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" THE CHANGING STRUCTURE OF THE ELECTRIC POWER  
INDUSTRY: AN UPDATE "

I would like to thank the organisers, the Ministry of Energy, Communication and Multimedia, Tenaga Nasional Berhad and ASLI for inviting me to deliver this keynote address before leaders, experts and executives in the energy and electric power industry. I join the organisers to bid a warm welcome to all the distinguished delegates to this Malaysian Electric Power Forum 2001.

2. Malaysia has enjoyed electricity for more than 100 years. We have seen the industry transformed from its humble beginnings in the form of isolated plants supplying mining operations into localised district supply systems supplying the commercial, industrial and domestic sectors. This was followed by central power stations making their appearance because of their economies of scale, accompanied by construction of transmission lines and a national grid supplying the whole nation from end to end. All things are familiar in the development of electricity use in most countries. But Malaysia made a special effort to supply electricity to the rural areas including to the poor. The homes of the poor are frequently separated by miles of forests and hilly land and supplying them costs uneconomic sums of money. But we feel they deserve to have electricity without giving any return on the outlay. It is a social duty. Today, we have achieved rural electricity coverage of more than 93 per cent in the country. With almost universal coverage in Peninsular Malaysia, our priorities for the RM856.6 million allocated in the Eighth Malaysian Plan, will be the rural communities in Sabah and Sarawak.

3. The Government's active role in the industry has been one of the key factors leading to the spread of electricity use. By creating a centralised electricity board in the middle of the 20th century, consolidating all the municipal operations, the transition into an interconnected national network system at minimal cost was made possible. The single utility also ensured that engineers and technicians could move around the country, building expertise and managing projects more

efficiently and effectively. Efficient and economical thermal power plants could be built to supply, not just the locality, but also any part of the country. But most importantly, as a centralised Government-owned utility, it was easier for the industry to seek and receive the required funding to finance the investments either from the Government or through Government guarantees.

4. However, times have changed.

5. One of the industries that became the target for privatisation and liberalisation in many countries during the 1990s was the electric power industry. Run for many decades as national monopolies, the demand for power increased so rapidly that the Governments became unable to build the power plants fast enough. The Government monopoly, usually unprofitable, became unwieldy, inefficient and a drain on Government coffers. Privatisation of the power industry began to look more and more as an attractive alternative. The problem was the form of privatisation which would not result in the social needs becoming neglected. The private enterprises must look for the bottom line in order to justify investments of huge sums in new plants. This may end up in power being too costly and the cost of living going up too fast for the good of the country.

6. In countries that already have investor-owned electric power utilities - Western Europe and the U.S. for example - Governments embarked on establishing some kind of market mechanisms, popularly called the "power pool" where electric power generators could bid and sell bulk power to distribution companies or large customers. It was believed that this competitive bidding would keep electricity rates low.

7. Other countries have tried to customise their own initiatives to suit their local conditions. For a time the competitive bidding by power suppliers was believed to be the ideal way of managing electricity supply. Many countries, were adopting or seriously considering adopting the market mechanism. Then came the persistent breakdown in power supply in California where the system had been used for a very long period.

8. Apparently what happened was the dismantling of plants by those power suppliers who had failed to win bids. The plants were idle, and even in idleness much money had to be spent on maintenance. Yet there was no income. The logical thing to do was to close down. When demand suddenly picked up there was no stand-by power to fall back on. And building new plants takes a long time. In the meantime black-outs and brown-outs have to be endured by the highly developed state of the U.S. and its very rich people. In a third-world

country this can be accepted, but not in a highly developed country.

9. The electricity industry is peculiar in that there must always be a fairly big reserve power available. Obviously the reserve capacity will not earn money. Who should be responsible for these stand-by plants? Surely not the companies which had not won in the supply bid. Even those which won would want to minimise their cost by selling all the power they could generate. In the end the stand-by capacity would be neglected in favour of lower bidding prices. The result is an inability to meet sudden surges in power demand or when a major breakdown occurs.

10. Because of the disastrous experience of California many, including Malaysia, are more cautious in restructuring the electricity industry. It is too important an industry to be left entirely to market forces. As I said earlier, in Malaysia, we have built a system that has progressively become more and more technically sophisticated and reliable. By doing so, we have also developed our technical and scientific manpower resources and this is important for the advancement of our country. We should not risk losing this technical aspect and our objective should be towards building a high quality electricity supply system for the people aimed at keeping the lights on at reasonable prices. With this objective in mind, the Government has decided that we re-look at the restructuring in the light of recent experiences in other countries. The power pool and biddings to supply need not be the best solution to aim for in the short or medium term.

11. The present electric power industry has served the country well. However, this does not mean we do not need any change. Change is still necessary. We still subscribe to the concept of competition and efficiency but should maintain adequacy, reliability, quality and security of supply as the first priorities. We need not follow blindly models that have been adopted in more advanced countries that are not really applicable to us. We do not want to risk entering a situation that will cost us so much more to undo when things go wrong. It would be better to progress one step at a time and with enough time to measure the effect of those changes before proceeding with the next. We have learned enough from the experience of the Asian financial crisis of 1997, so as not to be over-dependent on market forces which economists so mistakenly believe as being "perfect".

12. The introduction of Independent Power Producers or IPPs in Malaysia was intended to instill competition in the industry. Unfortunately, some have alleged that IPPs have caused electricity to be more expensive to

TNB. But this was merely a short-term temporary cost that was necessary to break the barriers of entry. As the IPP industry matured, costs must come down, and this has been well demonstrated.

13. What we need now is to evolve and refine this model further. We are ready to introduce a more transparent competitive bidding process as the next immediate step, where IPPs can be expected to compete for new power projects. This will generate a more competitive pricing structure. If the need to have enough stand-by capacity is always borne in mind, eventually this should result in the fairest prices to all. Winning bids can be used as a basis for long-term power purchase contracts as an alternative to real-time bidding in power pooling markets, which has experienced problems and raised doubts elsewhere.

14. Another area that will need change is putting industry planning in its proper place. In the absence of the so-called power market, it is apparent that planning for adequacy, reliability and future growth in new generation, transmission and distribution capacities must be carried out effectively and independent of the industry players. This planning is required to determine when, where, what size and what plants or power facilities will be required and offered for bidding.

15. As a first step, the Government established the Energy Commission, with effect from 1 May 2001, with a view to increasing the effectiveness of the regulatory supervision of the energy sector, more specifically, the electricity supply industry and the gas supply sub-sector of the industry. At the moment, these regulatory functions are the responsibility of the Department of Electricity and Gas Supply, which will soon be dissolved when the amendments to the Electricity Supply Act 1990 is passed by Parliament.

16. One of the principal areas of responsibility for the Energy Commission will be the planning of capacity adequacy in the electricity industry. The Commission will be entrusted with the task of calling for bids for new planting-up programmes. Apart from the planning function, the Energy Commission will also be responsible for the promotion of research and development; improving energy efficiency and the productive value of energy consumed; and the promotion of new and renewable sources of energy. The promotion of renewable energy and the efficient utilisation of our energy resources is part of our National Strategy on Fuel Diversification and is in line with the sustainable development goals of the country.

17. The Government fully subscribes to the concept of sustainable development. In our pursuit of growth and

development, we must be conscious of the needs, expectations and higher aspirations of our children and generations to come. We must pursue a growth strategy that places high priority on protecting and leaving a resource-rich environment for the benefit of our children and grandchildren. That is our moral obligation. Although progress and economic growth are important national priorities, we have been careful to ensure that it is not pursued at the expense of the environment. From a state of over dependence on oil before the oil crises of the 1970s, Malaysia embarked on a fuel diversification strategy that focused on cleaner resources like natural gas and hydroelectric power. In 1980, our power plants recorded 85 percent oil consumption and today their dependence on oil has reduced to a mere 8 percent. Natural gas usage in this sector, on the other hand, increased from a mere 1 percent in 1980 to more than 71 percent in the year 2000.

18. Today, under the Third Outline Perspective Plan, we have now embarked on a much cleaner fifth fuel strategy that focuses on renewable sources of energy and energy efficiency. A recent study completed by the Government has shown that the renewable sources of energy available in the country have a technical potential of about 36 million tonnes of oil equivalent. This is a huge resource that would be wasted if not adequately tapped. Most of these resources are biomass wastes generated by our industries that also face problems in disposing them with minimal negative impact upon our environment.

19. By its nature, electricity is a form of energy that can help meet the objectives for sustainable growth. It gives us multiple choices of primary energy fuels that include oil, coal, gas, hydro, biomass, solar and various other forms of renewable energy. It is for us to establish the most economic and optimal mix. It also gives the opportunity to generate power at locations away from areas of high population concentration enabling greater opportunity for the environment to absorb any pollutants resulting from the power stations. In addition, electricity also allows for easy distribution, and helps remove the constraints of power transport on the transmission and distribution networks. It is this flexibility that makes electricity a form of energy that can be moderated according to our needs and concerns for sustainable development.

20. I take this opportunity to congratulate the Utilities for their recent initiatives in promoting renewable sources of energy, efficiency improvements and demand-side management. These efforts should be intensified for greater economic resilience and to enhance the nation's competitiveness.

21. Electricity peak demand in Peninsular Malaysia alone has grown from 3447 Megawatts in 1990 to 9948 Megawatts this year, and this is projected to grow by more than 117 percent to 21,668 Megawatts in the year 2010. With such huge demand growth expected in the future, it is imperative that we achieve greater energy efficiency. Yet another study completed recently by the Government shows that if we were to encourage our industrial and commercial sectors to improve their energy use efficiency by a mere 10 percent, the resultant total national benefit will be more than RM5.8 billion over five years. However, once efficient technology and practices are put in place, the benefits will continue to accrue over the life of the equipment that can range from 10 to 15 years.

22. Until Malaysia reaches a level of development envisioned in Vision 2020, we will continue to push for rapid growth. It is therefore imperative that we pursue a strategy that meets the demand for reliable and quality supply. As stated earlier, in the 1960s and 70s our economy was fueled largely by oil. In the last two decades, we had gradually grown our reliance on natural gas. And, it is obvious that for sustained future growth, we will need to further diversify our energy resources. For this reason, the Government will continue to advocate the promotion of the renewable energy and energy efficiency as the fifth fuel in its fuel diversification strategy. As a country generating considerable amounts of biomass wastes, notably in the palm oil and wood industries, we have vast potential for substantial recovery of energy from these wastes. Since the energy industry is set to see continued rapid growth, greater energy use efficiency will not only help reduce wastage and improve the competitiveness of our industrial production, it will also facilitate sustainable growth through the maximisation of resource utilisation.

23. Renewable energy and energy efficiency, being new growth industries worldwide with growth projections higher than the conventional energy business, offer far greater potential for entrepreneurial and technological development. If a successful industry can be nurtured in the country early, Malaysia can quite easily assume leadership positions in the export of new technologies and consultancy services in renewable energy and energy efficiency.

24. We should be proud of the achievements of our electricity supply industry. Except for one or two glitches in the history of the industry, which were good lessons in our growth, we have done reasonably well.

25. Let us learn from our mistakes, and persevere to

improve the level of reliability, security and quality of electricity supply in this country. For a fast growing country like Malaysia, priority should be placed on these criteria rather than compromising on them simply in the name of competition and liberalisation.

26. If it is greater efficiency and innovations we need, I believe that we can achieve this through national aspirations and stewardship. I hope the culture of cooperation and coordination among all the industry players will continue, and together we should strive to make the industry more efficient, cost-effective, and progressive. Maintaining an industry structure consisting of IPPs based on competitive bidding in the generation sector should instill a competitive spirit in the industry so that we remove all opportunities for complacency. This forum is a fine example of cooperation and coordination among players in the industry, and I hope your deliberations would continue to enhance this spirit of exchange and harmonisation.

27. On that note, it now gives me great pleasure in declaring the Malaysian Electric Power Forum 2001 officially open.