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Power: Is there a better formula?

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OPERATING from its RM4 billion plant in Lumut, Perak, independent power producer (IPP) Segari Energy Ventures Sdn Bhd (SEV) churns out some 1,303 megawatts (MW) of electricity annually or about 30% of the current total output of privately-generated electricity in Peninsular Malaysia.

Formerly known as Sikap Energy Venture, Segari is one of the five IPPs operational in the peninsula and the latest to come onstream, in January 1997. Brought in to supplement Tenaga Nasional Bhd's (TNB) generation capability following the power shortage crisis of the early 1990s, the IPPs went into business from 1995 to end the utility giant's electricity production monopoly.

However, while this solved one problem, that of sufficiency of supply, it soon created another, that of cost of electricity. The IPPs, seen as the saviour during the power crisis, are now cast in the role of villain.

At the root of the controversy is the power purchasing agreement (PPA) under which Tenaga buys electricity from IPPs on terms said to cause Tenaga to incur significant fixed charges.

Indeed, three tariff increases by Tenaga since 1993, the latest being in May this year, to boost sagging revenue have led many quarters to accuse IPPs of taking Tenaga for a ride by charging exorbitant rates. End users are lamenting they will have to bear the brunt as Tenaga will always pass on the high cost to them. There have even been calls to the government to review the existing IPP charges.

Statistics appear to support these views. For the year ending Aug 31 1996, Tenaga announced sharply lower results, citing as the main reason higher cost of buying electricity from IPPs. According to sources, Tenaga paid some RM2.275 billion to the five IPPs last year.

Its unaudited group pre-tax profits fell 29% to RM1.163 billion from RM1.636 billion in the previous year, despite a 19% rise in turnover to RM8.145 billion from RM6.885 billion. In contrast, IPPs continued to enjoy high profits.

IPP charges under the PPAs varies from producer to producer. According to press reports, Port Dickson Power Sdn Bhd charges 13 sen per kilowatt/hour or unit, while SEV charges 15.5 sen per unit. Powertek's rate is 13.1 sen per unit, Genting Sanyen's is 13.5 sen per unit and YTL's two plants sell to Tenaga at 15.54 sen per unit. It is claimed another IPP under construction, the Bakun Hydro-Electric Corporation, expected to generate some 2,400MW, will sell power to TNB at 16.5 sen per unit once it comes onstream.

Are the IPP rates justified? Yes, says an industry observer, who argues that were Tenaga to generate the power that IPPs are now producing, it may still have to spend about the same amount for fuel. Clarifies Azmi Abdullah, Chief Operating Officer (COO) of SEV, 'Our rates are on a contract basis for 21 years.

We cannot change the tariff until the end of the period. So in real terms, the 15.5 sen, 10 or 15 years from now, is considered cheap because if you take into account inflation, the average tariff rates sold by the IPPs becomes relatively low.'

He points out the rates charged in Malaysia are among the lowest in the region. Thailand and Indonesia for example are selling at 20 sen per unit. Tan Sri Francis Yeoh, Managing Director of YTLPI, is of the same mind.

'Think of India and Indonesia, paying a price like 20 sen per unit.

Their per capita income is lower than ours. They can hardly afford that kind of rate and yet they still have to pay it. We are more developed than they are and we are paying lower tariffs,' he added in a recent report.

Azmi also contends the rates charged to TNB justify the cost of setting up a power plant. 'If we were to build a power plant now, we can sell power cheaper because the cost of gas turbines or power stations using gas is at the lowest now.

'Back then (in 1990) we were paying over US\$650 per kW. Now, a similar power plant like ours would cost only US\$500 per kW at the lowest. But as that's the rate we paid back then, so this is the rate we have to sell now. So our rates justify the cost because we are looking at a flat rate, you see, for the next 21 years,' he explains.

What about the argument by certain quarters that IPPs can always ask the government to review their existing rates, say 10 to 15 years down the road, if they find costs escalating?

'In my opinion, that question does not arise as all considerations of future cost increments have been taken into account in arriving at the figure of 15.5 sen per unit for the next 21 years,' Azmi says.

A Kuala Lumpur-based analyst agrees, saying if IPPs are going to review their rates, it will cause them a lot of hassle. 'They would have to refinance their loans, revalue their operations and get the rating agencies to re-evaluate their companies.'

However, some new developments are taking shape that may offer an answer to the pricing controversy. According to the International Private Power Quarterly for the second quarter of 1997, government policies on tariff levels paid to IPPs is 'apparently changing.'

It says under a recent PPA negotiated between Tenaga and the developers of a 1,200MW Kedah power plant, the developer would be paid 4.587 cents (in US currency) per unit. The rate, it adds, could serve as a new benchmark for IPP tariffs. It looks like the government and Tenaga are taking a tougher stance in pushing for lower rates.

Another is the suggestion by certain quarters that the government adopt an open bidding system for power purchases. The Federation of Malaysian Manufacturers (FMM), in a press statement, said if the system is implemented, 'TNB would then purchase electricity only from the lowest and most efficient IPP bidder. TNB should be allowed to gradually reduce the quantum of power purchased from IPPs.'

Azmi welcomes the open bidding suggestion with open arms. 'We know about the deregulation or the bidding process that's going to happen soon and the government is currently looking at the bidding or pooling system for Malaysia,' he says.

However, he adds, 'But we cannot really follow other countries because their structure may not be very similar to ours. We have to have our own system and that would be a very healthy market situation. We do not have any reservations about going with the system.'

He explains that until the open bidding system is implemented, IPPs cannot really be called independent power producers. 'Instead, we should be called contracted power producers, since we are sub-contractors of TNB.'

The contract system was introduced because the government wanted new players producing quick and efficient power to ease the demand on Tenaga which was clearly overburdened as shown by the nationwide September power outage in 1992. And the quickest way of getting power is by using gas as a fuel source. Gas plants take a shorter time to build than coal-fired plants.

In Segari's case, construction of its gas plant took less than three years, according to Azmi. Though coal is the cheaper fuel, a coal-powered

plant of 1,300MW would take four-and-a-half years to build. Moreover, having a PPA in the initial stages of an IPP project is an international norm, according to him. 'When the time is right, going the way of competitive bidding is healthy,' he says.

A restructuring process is also under way in the energy sector that will bring more changes. One is to the source of fuel for producing electricity. Now that the urgency to get power no longer exists, the government wants power producers to be more diversified in their fuel mix, although gas will still play a dominant role in electricity generation until the year 2000.

According to the Seventh Malaysia Plan (7MP), gas-fired generation will account for 69.2% of the mix at the turn of the century. It will continue to feature prominently in the TNB system, accounting for 71.5% of the fuel mix. Oil's share is expected to decline from 9.2% in 1995 to 4% in year 2000, while coal's share would increase from 10.7% to 17.3% in the same period.

For the Sabah Electricity Board (LLS) system, due to the limited availability of gas, oil will still be the main fuel, accounting for 66.3% of its generation mix in the year 2000. Meanwhile, the mix of the Sarawak Electricity Supply Corporation (SESCO) system in the year 2000 will constitute 69.2% gas, 16% coal, 10.6% hydro and the rest, oil.

However, the government is considering a policy to limit the use of natural gas for electricity production after year 2000. The gas would be better used for other purposes, such as for export.

Prime Minister Datuk Seri Dr Mahathir Mohamad, at the launching of Segari's Lumut power plant, said future generation of power should try using coal.

However, to safeguard the environment, he called for the use of 'clean coal technology.' Malaysia has an estimated 8.5 million tonnes of coal, as well as 311 million tonnes of lignite and brown coal reserves.

Another alternative is hydropower, of which one project is the Bakun project. Malaysia's total hydro resources are put at about 29,000MW, with a potential energy of 123 billion kWh annually. About 70% of the resources are located in Sarawak.

The International Private Power Quarterly says Sarawak has more than 20,000MW of untapped hydro potential that could be developed and transmitted through submarine cables to Peninsular Malaysia. It says the government is currently studying that possibility.

There is no doubt the entry of IPPs and the deregulation in the electricity generation industry have irrevocably changed the power sector. One major change is in the status of TNB.

The Ministry of Energy, Telecommunications and Posts announced that the utility company will function solely as a national grid company, whereby TNB will buy bulk power from a newly created subsidiary, TN Generation.

TN Generation will also act as an IPP and has already launched its first project via subsidiary company, TNB Janamanjung, which is developing a 2,000MW coal-fired power plant on a 800-acre piece of reclaimed island in Tanjong Katak, Perak. The reclamation exercise is carried out by Malakoff Bhd.

Another interesting development, according to the International Private Power Quarterly, is the licence awarded to Northern Utility Resources Sdn Bhd (NUR) to generate, distribute and sell electricity, the first of its kind in Malaysia. This would effectively undercut TNB's monopoly of selling gas directly and is a wider restructuring process of the power sector.

Under the recently granted 30-year licence, two subsidiaries, Nur generation Sdn Bhd and Nur Distribution Sdn Bhd, will build a gas-fired,

generating station of up to 450MW in stages, and install distribution facilities to serve the Kulim High-Tech Industrial Park in Kedah.

The publication says other IPP projects in the pipeline include the much publicised Bakun hydroelectric project, whose PPA with TNB is 30 years. It is currently under construction and will come onstream soon. Other IPPs under development are Automan Sdn Bhd, Teknologi Tenaga Perlis Sdn Bhd and Powertron Resources Sdn Bhd in Kota Kinabalu.

However, with the huge combined capacity of existing and future IPPs and TNB's installed capacity, there is now concern about excess capacity. There already seems to be an overcapacity situation.

Right now, TNB claims to have an excess capacity of over 40%. The norm for the reserve margin would be around 30%. 'But that is now, you see,' says an analyst. Future development of the country may mop up the surplus.

Electricity demand in Malaysia is growing at over 11% annually. Malaysia, Thailand and Singapore collectively have a demand growth of about 4,000MW a year. It is estimated that by year 2000, Malaysia would need 16,500MW.

The 7MP estimates Peninsular Malaysia's installed capacity at 13,548MW in year 2000. With the projected 11% growth in demand, TNB's reserve margin is expected to decline to 29.7%.

Anyway, export opportunities abound. Already supplying to Singapore, TNB has entered into an agreement with Electricity Generating Authority of Thailand to have a 70-mile, 300 kV HVDC interconnection between the two countries.

The development of the ASEAN Grid, a subsea link between Malaysia and other ASEAN nations, would also create opportunities for the local power industry, something Segari is aware of. As Azmi says, 'I would love to see the Lumut plant providing power right up to Cambodia, if not further.'

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