Presentation 2.7: Energy and the Forest Products Industry in Malaysia

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Abstract

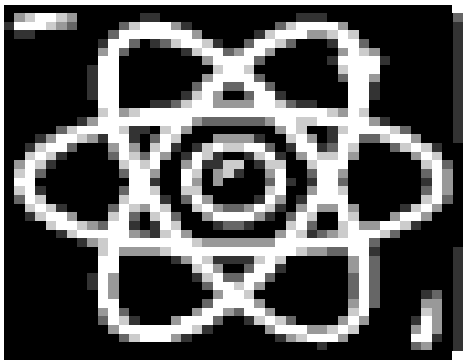
Energy is the key ingredient to any economic activity. Adequacy of energy supply is important for acceleration of economic development. Consumption of energy however produces some undesirable impacts on the environment and climate. Hence, sustainable use of energy is being given increasing attention in Malaysia.

Malaysia is well endowed with both conventional (non-renewable) and non-conventional (renewable) sources of energy. The largest non-renewable energy resource found in Malaysia is petroleum (i.e. oil and gas). This resource is being actively exploited. Renewable sources of energy are also abundant in Malaysia, the most important ones being biomass and solar.

As noted above the term "exploited" as is previously practiced is now replaced by sustainability.

1. Wood fuels is traditionally used in local domestic heating for household sector and wood based industries. The awareness on the economy value of wood turns the usage of wood as fuel to value added product such as furniture. Nowadays, wood residues generated at different stages in the production of wood products are collected to be used as raw materials to produce fibre boards and particleboards.
2. Increase in petroleum price recently, open the eyes of the world to accelerate the search on alternative energy to replace petroleum. Malaysia introduced "biodiesel" as a first step to reduce the use of petroleum.
3. The charcoal industry is a true example of a managed renewable energy resource. The matang Mangroves in Malaysia exhibit a sustainable energy production and has been an enormous success which may be the model to emulate for other sustainable renewable energy regimes elsewhere. The mangroves also play a crucial role in disaster defence like the recent Tsunami episode.
4. With massive experience in utilising natural resource for our own benefit in the longer term Malaysia is gearing herself to develop more resources of sustainable energy.

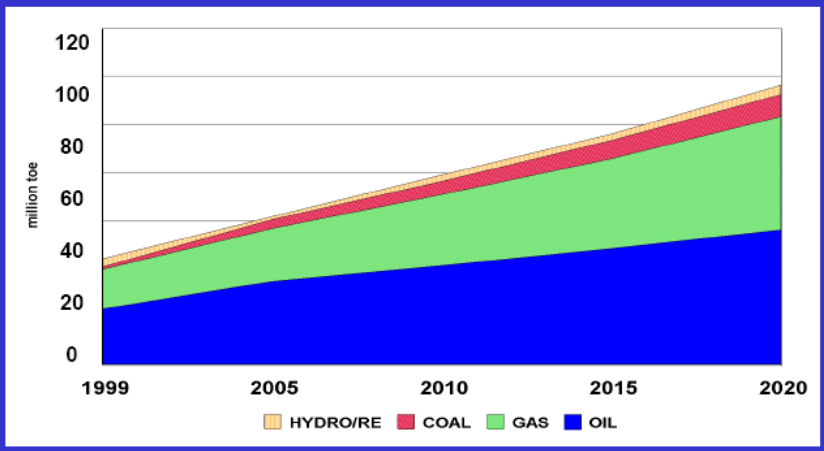
MALAYSIAN PERSPECTIVE ON ENERGY



MALAYSIAN GOVERNMENT POLICIES RELATED TO ENERGY

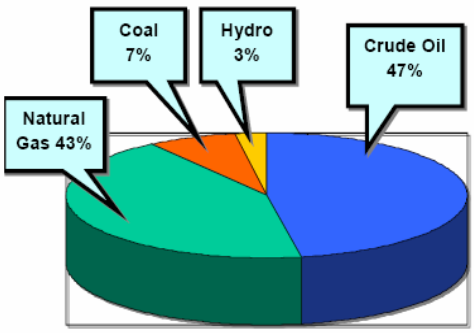
Petroleum Development Act 1974	**National Petroleum Policy 1975**	**National Energy Policy 1979**	**National Depletion Policy 1980**	**Four-Fuel Diversification Strategy 1980**	**Five-Fuel Diversification Strategy 1999**
∗Vested on PETRONAS the exclusive rights to explore, develop and produce petroleum resources in Malaysia	∗To regulate downstream oil & gas industry via the Petroleum Regulations 1974	∗To ensure adequacy, security and cost effectiveness of energy supply ∗To promote efficient utilization of energy ∗To minimize negative environmental impcts in the energy supply chain	∗To prolong lifespan of Malaysia's oil reserves for future security & stability of oil supply	∗To pursue balanced utilization of oil, gas, hydro & coal	∗Renewable energy included as the "fifth fuel" in the energy supply mix

MALAYSIA PRIMARY ENERGY DEMAND FORECAST



- Energy consumption for 2002 was 39 mtoe (million tonne oil equivalent)
- The energy demand is expected to grow at about 3 to 4% p.a. over the next 20 years
- Oil & gas is expected to contribute about 90% of the energy requirements

ENERGY SUPPLY SITUATION IN MALAYSIA



SOURCE : National Energy Balance 2002
Min of Energy, Communications and Multimedia

- Oil and gas accounted for 90% of the total primary energy supply in Malaysia
- Industrial and transportation sectors consumed almost 80%** of primary energy supply
- Malaysia's total primary energy supply in 2002 stood at about 51 mtoe against demand of 39 mtoe.

** Of which 63% is petroleum products and 17% natural g

SUMMARY OF CURRENT SCENARIO

- The current energy consumption is about 39 mtoe including electricity demand of 6 mtoe
- Oil & gas account for about 90% of energy requirement
- Based on the current crude oil production rate of 600,000 barrels per day, the crude oil reserves are expected to be depleted in about 18 years
- Based on gas production of about 5.8 billion scfd, Malaysia's gas reserves are expected to be depleted in about 35 years

ISSUES & CONCERNS

- How could we reduce the growth in energy consumption without affecting the economic growth?
- How could we enhance the oil & gas recovery from our fields?
- How could we economically develop & produce the existing reserves?
- How could we improve our exploration efforts so as to replenish and increase our reserves?
- Are there other feasible alternative sources of energy to supplement oil and gas?

MITIGATING PROGRAMMES

Measures being undertaken to address or mitigate the issues are :

1) To enhance efficiency of energy utilisation
   - Plants/equipment energy efficiency
   - Improve energy management

2) To increase supply capacity
   - Increase oil & gas reserves and production
   - Alternative oil & gas sourcing (e.g. TAGP & foreign sources)

3) To develop alternative energy sources
   - Hydroelectricity
   - Biofuel
   - Biomass
   - Solar

ALTERNATIVE ENERGY SOURCES (3)

Biomass

- Sources are oil palm, wood waste and municipal waste
- Potential of 3000 MW biomass-based power generation in Malaysia
- Three commercial power plants with a total capacity of 17 MW are currently in operation
- Nine demonstration plants are being tested on rice husks, wood waste, palm oil residue and biogas

CONCLUSION

- From the Malaysian perspective, mitigation of oil supply disruptions will depend on the success of the following 3-prong approach:
  - Minimising energy consumption through enhancing energy efficiency
  - Increasing oil and gas supply capacity by increasing reserves and production
  - Securing oil and gas supplies from external sources
- The development and utilisation of alternative energy sources are important to supplement Malaysia's oil and gas resources
- Technology / R&D and collaboration are critical success factors in meeting the above challenges.

THANK YOU

Abbreviation:

- SCFD - Standard Cubic Feet Per Day
- TAGP - Trans Asean Gas & Pipeline
- Hydro/Re - Hydroelectric/Renewable energy