Chapter 4

OBJECTIVES AND CURRENT PROGRESS OF RESTRUCTING AND POWER POOLING IN MALAYSIA

4.1 Overview

The reform of the electrical industry has achieved significant results particularly at the generation level. The recent privatisation of power plants has demonstrated the government commitment in producing a "pure" competitive market. However, a lot more will need to be done. For example, the recent establishments of IPPs have not resulted in the lowering of tariff for consumers. Though the reliability and arguably, the quality of supply have improved, consumers are still clamouring for the reduction of their monthly electricity bills. For the last few months, TNB keep on asking government for the approval of the tariff increase due to higher operating costs.

With reference to the recent down slide of TNB shares, one of the factors may be triggered by news reported that TNB had not made any proposals to the government to raise tariffs when a new non-executive chairman was appointed. It is expected that a 1% increase in tariff would have resulted in a 6% rise in earnings for TNB. Since TNB had their hands tied behind their back due to the recent increase in price of fuel supply and high fixed price in power purchase agreement with some independent power producers, all these had badly affected TNB's overall financial performance. With reference to the market responses towards TNB's financial performance, it is clearly seen that the end users have yet to be benefited from the privatisation program but even worse is that the privatisation program also did not really benefited TNB at the time being.

Nevertheless, the transformation of a true wholesale market for electricity is well on the way. This reform process is driven by the changes in technology, policy of the government, environmental management and even the structural re-organization of the utility itself. For the changes to be effective, the government will have to implement certain strategic policies and promote "transparency". For the electricity utilities, focusing on the customer needs is a part of the strategy to remain competitive for years to come.

Within such a short lead-time and inroads made by introduction of competition, the times ahead for the Malaysia Electricity Supply industry and TNB are indeed very challenging. In order to make full use of the opportunities and reduce business risks, TNB has to be proactive, propel itself forward and be actively involved in the research and development. Commitment and know how from internal resources with the support of the external professional advisers are paramount. The challenges faced during the transition process should not be underestimated.

4.2 Objectives of Restructuring

The objective of restructuring in electricity industry is to introduce competition into electricity market and thus lowering of electricity prices for every customer through free market competition. In a deregulated market, price setting mechanism is freed-up and electricity exchanges or spot markets are opened to provide a foundation for building an open access system. Generally, deregulation is perceived as a means of encouraging efficiency through competition by allowing market forces to operate more effectively. To be fully competitive, the key stance that TNB needs to emphasis in the electricity business, are sound business strategies and clear operational objectives as follows:

4.2.1 Emphasis on Customer Needs

Customer needs shall be the prime focus and the beginning point of management thinking and action. In the past, the emphasis was driven by the profitability. Whenever expenses increased for a utility, they would pass on to the customer to maintain a predetermined return. However, in the future, utility will need to shift their focus to the customer and to understanding their needs and requirements. It is the customer needs that shall drive the level of investment and profitability and is to be determined by the marketplace because customers have the option to decide who is his electricity supplier.[20]

Profitability will not be viewed as a return from investment but as the difference between what the customer is willing to pay for his electricity and the costs incurred in generating and getting the electricity to him. When additional cost incurred, customer choices and competitive action create pressure on the utility so that additional costs are not automatically built into the price of electricity and passed on to the customers.

In order power producers to survive and to make a profit in a competitive electric market, they shall look into the following customer needs.[21]

4.2.1.1 Need for Low Price

Most of the customers would choose price as the deciding factor in determining their electricity suppliers. Independent power producers, will therefore to focus on lower price as their competitive advantage. While for utilities, they have to "buckle up" to retain customers and thus engage price as the competitive

[20] King, J. Michael, Hoch, J.Lance, and Gellings, W. Clark (1990), "Focusing on the Customer: Strategies for Growth and Profitability in the Next Century," 9th Conference on Electric Power Supply Indistry, paper no.1-18.

[21] Felton, E.L., and Harper, L.C. (1996), "Customer Needs, Not Demographics, should be used to establish Position in an Electricity Market," 11th Conference on Electric Power Supply Industry, Section 14.3, pp14-29.

weapon. These activities within the industry will intensified the focus on price and will strengthen customer perceptions that electricity is a commodity.

The more the customer views electricity as a commodity, the more important price is in his purchase decision. Though price sensitivity varies among individual customers, studies show that generally a price differential between five and ten percent is sufficient to cause price focused customers to switch from one supplier to another.

4.2.1.2 Need for Reliability

Reliability of electricity supply is one of the prime considerations in selecting a supplier. High-tech and heavy industries are extremely particular required high quality and reliable supplies and ensure that the industrial operations will not be adversely affected by problems such as surges, dips or blackout.

4.2.1.3 Need for Customer Services

The value attached to customer service is reflected in the number of customers who still pay their monthly electricity bills and varies widely among customers. Larger, established manufacturing facilities might probably employ engineers who can keep abreast with the latest developments in technology that can impact their production processes. However, the smaller or more inexperienced manufacturer may not have the above internal capability and thus relies on the utility to provide information regarding improved processes and new technology.

4.2.2 Transparency in the Electricity Supply Industry

Rules, regulation and decision on any awarding of contract, appointing of contractor, signing of PPA and financial report shall be in open tender basis and related information to be accessible by the public. In existing system, the government awards power projects directly to developers, while the tariff rate per unit is determined by the Economic Planning Unit without any consultation from TNB.

4.2.3 Effective Competition in Wholesale and Retail Power Market

Competition in both wholesale and retail power market shall be introduced in order to reduce the price of electricity. Effective competition does not only initiate competition, but also to achieve reliable power supply and adequate investment in generation and transmission. Deregulation system shall be able to provide clear price signals, which market players are able to respond quickly and effectively to changing supply and demand. [22]

Effective competition may take any of the following forms:

1. Loose Oligopoly: The four largest generators' market shares shall less than 50% and collusion among four is difficult or impossible.
2. Monopolistic Competition: There are many effective competitors but none of them having more than a 15% market share and no group has any influence over prices.
3. Pure Competition: There are over 20 competitors and their market share is negligible.

[22] Extract from Timothy J, Raymond K, (1996), " Policy Initiatives Competition to the Electricity Industry," Washington, Kirby Litograoh Company.

4.2.4 Achieving Technical and Financial Resources Efficiency from a Competitive Electricity Market

The marker structure shall be designed to meet economic of scale, providing accurate financial indication and adaptability of market players in a changing market. It is expected that an effective competitive system will achieve the following benefits:

1. Internal efficiency: Under competitive pressure, generators will make every effort to get the most out of their resources and resulting in lowest cost production.
2. Technological Innovation: To achieve competitive advantage, generators are encourage to introduce technological innovations either in terms of generation process, alternative sources of generation, power supply's quality and reliability.
3. Lower Prices: Competition means more market players. Maximization of choices for power suppliers means that customer has freedom to select their own suppliers based on the price, service, quality and reliability of the suppliers at the level of risk they prefer.

4.2.5 Low Entry Barrier or Non Discriminatory Access to the Pool

Market regulation shall ensure non discriminatory access to the pool with appropriate size of generators and market players. Foreign contractors or the companies with 30% foreign participation shall be allowed to access to the pool. Fair and transparent policies reduce entry barrier and generate creditable information, correct economic and financial signals and encouraging investments. Low entry barrier initiates effective competition.

4.3 Current Status of Power Pooling in Malaysia

4.3.1 Overview

Restructuring with introduction of power pooling for competitive bidding was proposed in October 1998 but has not progressed well since then. In January 2000, Ministry of Energy, Communication and Multimedia was still undecided because of issues relate to the effective competition, price, roles, supply and demand. The government can only decide in 2001 legislation.

If introduction of power pooling is successful, TNB's leading role will change as monopoly distributor as other companies are allowed to bid for the power. IPPs may also sell to customers that acting as utilities, and then resell to customers. However, in January 2000, TNB urged the government to reconsider plans introducing power pooling in the country and called off the sakle of its non-hydro power plants. According to TNB, power pooling is risky but managed market model where there is competition and guarantee income will be better for customers as the electricity price is not so volatile. However, the market viewed TNB's move to call-off the sales of its generation projects as to ensure a steady stream of revenue.

In June 2001, TNB has decided to against power pooling but go for a " Managed Market Model (3M) ", which has been principally approved by the government as part of its power sector restructuring plan.[23]

[23] Extract from Business Time (2001), "Better power rates with open Bidding," (June 5).

4.3.2 Pooling Doubts in Malaysia

Malaysian government's decision to initiate power-pooling system was to enhance the efficiency of the power industry. However, with California's power crises, most of the countries including Malaysia were puzzle of what had actually gone wrong with California's deregulation process and therefore have withhold and called to re-evaluate plans for deregulation.

With reference to TNB's decision to withhold the deregulation plans in June 2001, there were different opinions from the public about the power pooling system and its impact to TNB.

According to YTL Corp's managing director, Tan Sri Francis Yeoh, power pool could hurt TNB by the weakness inherent in the system, which is the power that gives certain players to form a cartel and determine prices. To bolster the efficiency of the industry, introduction of managed competition such as liberalizing the distribution side of the industry would be more appropriate.[24]

However, general public argued that advantages or disadvantages of power pooling for TNB depend on the final structure of the system and the utility's role in the bigger picture. If TNB continuous plays its intermediary role, that is buying power from IPPs and selling to end users, then it does not make any difference to TNB from its present state. If in a pooling system, there is regulation to protect consumers from paying more for electricity, TNB, which buys the power at a higher cost from existing IPPs will still cannot pass higher costs to end users. If totally let market forces decide on power prices, the subsidized gas prices at RM6.40 per mmbtu between TNB and Petroleum Gas Bhd. might have nullified. This could increase the cost of electricity production but due to a possible ceiling

[24] Extract from the Star (2001), "YTL Joint Bid for Singapore Plants," (July 12).

price to charge end users, the utility or independent entity will not be able to pass it on to consumers unless the ceiling price is not implemented.

Another opinion telling that if TNB is purely in charge of transmission and distribution, it does not need to worry anymore about constructing power plants or being buying power, but to be paid a fixed rate of return by IPPs for use of its transmission and distribution assets. As the obligation to supply power will be shared by many energy providers, TNB is now will be another player and the market forces will decide on the price of power. In this situation, TNB might have a better perspective of its financial position. If this is TNB's new role, it means that an independent entity has to be established to buy power from IPPs or the cheapest generators, then determine the selling price to consumers.[25]

4.4 Reasons Behind TNB's Decision Against Power Pooling

In June 2001, TNB has decided to against power pooling but go for a " Managed Market Model (3M) ", which has been principally approved by the government as part of its power sector restructuring plan. TNB decided to withhold and re-evaluate the deregulation plan because TNB feels comfortable with 3M model that allows TNB maintaining its 60% market share in the power generation sector, while the remaining 40% will be left opened for bidding from other IPPs. TNB believes that this model introduces healthy competition for new generation plants and continuous of it's dominance in power generation will help avoid the country from experiencing a power crisis and spate of blackouts like the one in California.

TNB argued that under power pooling system, power generation companies would have to compete to supply electricity. There power pooling means unpredictable tariffs for consumers. As power will be traded as a commodity, its price will fluctuate according to supply and demand. The power price in retail

[25] Extract from the Star (2001), "Take & Pay Scheme for TNB-IPPs Deals," (June 7).

market may also fluctuate and go a lot higher than the present tariff rates that consumers pay. Therefore Malaysians are not ready for power pooling.

According to TNB, it's top priority is to maintain the security of power supply and an attractive investment climate. 3M model will be able to maintain stable electricity tariffs, promotes efficiency, competition and controlled risks, which allows TNB maintaining its function as an integrated company, which retains its responsibility to supply power, maintains its scale and capability base and supports national and social obligations. TNB emphasis that 3M concept are high grid reliability, adequate power generation and stable wholesale prices because they would be on fixed prices basis by having contracts and power purchase agreements, thus ensuring competitive power prices for consumers.[26]

3M model encourages smart partnership between TNB and private sectors in generation sector through open bidding (to be introduced in 2005) for the construction of new power plants. Although open bidding in smart partnership concept is seeing creates only limited competition, but TNB argued that it is still better than existing system where the developers are appointed by the government. The lowest bidder will then carry out the project under the fast track program. Smart partnership is achieved by the continuing use of long-term power contracts and the efficiency is driven by regulation.[27]

It is no doubt that open bidding will improve efficiency in the industry and promoting greater transparency and encouraging lower cost power production and TNB will be at financially advantage to negotiate new PPAs, for getting lower pricing and a more reasonable rate. However, it is far from being a reality before it can take off in 2005. In open bidding, tougher PPA terms and competitive bidding warrant favor TNB's future in share market but clouded IPPs.

[26] Extract from the Star (2001), "TNB Plans to Adopt the Managed Market Model," (June 7).
[27] Extract from the Sun (2001), "TNB Decides Against power pooling," (June 7).

4.5 TNB's Dilemma at existing PPA

At existing PPAs, TNB buy power from IPPs for 21 years and paying for the capacity generated regardless of need. As a consequence, payments to IPPS become TNB's largest operating costs, 60%. Because of this doubtful PPA agreement, TNB is saddled with debts of about RM 27.6 billion. For the year ended August 31st 2000, TNB had paid RM 4.47 billion for electricity generated by IPPs, 18% increase compare to last year. TNB complained that the earlier PPAs contained minimum take clauses, which did not allow for adjustments when TNB is in difficulty times.

Government's little foresight with aggressive planting up program and overzealous award of constructing power plants before 2005 will shift the country's power industry dramatically to over capacity. Because of this, Malaysia's energy reserves margin will soar up to above 40% in two years and 59% by 2005. The planned capacity is at average of 11% per annum up to 2007, but real demand growth is slow and expected to be only 6 to 7%. But government intent to stick on its projection that lies the difference of perception between TNB (6 to 7%) and the government. Reasons given by government were it is better to be safe than sorry when there is power shortage and too many changes in the short term will have adverse impact on the industry. It means that does the cost of under capacity outweigh that of over capacity? In this event, TNB will be the biggest loser, as being accused of not mindful of TNB's balance sheet and over capacity will definitely worsen TNB's financial situation, as it has to pay for the unwanted capacity.[28]

[28] International Private Power Quarterly Report (2001), " Malaysia's Private Power Status," Second Quarter, pp88-92.

4.6 TNB's Proposals in New Restructuring Program

With reference to TNB's dilemma at existing PPAs, TNB is considering to revise its existing power purchase agreements. For the new agreement, TNB will pay IPPs only on the power sold to customers depending on the industry's demand, but not committed to the purchase of fixed amounts at a pre-set level. The system intends to reduce the current excess capacity. In the same time, TNB requests longer agreement term rather than the present 21 years, this will ease TNB's financial burden. However, take and pay system may cause the local power industry to shrink. No guarantee or uncertainty on the amount of generated power could sold might discourages companies from investing in the power plant project, which involves very high capital cost. The IPPs may go burst in the event of lower power demand.

4.7 Comments on TNB's Decision to withhold Power Pooling:

That is no doubt that TNB will be benefited in 3M model, but we generally do not agree on its move to withhold the deregulation process. TNB shall not just look at one side of the failure story in California power crisis but forget about the key objective of restructuring in electric power industry. TNB shall study at power pooling models in Australia, New Zealand, UK and the good side of California, then formulates a regulatory mechanism with more detailed market rules to prevent any one party, especially those big players from cornering the market and to dictate or influence the price of power. The pooling system can be mandatory with a very low entry as low as 10MW to promote energy efficiency and conservation..). If possible, both TNB and IPPs could agree to nullify the earlier agreement or reform the new ones into buyer-seller contract under a pooling system.

We think that TNB shall proceed with restructuring process and to avoid making similar mistakes as what California had done, which will discuss in details in Chapter 5. Further more the background in Malaysia is different from California because there are no strong climatic or seasonal changes leading to a drastically unpredicted demand profile, whereas natural gas supply and prices are regulated and stable. There are also no transmission constraints or stringent environmental legislation that discouraging investment in generation capacity. Government's proper planning has led to a sufficient margin of capacity.

Of course, if TNB wish to proceed with full restructuring, TNB must ensure its market design has taken all lessons had learnt from California. Deregulation in Malaysia must be carried out stage by stage with proper market studies and analysis before progressing to the next stage. Price cap is advisable not to be imposed for the 30% of the largest customers, so that wholesale price can be passed on to control demand. It is also important to have hedging contracts and impose simple single market operator.[29]

4.8 Recommendation for "Strategies to Achieve Technical and Financial Efficiencies through a Successful Restructuring Plan."

To avoid the inefficiencies associated with high electricity bills despite of restructuring or implementation of private power programs, both TNB and the government are highly recommended to adhere of the following strategies for achieving both technical and financial efficiencies through a successful restructuring plan.[30]

[29] Extract from Neil Gibbs (2001), "Restructuring the Power Markets: Lessons Learnt?", K.L, Malaysian Electric Power 2001 Forum, July, pp14-15.

4.8.1 Implementation of Fair and Transparent Bidding Procedures

The value of following fair and transparent procedures for awarding bids and negotiating contracts should be self-evident. By following fair procedures, government will maximise the involvement of foreign investors, and will provide international lenders with comfort that negotiated deals will not be overturned at a later date if political circumstances change. By maximising the participation of lenders and investors, thereby obtaining the most competitive bids for their private power projects. Transparency allows outsiders to verify that decisions have been made fairly. It also permits an open discussion of results and procedures, which may generate ideas for innovative implementation approaches for future projects that prove more efficient.

4.8.2 Well Established Threshold Regulatory Framework

Before attempting to implement any private power projects, government should have developed the regulatory frameworks to some threshold level sufficient to attract quality investors and international banks. In some cases, the private power projects were implemented before threshold regulatory frameworks were established. The premature implementation of projects has led to major delays in negotiating private power, largely because government attempted to use political consensus in the negotiation process.

Specific issues that should be settled at the policy level are government's guarantees of utility performance, allocation of force majeure risk, treatment of foreign exchange risk and effects of changes in law or government actions. Detailed procedures and specific regulations should be established with respect to accounting principles and tax regulations and procedures for terminating

[30] Extract from Felton, E.L., and Harper, L.C. (1996), " Five Perspectives that need to be Recognised in a Competitive Electricity Market and how to use them for Market Success," 11th Conference on Electric Supply Industry, Section 23.5, pp592-596.

projects. Environmental requirements that will apply need to be defined. Institutional arrangements should also be clearly established. Separation of responsibilities and authorities, including that of the government's negotiating team, should be agreed upon before projects are implemented. These institutional arrangements should be made so as to support the efficient and timely implementation of private power projects. Delay or failure to implement the Bakun hydro generation project as per schedule is a clear example of this issue.

4.8.3 Changes in Policy Status

Malaysia's Ministry of Energy, Communication and Multimedia said in January 2000 that it is still undecided on electricity industry restructuring in introduction of a power pool. This restructuring was first proposed in October 1998, but has not progressed due to issues of competition, price, roles, and supply and demand. The restructuring of introducing the power pool for competitive bidding mean that TNB's leading role as a distributor of electricity may change, with companies being allowed to bid for the power. As an alternative, IPPs may also start sell power directly to companies acting as utilities and who will then sell to consumers.

TNB shall consider allowing foreign investors to take stakes of between 30% to 40% in TNB's generation projects. Already, the company is planning to dispose as much as 40% interest in each of its hydro plants, opening the door for foreign companies. Another possibility under construction is the restructuring of TNB subsidiary TNG to allow foreign investment.

Malaysian government shall consider easing restrictions on foreign ownership of independent power projects. The ministry is apparently seeking direct foreign investment as a means of helping the country weather the Southeast Asian financial crisis. But foreign ownership remains a contentious issue in Malaysia, and the Ministry will likely restrict total foreign ownership of power sector assets.

Government is now examining the possibility of introducing PPAs with a tenor of less than 15 years as a means of reducing the utility's long term commitments in an environment in which it could find it difficult to honour longer commitments. TNB would favour PPAs that allow for adjustments to be made in difficult times, and which should not contain minimum-take clauses. Another alternative is the possibility of putting into place a pooling system that would allow electricity to be traded on a regular, short-term basis as opposed to signing long-term PPAs.

Under Security Commission guidelines, an independent power producer or infrastructure project company can be publicly listed if it has a total cost in excess of $200-million. The SC has formulated special rules for IPPs to enable them to raise equity, even without a profit track record providing that the company has a healthy and predictable income stream and realisable profits for a contractual period of at least 18 years.

4.8.4 Conducting of Fair Negotiations

Successful negotiations are those built on trust. A reliance on negative tactics and negotiation gambits only serves to destroy that trust, and should be avoided at all costs. It is unfortunate that in many negotiations, this simple principle is ignored. Most often, the principle is ignored when negotiators are either not prepared to discuss specific issues or are inexperienced with professional negotiations.

For private power projects, government is asking investors to make a long term investment in the country, hence fair negotiations are a must if both sides are to trust each other sufficiently to make the "leaps of faith" necessary for bridging differences in the negotiations.

4.8.5 Avoided Cost Vs Cost Plus

The assumption that private power is a cheaper, or at least a more efficient, method for supplying electricity than the state-owned utility has been accepted perhaps too readily. State owned utilities are able to achieve economies of scale for plant operations. They have extensive experience managing the construction of power plants, are well informed concerning site conditions, and are highly experienced in dealing with local contractors. Given these impressive strengths, the alternative of private power may not be the least cost solution in all cases.

Avoided cost is defined as the cost to the utility of using its own resources to construct and operate some future capacity addition. Then private power developers are requested to submit bids priced at or below the utility's avoided cost. This is to verify that a fair and competitive bid award process has taken place. In short, the negotiations tend to focus on cost plus considerations, under which the developer is allowed to recover reasonable costs and to earn a reasonable return on his equity.

4.8.6 Create a " Diversified " Private Power Program

Government should attempt to develop and implement a diversified private power program, one that provides opportunities to develop small and medium sized projects as well as the large-scale projects. The program should also be diversified with respect to primary fuel, power plant technology and market served. A diversified program will not only reduce technical risks that the program will impose on the power supply system. But will also enhance the level of competition and the "bankability" of the total private power program. A diversified private power program will help support the goal of least cost power system expansion.

4.8.7 Implement Projects Systematically

Overwhelmed by an urgent need to expand caused the government to rush to negotiate private power deals without first completing important planning activities or establishing objective bid solicitation and award procedures. The systematic process for implementing private power projects are Planning, Bid solicitation and award, negotiation, construction and Operation. Many of the problems that have occurred could have prevented if the implementation process and related procedures had been developed beforehand and then followed without major deviation.