than 13.5-14 sen/kWh.

At a purchase price of 15.5 sen/kWh, an analyst reckons that Tenaga's operating profit will be cut by about half. Simply, Tenaga currently produces energy at 10 sen/kWh which it sells at 20 sen/kWh. Purchasing power at 15 sen/kWh would cut half of its operating profit. He figures the only way for Tenaga to recover its margins would be to raise tariffs but that does not seem forthcoming — at least not in the near future (see accompanying story).

Furthermore, Tenaga has guaranteed to buy the base load off the IPPs. The base load relates to the operating efficiency of the generating plant which in the case of combined cycle plants is around 70 to 75 per cent. It is also that portion of electricity sales which needs to be supplied on a constant basis and therefore is the most stable revenue source.

By 1996, Tenaga will command only 50 per cent of sales while having 80 per cent of installed capacity and the IPPs will have more than 40 per cent of the market from only 20 per cent installed capacity.

Under the power purchase agreement signed with YTL, Tenaga has to buy 72 per cent of YTL Power's capacity. If YTL's power purchase agreement sets the precedent for the rest of the IPPs, it seems more than likely that Tenaga's revenue from power generation will fall.

The scenario also means that Tenaga will be making the shortfall in power not produced by the IPPs. Unfortunately, profit margins for electricity at peak times tend to small as the most inefficient generators are switched on only at peak times.

An analyst reckons that by 1996, Tenaga will command only 50 per cent of electricity sales while having 80 per cent of installed capacity and the IPPs will have more than 40 per cent of the market from only 20 per cent installed capacity.

Back in March, Ani discounted the possibility of the cheapest, most efficient producer loading its power on to the grid first. 'The financial burden on the IPPs would be great. You don't want to bankrupt people overnight. They have to make some money. We have to get our electricity,' he said.

The number of agencies overseeing the power sector also confuses analysts. 'The regulatory framework is still unclear,' says one. The Economic Planning Unit vets the credibility of prospective players, while the actual licence is given by the director-general of electricity supply. Since the government has a vested interest in the power needs of the nation, various ministries are also involved, including the Ministry of Finance and the Ministry of Energy, Telecommunications and Posts.

IN THE RIGHT PLACE AT THE RIGHT TIME

Leader Universal Holdings stays one step ahead of the competition.

■ *Jacqueline Ho*

'THEY GOT THEIR act right at the right time and the right place,' says an analyst of KLSE-listed cable maker Leader Universal Holdings. Punters seem to think so too. Penang-based Leader's share price reached a year high of RM11.90. At the time of writing, the share had settled to RM10.90.

By all accounts, Leader's management has lived up to the company's name and kept one step ahead of the competition. For example, Leader started producing cross-linked polyethylene (XLPE) high voltage cables in 1992 to complement Tenaga's introduction of new system voltages up to 132kV.

According to analysts, while rival companies are still expanding capacity in power cables, Leader has started to upgrade production of its telecommunications cables. Plans to move into high technology fibre optic cables are nearing fruition. An analyst says the higher margins are made in the telecommunications and fibre optics cables.

Subsidiary Leader Optic Cable Sdn

LEADER has started to upgrade production of its telecommunications cables

Bhd will develop Malaysia's second and largest plant to produce optic fibre cables on a 5-acre site at the proposed Penang Technoplex in Bayan Lepas, Penang. Analysts say that Leader is finalising equity and technology transfer negotiations for the joint venture project — estimated to cost around RM50 million.

Leader group chairman and managing director Datuk H'ng Bok San has said that he expects operations to start by the middle of 1994. The plant is expected to produce up to 100,000km of fibre optic cables annually which will be sold to the domestic and regional markets.

Cables — power and telecommunications — are a booming industry because of Malaysia's rapid industrialisation. Leader and its cohorts are the principal benefactors of the RM21 billion allocation under the Sixth Malaysia Plan to upgrade the power and telecommunications sectors. A quick glance at Leader's glowing balance sheet — a 50 per cent increase in profit before tax to RM66 million for the six months to June 1993 — is proof enough. Group turnover increased by 31 per cent to RM267.24 million.

Thus a back-of-envelope calculation puts Leader's net earnings per share at 35 sen (based on fully diluted 256.07 million shares and at a tax rate of 32 per cent) and a price earnings multiple of 31 times.

The healthy bottomline is helped along by the fact that the price of aluminium and copper — its raw materials — have been low historically due to oversupply. Analysts expect prices to be stable for the next two years.

A further boost is the announcement made recently by minister of energy, telecommunications and posts Datuk Seri S Samy Vellu that RM13 billion will be spent on telecommunications. Analysts reckon that about RM3 billion to RM4 billion will be earmarked for cables.

The fortuitious state of affairs does not detract from the fact that Leader's new management has called the shots correctly so far. Leader is the offspring of a long and complicated restructuring and merger between Universal Cable (M) Bhd and Leader Cable Industry Bhd.

The merged group's strength lies in the fact that it has covered all the bases, geographically and product-wise. It has 15 factories — located strategically in Kedah, Johor, Singapore and Sarawak — producing low and high tension power cables and a range of telecommunications cables. The group also produces upstream products like aluminium and copper rods and wires.

Analysts estimate Leader to have over 50 per cent of the telecommunications cables and about 45 per cent of the power cables markets. 'They'll probably concentrate on the network power cables — 132kV, 11kV and 3kV — for the next two years,' says one analyst with a foreign research house. The 132kV lines transmit electricity from the generation plants to the distribution points where it's downloaded to the 3kV and 11kV cables for distribution to households and offices.

With the imminent move into fibre optics, Leader is well-positioned in all sectors of the cable market. 'Fibre optics is the future of telecommunications,' says one analyst.

The very fine glass rods transmit voice, sound and data in light pulses practically error-free over long distances very fast — up to 100,000 times faster than ordinary copper cables, boasts the latest technology.

It is believed that Leader will be 'assembling' (that is, colour coding, binding and so on) the fibre into cables rather than manufacturing the fibre itself. 'There is a glut of fibre but not of cables,' notes an analyst.

The only other optical fibre producer in Malaysia is Petaling Jaya-based Optical Communications Engineering Sdn Bhd (Opcom). Opcom started operations in mid-1992.

Leader chairman H'ng said that Leader had submitted a tender to supply Syarikat Telekom Malaysia with fibre optic cables, accessories and related engineering services. The contract is worth around RM600-800 million over five years.

The only thing, if any, holding Leader back may be capacity constraints. Its factories are believed to be operating at near full capacity. In a bid to expand, the group attempted to take over suspended rival cable manufacturer Federal Cables, Wires and Metal Manufacturing Bhd in a celebrated three-pronged fight in mid-1992. Leader and Sapura Holdings Bhd lost out as FCW eventually became the backdoor listing for Sarawak-based Ekran Holdings.

Analysts however reckon that Leader had not left things to chance. The group has invested over RM80 million in new equipment to expand capacity.

The group exports about 10 per cent of its products, having learnt bitter lessons through the hard times in 1984-85, when then-JTM turnkey contractors turned overseas for supplies, resulting in a glut and over-capacity. Back then, Leader (under H'ng) kept afloat by going overseas and it intends to continue doing so despite the better margins from the domestic market.

Malaysian
BUSINESS

Cover 10

TENAGA: COMING OUT OF THE DARK

WHO, except perhaps candle makers, has not expressed ire at Tenaga during the power cuts that have plagued the country? But the utility — led by its charismatic new chief executive, Ani Arope, at whom 'the buck stops' — promises to get its act together soon. In an exclusive interview, Ani talks about plans to 'plant up' to meet demand. Besides, independent power producers or IPPs will supplement Tenaga's capacity.

But there are miles still to go. How will the IPPs be regulated? What will be the price of new competition in the power sector? **Malaysian Business** attempts to find the answers.

ANI: We're going to keep a close eye on demand

*Cover Photo by **Kaharuddin Samad***

Profile

Corporate

Across The Causeway

WHAT is Bedford's anchor development? See page 20.

LIGHT AT THE END OF THE TUNNEL

There is some way to go yet before Tenaga gets its act together.

■ *Jacqueline Ho*

THE SADDEST part about the current power crisis is the powerlessness of Tenaga Nasional. It may be the gentlemanly thing for Tan Sri Ani Arope, executive chairman of the beleaguered power company to say, 'We had to bite the bullet, take the medicine. All hell broke loose, but the buck stops here.'

The whole nation — from the housewife to the chief executive — heaved heartfelt sighs of relief. Ani is particularly gratified that the nation has pulled together. 'Once everyone understood the position and the seriousness, we rallied.' In the short term, Malaysians will do all right for electricity. Tenaga says it does not plan to reduce power supply for the whole of March.

And something is being done about it. A consultative body comprising representatives from Tenaga, the industrial sector and the relevant government departments was set up to ensure that future power needs are adequate.

That may be so, but there won't be any reprieve for embattled manufacturers — at least till August. Still, that the truth finally emerged was a relief in itself. FMM energy and utilities committee chairman Mike Krishnan is reported to have said, 'We are very pleased that the ministry (of energy, telecommunications and posts) has said that there is actually a power shortage.'

Manufacturers hope that some form of monetary compensation may be forthcoming, in addition to the proposed rebates for off-peak production. For instance, the FMM has estimated losses emanating from the Sept 29 nation-wide blackout to be in the region of RM219 million, based on 1991 sales of manufactured products of RM80 billion.

Analysts reckon that it's unlikely that Tenaga will have to fork out a sen. A clause in the power supply contract precludes the probability of the utility company having to pay should power interruptions be attributed to an 'Act of God', in this case a lightning strike at the Telok Kalong transmission lines.

Some observers reckon that the situation may have been blown out of proportion. Some government ministers, particularly Datuk Seri S Samy Vellu and Datuk Seri Rafidah Aziz, were vocal in rebuking the power company and calling for solutions to the problem.

It didn't help because the utility's share price took a beating, tumbling from over RM9.95 down to around RM8.65. At the time of writing, it has recovered to RM8.90 as the initial panic

POWER TO THE PEOPLE

Independent power producers promise help meet power demand, but at what price?

■ *Jacqueline Ho*

FRIEND OR FOE? On its part, Tenaga Nasional Bhd has decided to view independent power producers (IPPs) on a strictly friendly basis. Executive chairman Tan Sri Ani Arope has said, 'We would like to create a win-win situation where every party involved will get comfortable returns from the power generation business.' Pragmatism may be the best strategy for the national power utility. Considering the government is as committed to competition as to privatisation, the advent of the IPPs was only a matter of timing.

Given that, analysts reckon that the only crucial question that needs to be asked is — what are the terms of the power purchase agreements? How much electricity Tenaga buys from the IPPs and at what price, would impact greatly on the utility's bottomline.

However, there's no doubt that the IPPs would be doing Tenaga a favour. Ani is candid, 'The financial burden on Tenaga will be pretty great. We welcome other players in the market.'

The capital expenditure on building environmentally friendly, combined cycle plants runs to billions. A rule of thumb for the cost of a combined cycle plant is RM1,800-2,200 per kilowatt. Thus

dispersed on cool examination ot the situation. Says the chief executive of a research house, 'It's net positive. Tenaga is in the unenviable position of having demand more than supply.'

There is no doubt that actual demand for electricity has grown more than projected demand — by up to 5 per cent — thereby leaving the utility with very little excess capacity. The 'safe' margin for generating capacity is reckoned to be about 30 per cent. Tenaga's total generation capacity as at March 1 was 4,833MW compared to maximum demand of 4,490MW — an excess margin of 343MW or a mere 7 per cent. Load-shedding and brownouts will be with us for awhile.

On a brighter note the situation augurs well for Tenaga's bottomline. Analysts are projecting Tenaga's profit before tax to be higher than the RM1.25 billion forecast for 1993 (year end June 30) in its listing prospectus last year — about RM1.3 billion to RM1.4 billion.

Explains one analyst, 'It's only at peak hours that Tenaga is unable to meet demand. The increased demand, which is being met, at other hours will add to the company's profits.' Agrees another, 'Tenaga's earnings will be maintained. There'll have to be a *very* long blackout before I revise my projections.'

Actual demand for electricity has grown more than projected demand, leaving Tenaga with very little excess capacity. Load-shedding and brownouts will be with us for awhile.

Assuming a tax charge of 26 per cent (allowing for capital allowances) on RM1.25 billion on full dilution, its net earnings per share works out to 30.8 sen and its price earnings ratio 28.8 times.

The head of a foreign research house reckons that the stock is good to pick up now. 'The energy demand is there, and there is growth of between 15 and 20 per cent.' The proviso is that Tenaga remains the sole transmitter and distributor of electricity.

That is the rub. The energy minister has declared that he would like to see multiple distributors as well as multiple generators. Competition, it seems, will soon be part of the game as in the case of other countries. In Japan, for instance, consumers have a choice of power company.

Even so, it will take its time coming. The research chief reckons that day is far off for Malaysia: 'Not within the next five years.' However, an investment manager reckons that Tenaga can't grow quickly. 'What about its capital burden? It costs at least RM1 billion to build a power station.'

Enter the independent power producers (IPPs). With their advent Tenaga's capital expenditure has been lessened. Ani reportedly slashed the power company's budget by half when the government invited private companies to build, own and operate private power plants.

Tenaga had initially allocated some RM18 billion for power generation. However, Ani says Tenaga will be providing up to 80 per cent of the estimated 12,000MW of electricity supply by the year 2000. Its current total installed capacity is 8,000MW.

YTL Corp's two plants (total capacity: 1,170MW) would cost RM2.1 billion to RM2.5 billion.

The cost of providing power is broken down three ways — generation (60 per cent), transmission (30 per cent) and distribution (10 per cent). Tenaga had initially allocated almost RM18 billion for power generation. This was later slashed to half when the government invited private companies to build, own and operate power plants.

By the same token, the cost of power generation is not going to get cheaper. Tenaga's historical cost of generation (operating cost) is 10.5 sen/kwh. Given inflation, fuel costs and the rise in the cost of borrowings, Ani does not see Tenaga producing electricity at less than 13.5 to 14 sen/kwh.

Some analysts, however, reckon that it is less than that. 'The average cost of generation is 8 sen/kwh. Transmission and distribution costs are about 2 sen/kwh each,' says one 'Tenaga will be buying from the IPPs at a higher cost than their own.'

Ani tells **Malaysian Business** that Tenaga will be purchasing power from YTL at a 'levelised' price of 15.5 sen/kwh for the 21-year period of the licence. The agreement should be finalised by mid-March. However the utility will only be purchasing 60-70 per cent of the power produced. This contrasts with energy, telecommunications and posts minister Datuk Seri S Samy Vellu's statement last October that Tenaga will be obliged to purchase all the power produced on a 'take or pay' basis.

However, the purchase agreement relates well to the generator's operating efficiency — combined cycle plants operate most efficiently at 70-75 per cent capacity. Industry observers reckon that the IPPs will be looking at rates of return of 15-20 per cent. For instance, IPPs on the Indian sub-continent get 17 per cent rate of return.

In YTL Corp's case, the earnings come in from day one, as a 100 per cent-owned subsidiary YTL Construction will be building the power plants. The operating company will be 30 per cent owned by YTL with British joint-venture partner National Power plc holding the remainder.

Sikap Power Sdn Bhd — the other IPP which is close to signing an agreement with Tenaga at the time of writing — has asked for different terms from YTL, but the price will work out to 15.5 sen/kwh on average. The agreement with Sikap will probably start at almost 10 sen/kwh and escalate to above 20 sen/kwh over the turnkey period. Sikap will build, own and operate a 1,300MW combined cycle plant at Lumut, Perak. Cost: RM3.2 billion.

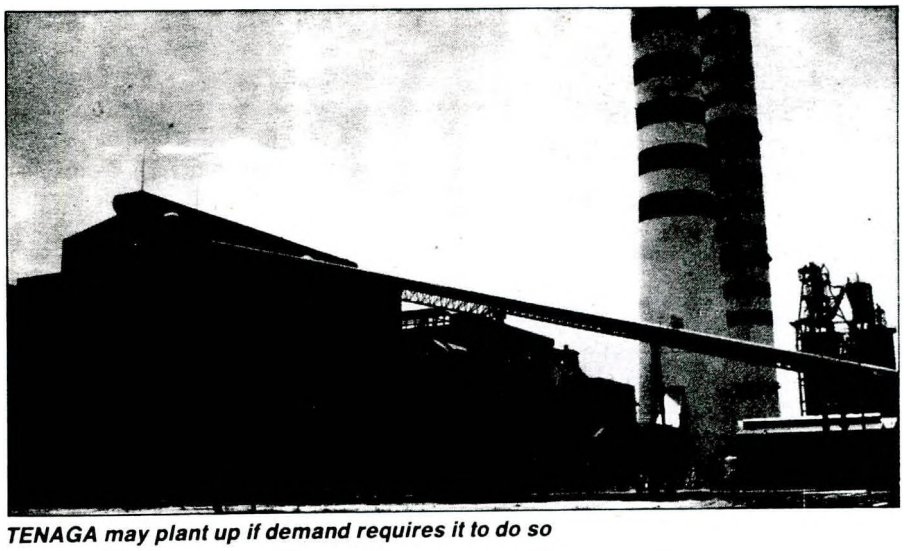
The guaranteed purchase of the base load (offtake) augurs well for the IPP. Whether it is the best deal for Tenaga is moot. Ani seems philosophical, 'They have to make some money. We have to get our electricity.'

The agreement seems a compromise of sorts. Ani discounts the possibility of a perfect market developing whereby the cheapest, most efficient producer will have their power loaded onto the grid first. 'You can't do that with the local IPPs at the moment. Their investment costs are very high... you don't want to bankrupt people overnight. You have to come to a long term agreement first.'

Some analysts charge that Tenaga is, in fact, powerless in its negotiations with the IPPs. Ani puts it like this, 'Sometimes we come to a deadlock (in our negotiations). And we need a third party to come in.'

The plethora of agencies overseeing the IPPs and Tenaga also confuse analysts. While the Economic Planning Unit in the PM's Department looks over the initial application, actual licences are issued by the Director-General of Electricity Supply. Samy Vellu has announced that the EPU is currently vetting 11 other prospective IPPs. Says Ani, 'My opinion is that the EPU will "vet" the credibility of the prospective players.'

The question then: Who will actually regulate the IPPs?



TENAGA may plant up if demand requires it to do so

pacity is 5,400MW. Estimated total demand by 2000 will be 10,000MW.

If Tenaga is to provide up to 10,000MW, it'll have to 'plant' up to 4,600MW between now and the end of the century. Thus, the capital burden will indeed be great. Ani acknowledges this, 'Our gearing will be 1:1 in one or two years' time.' (See interview.)

What about the IPPs? If estimated supply is 12,000MW and estimated demand 10,000MW, is there room for more than the two — YTL Corp and Sikap Power — which have already secured go-aheads? (See accompanying story on IPPs.)

YTL and Sikap between them will build, own and operate power plants which will generate more than 2,000MW.

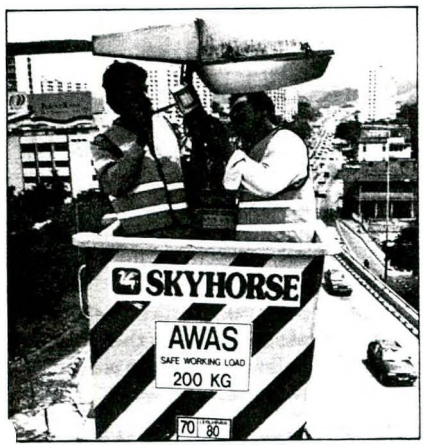
Still, given the figures, the safety margin is only 17 per cent. Ani says, 'We're going to keep a close eye on demand. If it surges, we will plant up. If there is any excess we can't do, the IPPs are welcome to it.'

The call has been heeded. One company that has caught the boat is Genting Sanyen. The paper mill will be selling 28MW to Tenaga initially. And as many as 11 other companies, among them Tan Sri Azman Hashim's AMCorp, Renong group's Time Engineering, Mega First Corp and Negri Sembilan Foundation subsidiary Hypergantics Sdn Bhd, are lining up for power generating licences.

Question: Does this equate to a slap on the wrist for Tenaga? Will the utility get it right this time?

Certain quarters charge that concern over Tenaga's current embarrassment had been highlighted by some of its officials as early as mid-1991. Tenaga's (then the National Electricity Board) 1990 annual report had noted the narrowing gap between installed capacity and maximum demand from 1992 onwards and the fact that there would be no reserves at all in mid-1995 — even if capacity had been brought on stream as planned!

Since September 1990, Tenaga has added 968MW to the system. But it is not enough. In fact, Ani says the power



STILL endeavouring to light up the nation

company was going to plant up about an extra 1,400MW, the shortfall Tenaga is facing. This would have given a safe excess capacity of 25 per cent. Yet nothing was done. 'Tenaga,' says an analyst succinctly, 'is serving too many masters.'

Ani attributes the inertia to a combination of factors, among them the Gulf War and 'other external factors'. Matters were brought to a head when about 1,000MW had to be taken out for maintenance and repairs.

Tenaga's problems are far from over. Some quarters say its hands are tied in dealing with the purchase of power from the IPPs. Given Tenaga's historical cost of power generation (10.5 sen/kwh) it will be buying power from the IPPs at a higher cost at 15.5 sen/kwh. Ani rationalises it so: 'Given inflation and the leverage that we might have on our borrowings, I think our cost will be no less than 13.5-14 sen/kwh. The investment costs (of the IPPs) are very high... you don't want to bankrupt people overnight.'

And given that Tenaga is buying electricity at a levelised price of 15.5 sen/kwh over 21 years, analysts contend that the unknown factor is the cost of fuel. They ask: What will happen when the tariff formula CPI-M+Y — the fuel-cost-pass-through where CPI is the Consumer Price Index, M the efficiency component and Y the fuel factor — operates? Will it ever operate, considering the position Tenaga is in, without causing ire?

Consumers are unlikely to worry about that, at least not in the near term. Tenaga has been paying 6.1 sen/btu for gas. Industry observers reckon the price of oil will be relatively stable for this year and the next, barring another eruption in the Gulf. In any event, it will not breach US$21 (for the US benchmark West Texas Intermediate).

But in the longer term, anything can happen.

SHEDDING LIGHT ON TENAGA

Views from the man in whose hands power lies.

■ *Jacqueline Ho*

FOR A MAN at whom the buck stops, Tan Sri Ani Arope, executive chairman of Tenaga Nasional Bhd, looks remarkably well. His secret: never curse the darkness. As he puts it, 'Somebody light a match. Then you can find where the switch is.'

Malaysian Business spoke to the man in the spotlight.

Excerpts...

ON TENAGA AND THE IPPS

What is the status of the power purchase agreements with the IPPs (independent power producers)?

Our (current) debt to equity ratio stands at 40:60. It will be 1:1 in one or two years' time. The financial burden will be pretty great on us. Therefore we welcome other players in the market to help relieve our strain, including the IPPs.

We will have concluded the agreement with YTL by March 16. We will be buying at 15.5 sen/kwh, spread over 21 years. We have to brush up a few things with Sikap.

Will the agreement with Sikap be different?

The purchase price will start at 12 sen/kwh and escalate. But their levelised price will not be more than 15.5 sen/kwh also.

Are you going to buy all the electricity produced by the IPPs?

We guarantee to buy a certain amount — about 60-70 per cent — to give them that guaranteed return.

Won't Tenaga be buying electricity at a much higher price than its (own) generating costs?

Our historical cost of power generation is 10.5 sen/kwh. Given the inflationary rate, you're not going to get things much cheaper.

Even with the leverage that we might have on our borrowings, I think our cost will be no less than 13.5-14 sen/kwh. And don't forget the IPPs will have to take commercial rates.

We needn't go out to borrow. All the borrowings is being done by the other guys. They have to make some money and we have to get our electricity.

Fuel costs form about 50-60 per cent of the costs of generation. What happens if gas (pegged to oil) prices go up?

That is passable to the consumers.

Why hasn't the CPI-M+Y formula been implemented yet?

The gas price hasn't been static. We're paying 6.1 sen/btu. There is a floor price and a ceiling price. When it breaks the ceiling, then the thing operates.

Will Tenaga and the IPPs be at Petronas' mercy, so to speak?

Petronas has nothing to decide on this. This is the government.

By the year 2000, supply should be about 12,000MW, more than double what's being generated now. Demand will be about 9,000-10,000MW. But we need an excess margin to be comfortable.

ON TENAGA'S OPERATIONS

Speaking of the government, there are charges that it holds Tenaga's reins very tightly, down to operating level, such as day-to-day decisions on how many turbines to buy. Comment.

It's a learning curve. Corporatisation is something new. Tenaga is very strategic to the nation. I think there's a need to hold it a little bit firmer at the moment and as time goes by, get the right level.

Who holds the purse strings at Tenaga?

The board makes the decisions. Then it goes to the relevant government agencies.

How many government agencies are involved?

Three. The EPU, the Ministry of Finance and the Ministry of Energy, Telecommunications and Posts.

Where is planning done?

We do the planning here. But I suppose being a utility, and a strategic service, we would like to have a second opinion.

Didn't some quarters at Tenaga voice concern over future problems — exactly what we're facing now — in mid-1991, and this concern was voiced to the highest quarters?

Actually, between 1990 and 1993, the Board decided to plant up to about 1,400MW extra. This is the shortfall which we're facing. There were various reasons. The Gulf war... the economy slowed down considerably. And the board development committee reversed its decision... to not go ahead and expand.

Then there were other external factors, the government sectors.

Late last year, we were planting up to make up for the 1,400MW shortfall which will come onstream from August onwards.

ON THE FUTURE

What is the projected future supply and demand?

By the year 2000, supply should be about 12,000MW, more than double what's being generated now. Demand will be about 9,000-10,000MW. But we need an excess margin to be comfortable.

By 2000, our old turbines will be needing extensive maintenance and repairs. So at any one time, there'll be a 1,000MW out (for repairs and maintenance).

How much has demand actually exceeded projections?

Between 3 and 5 per cent during peak periods.

Where do you see the development of power supply in the future? In Britain for example, electricity is sold as a commodity, like CPO.

If you have a very big market of suppliers and consumers, you can get up in the morning and call up to find who's selling the cheapest and so on. But in Malaysia the position is different. Supply and demand is very tight.

The markets are bigger in Europe. We're strictly a domestic market here.

Could a possible situation (in Malaysia) develop whereby the cheapest, most efficient producer would have their power loaded onto the grid first?

You can't do that with the local IPPs at the moment. Their investment costs are very high... you don't want to bankrupt people overnight. You have to come to a long term agreement first.

Could Malaysia support more than two IPPs?

We have to keep a close eye. If demand surges, we're going to plant up. If there is any excess that we can't do, then the IPPs are welcome to it.

Can we expect the cost of electricity to consumers to go up soon?

Given inflation, you can expect a rise but it won't be dramatic. It's in our interest to keep prices at current levels. But if the gas price goes up, the cost of repairs and maintenance and so on... we have to put up a credible story to the JBE. (Jabatan Bekalan Letrik). But we won't be asking for a rise yet.

ANI: It's a learning curve. Corporatisation is something new. Tenaga is strategic to the nation... there's a need to hold it a little bit firmer and at the moment and as time goes by, get the right level.

LESSONS IN PRIVATISATION

Looking at the privatisation experience in three developing countries.

■ ***Helen B Nankani***

A DECADE AGO, the concept of privatisation as a force for economic change was barely acknowledged. Today the concept enjoys full recognition with a growing number of nations, both developing and industrialized (including the planned economies).

Many countries embarking on structural adjustment programmes increasingly use privatisation as an integral element. The interventionist development policies of the 1960s and 1970 resulted in a large number of state-owned corporations, now regarded as stumbling blocks in the effort to regain growth momentum in the developing world.

But the record of privatisation programmes in various nations during the 1980s is quite mixed and no clear blueprint for success emerges. Each privatisation seems to have its own history and dynamics, arguing the need to adopt a case-by-case approach rather than formulate a simplified model.

Despite the paucity of data on privatisations in individual countries, the difficulties of country comparisons and the lack of data-based analyses on the economic welfare effects, there are lessons to be learnt. Case-studies of countries and enterprises provide some basis for assessing the privatisation record — its extent, methods and complementary policy requirements. The examples of Chile, Malaysia and Sri Lanka are noteworthy, as they highlight the possibilities and limitations of embracing privatisation as a tool in reforming the public enterprise sector.

Chile boasts the most extensive privatisation experience in the developing world. Nearly every sector has been involved, ranging from (previously privately owned) nationalized enterprises to small and very large state-owned corporations and banks. The original impetus was a decision by the government in 1974 to drastically reduce the size of the public sector, which had mushroomed from about 46 enterprises in 1970 to 600 at the end of 1973, accounting for almost one half of GNP.

It's estimated that between 1973 and the present, some 400 enterprises were privatised. The path has not been smooth, with government re-acquisitions of previously privatised enterprises, some public reversals, until more recently, a string of successes.

Sri Lanka, by contrast, has privatised very little, despite numerous initiatives. It has one of the largest public sectors outside the centrally planned economies. There are 180 state-owned enterprises (SOEs), accounting for about 40 per cent of gross manufacturing output. Efforts began in earnest in 1977 to reduce the size of this sector to relieve the drain on the government budget. But economic and socio-political constraints made any move difficult, leaving only about 11 enterprises divested and five management contracts concluded.

Malaysia falls somewhere in between the two, with the rate of successful privatisation — in terms of number of enterprises divested and percentage of equity redistributed from the government to the private sector — far more limited than the public and media attention make out (only about 14 enterprises have been divested, either totally or partially).

The present efforts, which began in October 1983 with the initiation of a new policy of co-operation between the government and the private sector stem directly from disappointment with the performance of SOEs during the 1970s. Perhaps the most striking aspect of Malaysia's experience is the high level of political commitment (emanating from the Prime Minister). In fact, political will, translated into a defined institutional structure to enhance privatisation, has had an important influence.

What then are the lessons underlying these three attempts at privatisation?

● Tailoring the choice of instrument. All three countries have employed a variety of instruments and creative combinations to overcome constraints, depending on several influences, including government objectives, the SOEs' financial condition and performance record and the ability to mobilize private sector resources, particularly through a domestic capital market.

The most commonly used divestiture methods involve public offerings of shares, private sales of shares, sales of government or enterprise assets, the reorganization of an enterprise into separate entities (or into a holding company and several subsidiaries) and management and/or employee buyouts. (The terms 'privatisation' and 'divestiture' are used interchangeably here.)

The single most popular instrument (excluding liquidation) has been the private sale of shares or assets to single buyers (as borne out in a recent World Bank survey of about 530 recorded privatisation transactions in some 90 countries). This held true not only in sub-Saharan Africa, which lacks developed capital markets, but also in countries such as Brazil, Italy and Spain. The reasons are many: they were often the only alternative for weak-performing enterprises or those too small to justify a public offering; provide an opportunity to evaluate new owners; and offer flexibility in negotiating the operating rules that the purchaser brings to the divested SOE.

The most commonly used methods to privatise management have been leases and management contracts. These instruments have often served as the first step toward complete divestiture, largely because they are the least contentious approach politically. They do not involve a sale of assets, at least initially, and they enjoy a relatively clear legal framework because of the well-defined contractual relationship between the SOE and the management group.

From the start, Chile has employed a variety of instruments but initial privatisation attempts were inadequately managed. Many enterprises were sold to buyers without the management expertise or financial capital to run them, leading, along with macroeconomic instability, to bankruptcies and repossessions.

The next set of privatisations were more carefully planned. The basic instrument used was the public sale of shares, with the emphasis on attaining a widespread distribution of ownership — a sharp contrast to the earlier private sales of shares to a few large conglomerates. Thus, the privatisation of Banco de Chile, one of the nation's two major commercial banks, was largely through 'popular capitalism' (sale of shares to small investors), while the privatisation of ECOM, the government-owned computer firm

that controlled over 50 per cent of the market, was through 'labour capitalism' (sale of shares to employees).

In Malaysia, given the government's overt policy of privatisation, there has been relative freedom to use a variety of instruments, although it is not clear that this has resulted in the most desirable method being chosen, from the point of view of achieving an efficient subsector over the medium term. In the divestiture of Malaysian Airlines Systems (MAS), offers for the sale of existing shares and subscription of new shares were handled at the same time. The privatisation of the container terminal at Port Klang was a combination of an outright sale of movable assets, the leasing of immovable assets, and a management contract, to be followed after a two-year period by a sale of shares to the Malaysian public.

The Sri Lankan authorities have been careful in their choice of instruments, responding creatively to a multitude of environmental constraints. Methods used included complete and partial transfers of ownership, joint ventures and management contracts, with a concentration on the latter. An interesting example is the break up of the Co-operative Wholesale Establishment into four subsidiaries and their subsequent privatisation. This procedure was adopted to take advantage of the limited liability of subsidiaries, which unlike the parent company, escape Ministry of Finance supervision.

● **Choosing complementary macroeconomic and sectoral policies.** It has been imperative for governments to ensure that privatisation occurs in an economic environment — macroeconomic and sectoral — in which competitive forces, both domestic and international, are allowed to lead efficient production to improve the prospects for growth. For example, the outlook for undertaking privatisation in an environment characterized by nigh and uncertain inflation is poor. Investment tends, under such circumstances, to be dormant — prices lose their ability to transmit signals on the allocation of resources.

Moreover, longer-term gains can only be realised if the mix of sectoral policies is appropriate. For potentially competitive sectors, deregulation would be necessary to allow for freer entry of domestic and/or foreign firms and trade sufficiently liberalized to permit imports of like commodities. But for sectors that are likely to remain monopolies (for economic or technical reasons) such as utilities, deregulation would involve autonomy for the enterprise within a regulatory framework by the public sector.

Chile's experience is instructive in this regard. The first phase of privatisation was undertaken rapidly, in a period of macroeconomic instability, without complementary measures to improve the incentive structure in the relevant sectors. When stabilization, deregulation and trade liberalization were pursued subsequently, many of the privatised enterprises could not survive in the more competitive environment which, in principle, provides the true justification for privatisation. In many cases, they should have been liquidated instead.

While policy sequencing issues are very difficult to generalize about, it seems safe to suggest that privatisation efforts are likely to run into difficulties and not yield their potential longer-term benefits *unless preceded* by needed macroeconomic and sectoral policy reforms such as stabilization, deregulation and liberalization.

Sri Lanka provides a good example of the use of complementary sectoral policies in the case of a public monopoly, although at the expense of privatisation momentum. Complex preparations are preceding the proposed commercialization of the telecommunications framework, formation of a new legal entity and design of a carefully crafted regulatory oversight body. Only much later will the private sector be introduced.

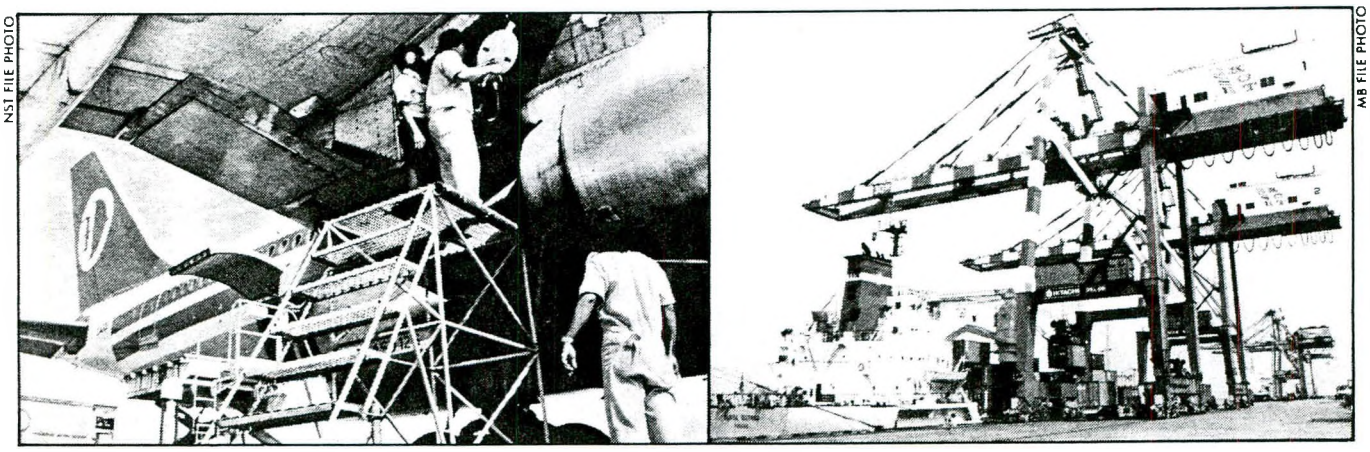
Further, in many instances, even a subsectoral perspective is mandatory. The privatisation of MAS, although significant in terms of a reduction in government ownership — from 90 to 42 per cent — did not result in increased competition or significant changes in operations because the Malaysian government's role — thanks to the golden share that gave it veto power — were left largely intact.

Similarly, divestiture of the Port Klang container terminal could have been better handled. By divesting the container terminal first, the government sold the most profitable part of the port facilities and may have made it more difficult to divest the rest of the port, which except for a public regulatory role, need not remain in public hands.

There's a need for careful redrawing of boundaries between public annd private ownership within the context of a carefully designed sectoral policy framework. Policies of unrestrained privatisation could end up being counterproductive, often leading to the transformation of a public monopoly to a private one.

● **Properly weighing costs and benefits.** The arguments in favour of privatisation are almost always couched in financial terms — shrinking the budget, mobilizing financial and managerial resources and improving the management and efficiency of public enterprises. There are also frequent references to the economic benefits — the private sector, it is argued, would use the country's productive resources more efficiently and thus improve growth performance.

But these financial and economic consequences are difficult to measure and quantify. For instance, quantification of



NST FILE PHOTO

MB FILE PHOTO

COULD privatisations of MAS & Port Klang have been handled better?

long-term cash flow, efficiency and aggregate resource effects depend critically on the underlying assumptions (eg, subsidy levels) and vary considerably from one case to the next.

Moreover, most developing nations, already strapped for cash, cannot ignore the sometimes burdensome short- and medium-term transaction costs, which involve financial restructuring and partial physical rehabilitation of the enterprises; redundancy and severance payments; restructuring or transfer of the firm's debts to the government and/or the private sector; advisory services; and the time of busy government executives.

Political constraints have also frequently obstructed the implementation of economic and financial policies designed to improve, through increased competition, the efficient performance of the sectors in which privatisation is being sought. The principal issues in the politics of privatisation centre on the relative strength of proponents and opponents; the public's perception of potential effects, particularly on employment; and the issue of 'foreign' ownership.

Privatisation's enemies pose a formidable challenge to its typical supporters (planning and finance ministers, donor countries, and international development agencies). Employed labour opposes divestiture for fear of job losses. Government officials may resent it because their jurisdiction becomes restricted. And the intellectual community may oppose it because privatisation tends to be perceived as primarily benefitting the rich and the privileged.

The most organized and effective resistance often comes from unionized labour, prompting governments to devise various ways of managing labour-related problems. In Malaysia, special guidelines state that all privatisation schemes must ensure that employees will not lose the benefits they held — and be absorbed into divested firms under terms 'no less favourable' than those they enjoyed — while working for the government. In Chile, special efforts were made to sell shares to labour and pension funds, and special quotas reserved for them at public auctions and offerings of shares.

The ethnic composition of ownership issues has also needed to be tackled, particularly in multiracial/ethnic societies, such as Malaysia, and to some extent, Sri Lanka. In Sri Lanka, the privatisation programme actually came to a standstill, partly because the government was determined to reach a peaceful constitutional settlement of ethnic issues and thus unwillingly to embark on policies that were domestically contentious.

The case for privatisation therefore, frequently rests less on fine-tuning the net benefits and more on the changing roles of the public and private sectors, as well as in the particular sector in which the enterprise selected for privatisation operates. For this to occur, privatisation must take place within a macroeconomic and sectoral policy framework that induces greater competition, both domestic and international.

In this overall context, the process of mediating between the losers and the gainers, and of steering the programme through the various political constraints imposed, for example, by ethnic or nationalistic considerations, calls for a persistent and decisive effort — hence, the critical role of political will. In the final analysis, privatisation is just one facet of the larger policy issue of private sector development. Its contribution should be seen as helping to further this development, as countries attempt to adjust toward more efficient and growth-oriented economies for the 1990s. (Finance & Development, March 1990)

INDUSTRY'S PAL

Budding entrepreneurs can use SIRIM's facilities and technical know-how as a launch pad for their businesses.

■ ***Steven K C Poh***

THINGS ARE looking up for the small guys in the manufacturing sector. It could be largely because this sector has become the darling of the Malaysian economy in the 1990s. The government recently proposed a 50 million rgt grant to establish an Industrial Technical Assistance Fund for the small and medium size industries (SMIs).

The Federation of Malaysian Manufacturers (FMM) too has declared 1989/1990 to be development years for the SMIs, and to complement the government's efforts to promote SMIs, it has formed the FMM-SMI Resource Centre to provide consultancy and advisory services for the SMIs.

Not to be outdone, the Standards and Industrial Research Institute of Malaysia (SIRIM) also wants a piece of the action. Its offering: The Industrial Incubator Programme (IIP) for budding entrepreneurs — a 'nursery-type' training scheme which allows participants to tap into SIRIM's technical expertise and make use of its premises, machinery and other services.

With growing emphasis on industrialisation, SIRIM's role and responsibility in research and development will no doubt have to be broadened. 'We have to assist the manufacturing sector,' says SIRIM controller Dr Ahmad Tajuddin Ali in Shah Alam. In an interview with the *New Straits Times* last year, he said that SIRIM's future role in technology development hinges on its ability to adapt to the nation's needs in the 1990s — the era in which technology will impinge on all sectors of the economy.

SIRIM spearheads the research and

MAKING AN ELECTRIC DEBUT

Tenaga Nasional is all set to be a mighty presence on the KLSE.

■ *Carol Lim*

THE LISTING OF national power distributor Tenaga Nasional will set some records where the Kuala Lumpur Stock Exchange is concerned. Among them: the largest float and the biggest market capitalisation. The exercise also came with a twist — for the first time in listing history, a portion of the shares will be tendered out.

Everybody will have a chance to own a share of Tenaga in its forthcoming listing exercise. Up for grabs are some 685 million shares representing 23 per cent of Tenaga's total share capital of 3 billion shares of 1 rgt each. The 'instant blue chip' will head the list of KLSE giants in terms of paid-up capital, assets and market capitalisation.

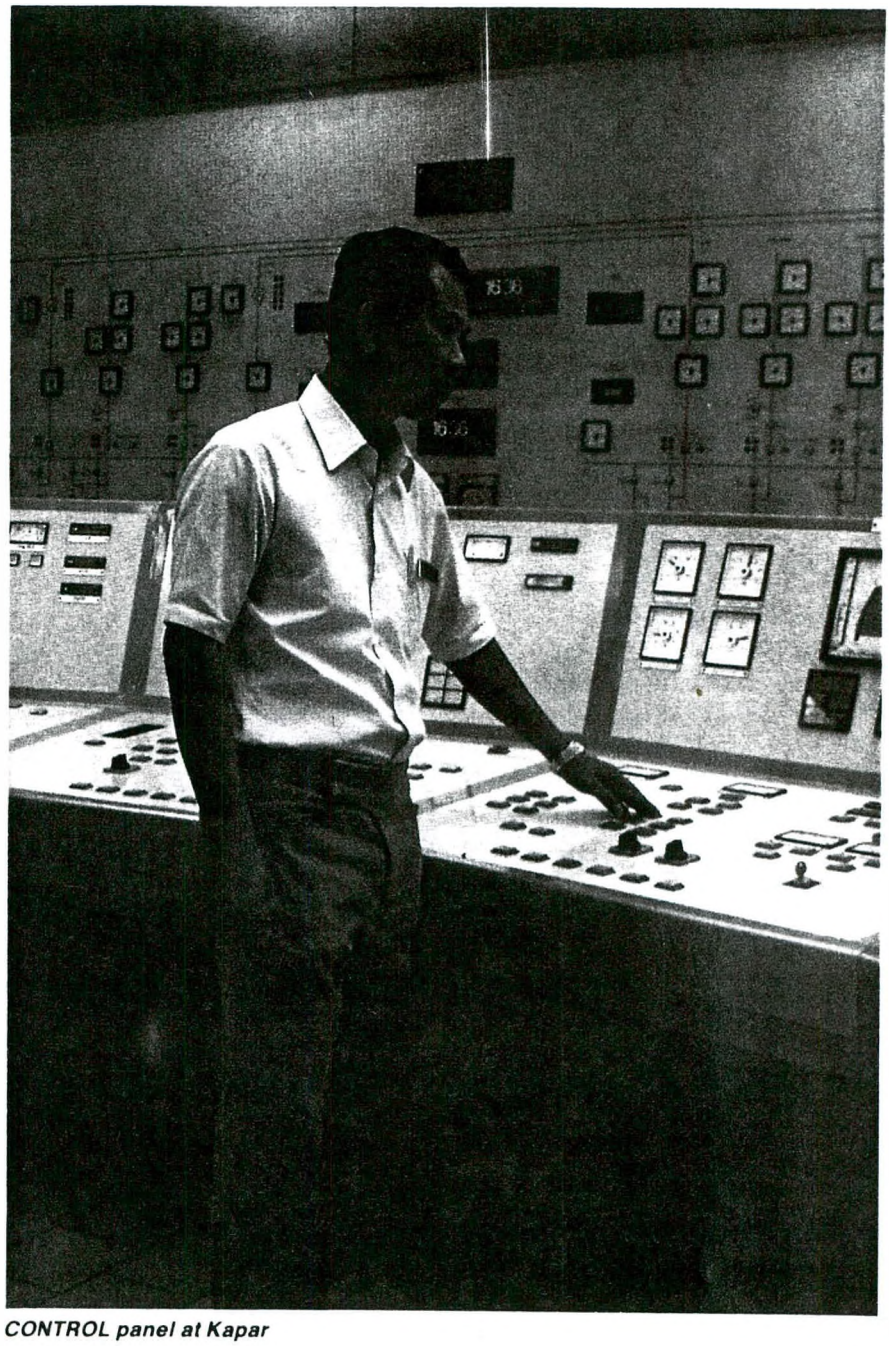
Based on the offer price of 4.50 rgt per share, Tenaga's market capitalisation, at 13.5 billion rgt, far ahead of Telekom's (market cap: 2.3 billion rgt as at Feb 20).

Of the total initial public offering, 625 million shares are offered at a fixed price of 4.50 rgt per share and 60 million shares by tender, the bid price opening at 4.55 rgt per share. Of the former, 240 million shares will be available to the public, 300 million are reserved for bumiputera investors and 84.9 million are allocated to Tenaga's directors and employees.

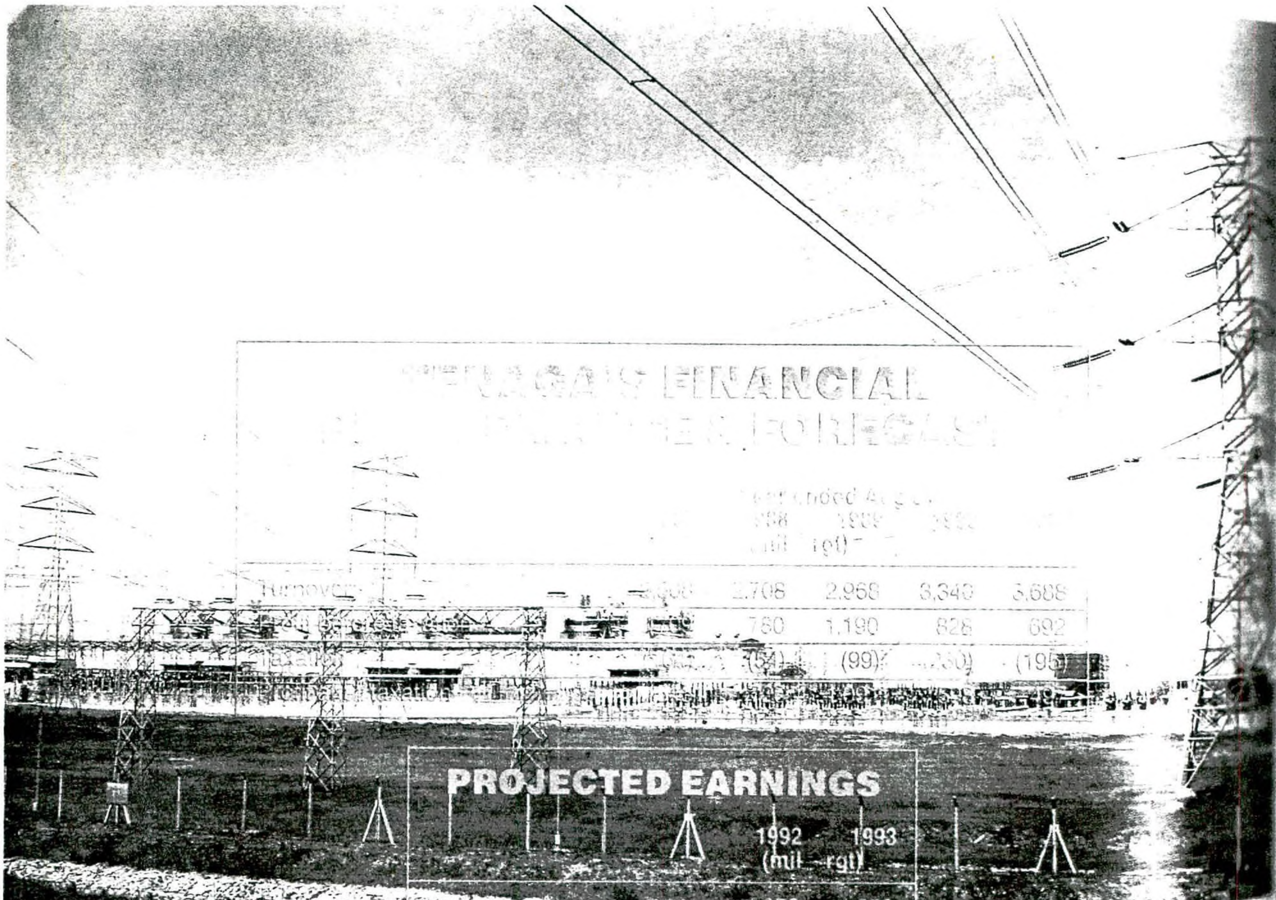
An investor can either opt for the fixed or the tender portion. Even so, as minimum tenders start at 100,000 shares to a maximum of 5 million shares, this tranche is obviously targetted at local and foreign institutions.

The big question is what the highest bid will be. Analysts say the bids will reflect investors' valuation of Tenaga shares.

This is the first time the tender system is being introduced in connection with a public offer. Some analysts say this 'innovative' feature probably helped CIMB land the job as advisor and managing underwriter. Owing to the sheer size of the float, all merchant bankers and



CONTROL panel at Kapar



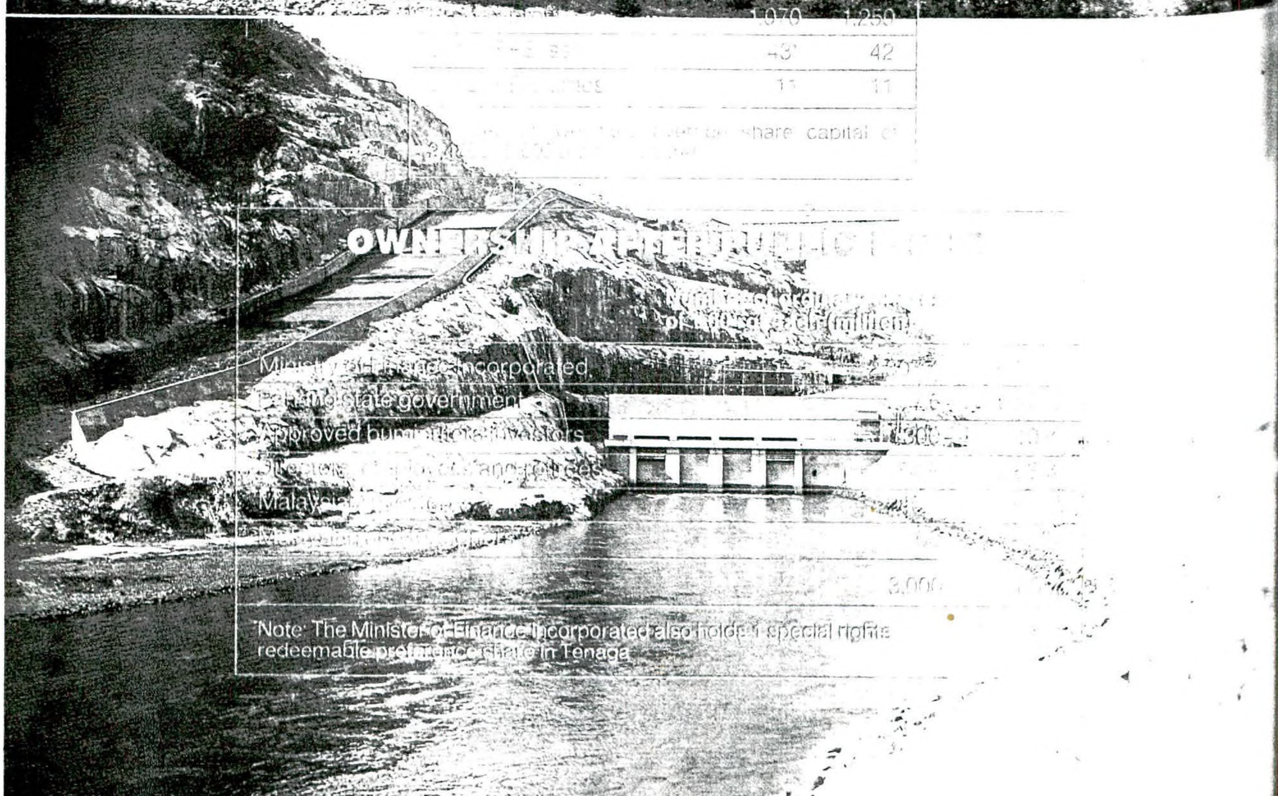
TENAGA'S FINANCIAL [illegible] FORECAST

		Year ended August (mil rgt)			
Turnover	[illegible]	2,708	2,958	3,340	3,688
Profit before taxation	[illegible]	760	1,190	828	692
Taxation	[illegible]	(54)	(99)	(230)	(195)
Profit after taxation	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PROJECTED EARNINGS

	1992 (mil rgt)	1993
[illegible]	1,070	1,250
[illegible]	43	42
[illegible]	11	11

[illegible] share capital of [illegible]



OWNERSHIP AFTER PUBLIC [illegible]

	Number of ordinary shares of 1 rgt each (million)
Ministry of Finance Incorporated	[illegible]
Pahang state government	[illegible]
Approved bumiputera investors	300
Directors, employees [illegible]	[illegible]
Malaysian [illegible]	[illegible]
[illegible]	[illegible]
	3,000

Note: The Minister of Finance Incorporated also holds 1 special rights redeemable preference share in Tenaga

CORPORAT

...orking ho... in the gig... another nove... scheme. ... to h... shares. Lo... from sellin... will be e... shares. ...ysts say th... wake of th... Proton ... 'domestic ... of proc... calls in the ... vanished. ... in market ... Tenaga. ...ording to t... firm, the ... shares. ... fund mar... shares will ... portfoli... such a h... fund m... Tenaga's ...

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KENERGI

stockbroking houses, save two, are involved in the gigantic exercise.

Another novel feature is the loyalty option scheme. The idea is to encourage employees to hang on to their 'pink form' shares. Loyal employees who abstain from selling their shares for three years will be entitled to subscribe to additional shares at the offer price.

Analysts say that the listing, especially in the wake of the comfortably oversubscribed Proton issue, is timely. Doubts about 'domestic investment capacity' in the light of prodigious rights issues and cash calls in the last two years seem to have vanished. And the recent sudden surge in market sentiment augurs well for Tenaga.

According to the head of research in a broking firm, there is 'good demand' for Tenaga shares. He cites two reasons. Foreign fund managers who specialise in utility shares will want to include Tenaga in their portfolio. Also, since Tenaga [illegible] such a huge part of the KLSE index, all fund managers will want exposure to Tenaga 's shares to maintain their portfolio.

Second, he reckons that the offer price is attractive as it represents a discount to the current market PE of about 17 times.

Tenaga has forecast a 1992 pre-tax profit of 1.07 billion rgt, an increase of 363 million rgt over 1991. And 1.25 billion rgt for 1993. Given there are no significant changes in fuel costs and discounts given to selected industries will be withdrawn over two years, the projections are likely to be easily met, say analysts.

Currently Tenaga's licence restricts its imposing charges exceeding those fixed by tariff under the Electricity (Board Supply) Rules (1948). That will change, to be replaced by a pricing formula which includes an adjustment for fuel costs. This adjustment will provide Tenaga with relief from any significant changes in fuel costs.

Even so, the utility seems to have resigned itself to rising prices. Gas prices for the period to May 31, 1992 are budgetted at 5 rgt per MMBTU for the east coast and 6 rgt per MMBTU for the west coast. From June 1, gas prices are budgetted at 6.98 per MMBTU.

However, Tenaga is now empowered to diversify into any area 'it sees fit'. Analysts, for one, think that property development is a strong possibility. Reason: Tenaga's vast land bank which include choice residential areas in Kuala Lumpur, including Kenny Hills and Taman Duta.

Another likely area is electrical consultancy services. Tenaga's expertise built up over 41 years and large pool of engineers make the venture feasible, say analysts.

Diversification aside, the stock's potential has analysts excited. For one thing, it is a captive market. In Tenaga's case there is the added attraction of immense potential growth.

Half of Tenaga's revenue is from industrial users. With the emphasis on industrialisation, this sector's demand is expected to contribute towards the projected growth rate of 12 per cent. Developed countries, in comparison, show minimal growth rates of 2 per cent and below.

Turnover increased by between 8 and 10 per cent annually over the 5 year period from 1987 to 1991. Turnover in 1987 was 2.5 billion rgt, increasing to 3.7 billion rgt in 1991. Profit before tax (PBT) of 500 million rgt posted in 1987 more than doubled to 1.2 billion in 1989 but dropped by half in 1990 and dipped slightly again in 1991. The decline in PBT in 1990 and 1991 was due to fuel price increases — fuel costs account for about 70 per cent of operating costs.

Dividend rates, meanwhile, were consistently at 6 per cent over the same five year period.

Despite the general euphoria over the listing, CIMB is not taking any chances. A local and international roadshow to drum up interest will kick off with the issue of the prospectus on Feb 29. And key Tenaga officials are expected to head for all the major financial centres in the Far East, Europe and United States.

However, there is a limit on foreign ownership (25 per cent). But Tenaga officials say that it is unlikely that a separate foreign counter, like that enjoyed by MISC and Public Bank, will be listed on the KLSE. That is, unless the Finance Ministry (MOF) decides to sell down its stake — after the listing, the MOF will own 76.9 per cent while the Pahang state government will own 0.26 per cent.

(The latter stake reflects its historical association to the pre-privatised Tenaga. It was the first state to house the power plant at Cameron Highlands.)

Tenaga may have some work taken off its hands. Reason: a government decision to issue licences to other parties to 'build, own and operate' power plants. In short, Tenaga will no longer monopolise the generation of electricity.

Even so, the utility derives great strength from its licensed monopoly over the national grid system, the transmission and distribution of electricity. All prospective private power stations will still have to negotiate with Tenaga to plug into the national grid. Thus, it will continue to call the shots.

Industry analysts say the government's decision may have nothing to do with encouraging competition. For the government, selling off LLN was an opportunity to shift the burden of heavy capital costs to the private sector. Electricity generation, apparently, is an equally capital intensive business. If Tenaga were to buy electricity from private generators it would save considerable sums.

According to Tenaga's projections, and assuming no private generators come forward, some 18 billion rgt is expected to be budgetted for power generation to meet anticipated demand over the next 10 years. Currently, total installed capacity is 4,870 MW. The projected installed capacity is expected to be 7,834 MW by the end of 1995. Thus, to avoid shortage more generators will have to be built.

Even so, no competition is expected to go operational for the next 2 years. For one thing, it is understood that licences to be issued by the director-general of Electricity Supply to private operators of power plants come with a condition, namely that gas is to be used as fuel. And the Peninsular Gas Utilisation Project is far from complete. Still, there has been no shortage of interest. It was reported that Tenaga's first competitor in power generation will be operated by Perlis SEDC and a public listed company. Currently the EPU is studying four such proposals. ■

ELECTRICITY CONSUMPTION

Category	Sales	
	GWh	%age
Industrial	9,825	50
Domestic	3,662	19
Commercial	5,592	29
Mining	301	2
Public lighting	158	1
	19,538	100

TARIFF DISCOUNTS

	%age
Hotel	10
Industrial	20
Mining	25
Street lighting	45

Note: From June 1, 1992, 50 per cent of the discounts to the hotel and industrial sectors. The balance from June 1, 1993.

ALL POWERED UP

Gas will generate the power of the future.

■ *Carol Lim*

SINCE 1980, THE government has followed a four fuel strategy, namely gas, coal, oil and hydro power. Diversification reduces risks involved in over-reliance on any one source of fuel.

The priority is flexibility. Economics will not necessarily be the deciding factor when it comes to choice of fuel. There is no clear cut choice.

Hydro power is cheapest in terms of operating costs but the limiting factor is site suitability. Major environmental changes and relocation of villages and wildlife are deterrents. Coal price is fairly stable but has to be imported, is bulky to store (unlike oil and gas which is piped in) and has adverse effects on the environment.

The trend is towards reducing reliance on oil and using gas more. The reason: the price of oil is volatile. For instance, during the Gulf Crisis, oil price per barrel increased by US$10.00 to US$28.00 per barrel.

Besides, gas is abundantly available in Malaysia. Therefore, gas is to be the main fuel for power generation. The government's desire to switch to gas is understandable given that Malaysia is one of the producers of natural gas.

Out of Tenaga major power stations, more than half are thermal plants using steam, gas turbines or combined cycles. Fuels used are oil, gas and coal. In terms of installed capacity the largest is the Kapar plant with 1,200 MW at Port Klang folowed by Paka (870 MW) and Port Dickson (600MW).

The other type of plants are the seven hydro plants, the largest of which is the Kenyir dam which has an installed capacity of 400 MW. Temenggor and Kenering each has 348 MW and 120 MW respectively.

The total installed capacity is 4,870 MW. The projected installed capacity is expected to be 7,834 MW by the end of the 6th Malaysia Plan (1991-1995).

For Tenaga the threat is from the switching over to alternative energy sources, namely natural gas. As natural gas becomes increasingly available 'on tap', so to speak, consumers, especially industrial users, will be attracted to using gas instead of electricity as energy.

The priority is flexibility. Economics will not necessarily be the deciding factor when it comes to choice of fuel. There is no clear cut choice.

TENAGA'S MAJOR POWER STATIONS

	Fuel Type	Installed Capacity MW	MW
THERMAL			
Port Dickson	Steam (oil)	4x60 3x120	600
Prai	Steam (oil)	3x30 3x120	450
Pasir Gudang	Steam (oil)	2x120	240
Kapar	Steam (gas/oil)	2x300	1,200
	Steam (oil/gas/coal)	2x300	
Paka	Combined Cycle (gas)	3x290	870
Connaught Bridge	Gas Turbines (MFO)	2x90	180
Gelugor, Prai, Port Dickson, Kapar & Pasir Gudang	Gas Turbines (Distillates)	5x20	100
HYDRO			
Kenyir		4x100	400
Temenggor		4x87	348
Kenering		3x40	120
Bersia		3x24	72
Jor		4x25	100
Woh		3x50	150
Chenderoh		4x10	40
Total System (as at Aug 31, 1991)			**4,870**

GENERATION CAPACI

Total Installed Capacity 5,04
(as in August 1991)

Conventional steam (oil)
Hydro
Combined cycle
Coal
Gas turbine
Diesel

TENAGA AND THE IPPs

Independent power producers raise troubling questions.

■ *Rajen Devadason*

QUESTIONS ABOUND concerning the viability of the eight new privatised power generation projects announced by the government two weeks ago. When Datuk Tajol Rosli Ghazali, deputy minister of energy, telecommunications and posts, made the announcement on May 4 he intimated Malaysia's power demands for the next ten years were too burdensome for Tenaga Nasional Bhd to handle alone.

The sites identified for the possible privatised plants are Kuala Perlis; Yan, Kedah; Lumut, Perak; Serdang and Kapar in Selangor; Segamat and Pasir Gudang in Johor; and Paka in Terengganu.

While most observers applaud the move to open the Malaysian economy further the efficiencies inherent in competition, other quarters profess disquiet.

They also ask some pointed questions. Who exactly is interested in becoming an IPP — independent power producer? What returns can they hope to get? How exactly does a private entity hope to not just match Tenaga's economies of scale, but actually produce electricity more cheaply than the national utility? How will Tenaga meet the goal stated in its listing prospectus of Feb 29, 1992, of increasing its installed generation capacity to approximately 7,800 MW from the current 5,040 MW' if it has to compete with other companies which may choose to open plants in overlapping vicinities?

Answers to these questions are sketchy. Thus far only one interested IPP has officially surfaced. News reports say the Perlis State Economic Development Corporation and Time Engineering have already signed a Memorandum of Understanding to build a 1.44 billion rgt power plant in Perlis (see **Malaysian Business** May 1-16).

Another company clearly interested is listed construction giant YTL Corporation. Energy, telecommunications and posts minister Datuk Seri S Samy Vellu, tells **Malaysian Business**. 'YTL has submitted bids for two plants — Paka and Pasir Gudang.' Interestingly enough, Tenaga itself has plans for those sites — it already has an 870 MW combined cycle plant in Paka which it hopes to expand, and there is a 240 MW steam (oil) Tenaga plant in Pasir Gudang where a combined cycle plant is also planned.

Industry sources say without those critical components in its expansion plan, Tenaga cannot hope to meet its prospectus expectations.

Industry observers say it will cost an average of 1 billion rgt to set up each independent power plant. So although Samy Vellu maintains the IPPs 'will have to sell at a price no higher than Tenaga's own cost of production', observers feel it would be difficult for the government to insist upon that if it means the IPPs end up making a loss.

Indeed, the sources say the IPPs cannot hope for more than 5-8 per cent returns on capital employed.

The usual defence for privatisation is that competition leads to greater efficiencies and a paring in final consumer prices. But, a source close to Tenaga says, 'Tenaga has already sorted out both technical specifications and soft loan financing from institutions like the Asian Development Bank for its own plants in Paka and Pasir Gudang.'

Still, the IPPs could save the utility a lot of hassle, not to mention money. If Tenaga does not have to sink billions into setting up plants then it saves itself millions of rgt in interest charges. According to Erik Sardain, Crosby Research Ltd's KL representative, 'The impact of privatisation will be mainly positive on Tenaga's cashflow.'

There are three stages to the electricity game — generation, transmission and distribution. Sardain estimates that generation constitutes 50-60 per cent of the total cost. Transmission takes up about 25-30 per cent and distribution the rest.

His estimate is borne out by Tan Sri Dr Ani Arope, Tenaga's chairman. Four months ago he said that of the 37.7 billion rgt the utility planned to spend in the coming decade, 50 per cent would be allocated for power generation.

A few days later the government openly mooted the IPP plan by inviting private companies to build and operate power plants in the peninsula. After that Ani slashed Tenaga's projected capital expenditure by half, reportedly saying, 'The billions saved can be used to improve our services.'

Stock market players and observers openly applaud the move. Says one player, 'I would prefer it if Tenaga actually did less power generation, and spends more money on distribution.'

Broking house Phileo Peregrine, in a recent report said, 'Tenaga will initially source 10 per cent of its requirements from the private operators.' That is estimated to eventually climb to 30 per cent.

What is interesting therefore is that based on the experience of British power operators, an excess capacity of 30 per cent is required, particularly in the light of Tenaga's implicit assumption that its sale of electricity will grow by 12 per cent a year from now to 1995. Says an executive familiar with the situation, 'That capacity must be available if Tenaga is to meet its profit forecast.'

If the entire excess capacity needed by Tenaga to maintain growth is held by IPPs, that could introduce less security than if Tenaga operated the generators itself. Admittedly the first IPPs are only expected to come on line in 1995 or 1996, meaning its dependency on IPPs will only arise after that.

Some proponents of the IPPs however point to the intermittent brown-outs throughout the peninsula. One says, 'Tenaga has called the shots wrong three times in working out energy capacity requirements.' His belief is that the government is encouraging the IPPs to en-

sure Malaysia's power needs are met.

But the question that bothers most observers is: How will the IPPs finance the power plants at least as efficiently as Tenaga can?

Last year Samy Vellu announced Tenaga's clinching a 500 million rgt soft loan from British financiers at 0.835 per cent. It is to partly finance the Pergau dam in Kelantan. Loan repayments will only begin six years after the dam is completed, and will be made in 17 instalments over 14 years. Considering the financiers almost balked because of plans to privatise Tenaga, and only relented when the Malaysian government stepped in to guarantee the loans, no private company in Malaysia can hope to get any deal nearly so sweet.

But some industry players maintain the days of Tenaga enjoying soft loans are over, now that it is a listed, privatised body. However, as long as the government retains a hefty stake in Tenaga — after floatation it still holds about 77 per cent — there seems no reason why the government will not repeatedly step in to provide the necessary guarantees.

On that basis, if private companies do not have access to financing lower than Tenaga's, and since they clearly cannot enjoy Tenaga's economies of scale, how, ask sceptics, can IPPs generate cheaper electricity?

The short answer is, according to analysts, 'They can't.' Which is why most believe the parties interested in becoming IPPs are not going to be in it to make a killing in power generation. Says one, 'Look out for groups which can make money on the construction.'

Some sources close to Tenaga are unhappy about the situation. They point to the enormous paid up capital of Tenaga (3 billion rgt) and they claim that the only reason such a large share base was required was to take into account expansion plans.

Also, a new pricing formula was supposed to have been implemented by Tenaga in May but has been put on hold temporarily. The new formula introduces a mechanism to pass on significant fuel price increases to you and me. But while Tenaga's own accounts should not suffer in that respect, overall demand may not rise as fast as predicted.

There is a view often expressed that the projected 12 per cent growth in Tenaga's sales may not be all that easy to maintain given the fact that industry subsidies are being phased out over the next two years. Especially if the price of power rises.

Another impact on Tenaga when the IPPs begin serious work on their power plants will be on its pool of skilled engineers.

An executive familiar with the situation says, 'The IPPs will have to poach Tenaga staff.' Not surprisingly the largest pool of qualified engineers in the power game lies within Tenaga. Over the years, Tenaga has sent droves of engineers abroad for training. Says a source close to Tenaga, 'There is no other ready pool of engineers.'

When the IPPs start headhunting, even the innovative Employees Loyalty Share Option Scheme introduced in the Tenaga floatation exercise may not be compelling enough to keep the engineers with the utility.

While competition for Tenaga is clearly a good thing, Tenaga may only be able to hold its own if it plays on a completely even field. This would mean the IPPs have to compete fairly with each other and Tenaga for the right to generate power, with only the cheapest producers being allowed to set up shop.

A ROUGH DIAMOND

Nam Fatt, with its healthy profits and zero gearing, is a gem waiting to be discovered.

Jacqueline Ho

KLSE MAIN BOARD-listed Nam Fatt Bhd is, by its own admission, conservative.

This conservatism has not exactly endeared it to investors. In the first two weeks of May, only 375 lots were traded within a relatively narrow price band between 3.50 rgt and 3.90 rgt. Daily turnover for the week of May 19 ranged from a measly one to three lots. At the time of writing, the share price is languishing at the lower end of its range at 3.64 rgt.

Yet analysts agree that the company is a good and focussed one. So why the indifference? One reason could lie in the fact that the controlling shareholder and the man Nam Fatt is most identified with, managing director Mac Yin Wee, had indicated a short time after Nam Fatt's listing in October 1990, that he wanted to sell his interest in the company.

Mac, in his mid-fifties, had spent his working life building his family's small foundry business into a respected engineering and construction firm. And in the construction business perhaps more than any other, 'honour' is still a watchword where delivery is all-important. Mac and Nam Fatt had that, according to industry circles, in spades. Also should Mac divest his interest, employee loyalties (which are to him) could not be assured.

The second is the perception that the company lacks the necessary connections where it counts. A less cynical school of thought figures this could be the reason why Mac wanted to sell not all, but at least some of his shareholding.

Thus even with its record of steady earnings growth and overall analyst approval, few securities firms follow the stock — despite the fact that it has secured a good position and reputation in a booming sector. Indeed, most are unable to classify it.

Recommendations are hard to come

MORE IPPs EYE THE ENERGY PIE

Prospective IPPs make their bids even before conditions and prices are set.

Carol Lim

DESPITE THE uncertainty surrounding the regulation of independent power producers (IPPs) and the pricing to be worked out between IPPs and Tenaga Nasional Berhad, there has been no dearth of interested parties.

The latest to jump onto the bandwagon: two little-known companies, Sikap Engineering Sdn Bhd and Projess Sdn Bhd.

Both have been invited to submit bids to the Economic Planning Unit to build and operate private generators.

The former, a small engineering outfit headed by one Astaman Aziz, an ex-Tenaga engineer and son of former welfare minister Tan Sri Aishah Ghani, will be submiting bids for a power plant to be based in Lumut.

Projess has been asked to submit bids for a series of mini-hydro projects throughout Peninsular Malaysia. Little is known about the company but a search at the Registrar of Companies revealed its chairman — former director of health Tan Sri Dr Khalid Sahan — and its directors — Abdul Karim Tarmizi, Dr Mustapha Yusoff and Faridah Yusoff.

The two companies will join big timers like YTL Corp and Time Engineering. At the head of the queue, however, is YTL which is probably the only party to have submitted detailed bids for its two proposed plants in Paka and Pasir Gudang.

Indeed, the YTL bids have aroused much controversy primarily because both their proposed sites have existing Tenaga plants. In addition, Tenaga was supposed to build large combined cycle plants in both sites as part of efforts to raise electricity supply by some 3,800MW by 1994. In fact, prior to the IPPs idea, Tenaga had already called for bids from contractors and consultants on proposals to build the plants on a turnkey basis.

The floating of the IPP idea, in the words of an industry player, 'effectively stopped Tenaga in its tracks'. Nor has YTL or anyone else gone ahead either. Observers note that in the United States, for instance, it takes up to two years for negotiations between the IPP and the utility to 'be completely finalised'. As a result, they wonder when YTL will kick off because, as they point out, a delay could mean scarcity of supply by 1994.

Asks the player, 'If Tenaga had already started everything and yet only expected to complete by 1994, when will YTL complete its project when negotiations haven't even begun?'

Although it is crucial that some of these projects kick off as soon as possible to ensure adequate power for the future, everything seems to be at a standstill because the pricing issue, for one, has yet to be thrashed out. So, too, has the regulatory framework governing IPPs. As an industry observer says, 'Before any IPP can take off there must be a purchase agreement contract — Tenaga must agree to buy at a certain price and a certain quantity.'

According to government sources, decisions are taken on 'a project by project basis' and, to date, no 'firm decision has been taken'. The first decision, however, is expected to be made on YTL's proposals and the government is now deliberating on the pricing.

Indeed, government sources say the position is 'so fluid' that there may be no IPPs at all. Says an executive familiar with the situation, 'It all depends on the outcome of current negotiations.'

The pricing issue appears the most contentious. If it is to serve the interests of all, say analysts, then the pricing between Tenaga and the IPPs has to be such that it is 'neutral for Tenaga to either buy from the IPP or produce it on its own'. By this reasoning, cost savings on the part of IPPs will mean more profits. He says it will be good for all if Tenaga can buy from IPPs at a 'neutral price' which is acceptable to both parties, and save on the capital investment.

In theory, the IPPs should gain because it is a no-risk project — they will have a guaranteed buyer for their electricity. With no risk and substantial returns, the IPPs should be able to supply Tenaga at a low enough price so that, again in theory, Tenaga should be 'indifferent to either producing or buying'.

But industry experts think differently. The pricing of electricity between the IPPs and Tenaga, they say, is 'a tricky business'. Whether IPPs, without the economies of scale and soft loans enjoyed by Tenaga, can produce electricity at the same prices as Tenaga is doubtful.

It is understood that models for evaluation are still being worked out. And the choice of a right model should provide comparisons of what is fair. In this playing field the government is supposed to act as referee. 'But how can the referee do a proper job if the rules of the game are not drawn up?' questions an industry expert.

Tenaga's managing director, Datuk Mohd Ariffin, puts it tactfuly, 'There is a need to ensure that the overall cost of generation is competitive and does not result in higher costs to Tenaga and its customers.'

The Electricity Supply Department (or JBE in Bahasa Malaysia), the agency within the Ministry of Energy which issues licences, admits that there is 'an absence of detailed regulation governing IPPs'. That does not faze the agency, however — it insists that it should not hinder the licensing of IPPs.

JBE director-general Mohd Ann Mohd Nor tells **Malaysian Business** that the conditions are expected to consistent with that of Tenaga's licence.

Says Annas, 'We will build up framework of regulation for the IPPs that there will be a level playing fie Rules will be known and IPPs will kn what they are going to do. We do believe that innovative ideas that co from both the government and the vate sector should be hindered beca there is no framework. From this e cise we can recognise issues to be dressed in the future.'

Industry observers, however, poin that there is 'really no competition local bids for IPPs. Each bid so fa been allocated to one player and have been no competing bids to mine 'best prices'. Asks an obse 'Why should Tenaga be tied up fo next 15 or 20 years (average life spa typical plant) when, say, in two when the regulatory framework place, it can choose from perha bids?' He reckons that if the regul are in effect, there will no dang making up the rules on an ad hoc Instead, market forces will dictate gets the deal.

Agrees a consultant, 'In the UK it

a long time before these rules evolved privatisation into an open transparent system where all tariffs are published.' (Britain's electricity supply is fully privatised and it works on a pooling system where the price is fixed by open bidding. Usually the buyer, the utility, chooses the lowest price.)

Critics of IPPs view them as opportunities to cream off profits from Tenaga if the pricing is not right. If that happens, they warn, then the consumer will suffer because Tenaga 'can pass through any increase if approved'.

Power generation is a hugely capital intensive business. Installing plant capacity to keep up with annual demand, pr[illegible]ted at 12 per cent, *and* maintain s[illegible] 30 per cent reserve capacity, requires hefty capital. Indeed, it was projected at 18 billion rgt — 50 per cent of the estimated capital cost of 37 billion rgt required to generate, transmit and distribute new electricity produced up to the year 2000.

According to Tenaga's Ariffin, projects identified for implementation under the Sixth Malaysia Plan will be financed from internally generated funds and loans already arranged and secured from multi-lateral and bilateral sources. He emphasizes that it is not financially burdensome for Tenaga to finance the projects it has committed itself to.

ARIFFIN maintains that projects after the Sixth Malaysia Plan (1996 to 2000), 'whether by Tenaga or the IPPs', will have the same sources of external fur[illegible]. He says, however, 'In the case of [illegible]aga it will be able to part finance the projects through internally generated funds.'

Tenaga, agree most people, has had a good 41-year track record. Current tariffs have not been revised upwards since 1985 and domestic rates have been unchanged since 1980. Even taking into consideration pre-discounted rates, Tenaga's rates are among the lowest in this part of the world.

With or without IPPs, Tenaga will still bear the brunt of ensuring that the supply of electricity for Peninsular Malaysia is met at a reasonable price and quality of service — these are some of the conditions attached to Tenaga's licence issued by the JBE. And in the event of the IPPs failing, Tenaga will also have to take up the slack.

Conceptually, however, everyone seems to welcome competition. Tenaga, for one, will jump at the prospect of being able to buy electricity. Says Ariffin, "Why not, if other people can produce cheaply?"

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