

# TRAINING AND DIALOGUE PROGRAMS OF JICA

## ENERGY POLICY

COUNTRY PRESENTATION: MALAYSIA



May 2011

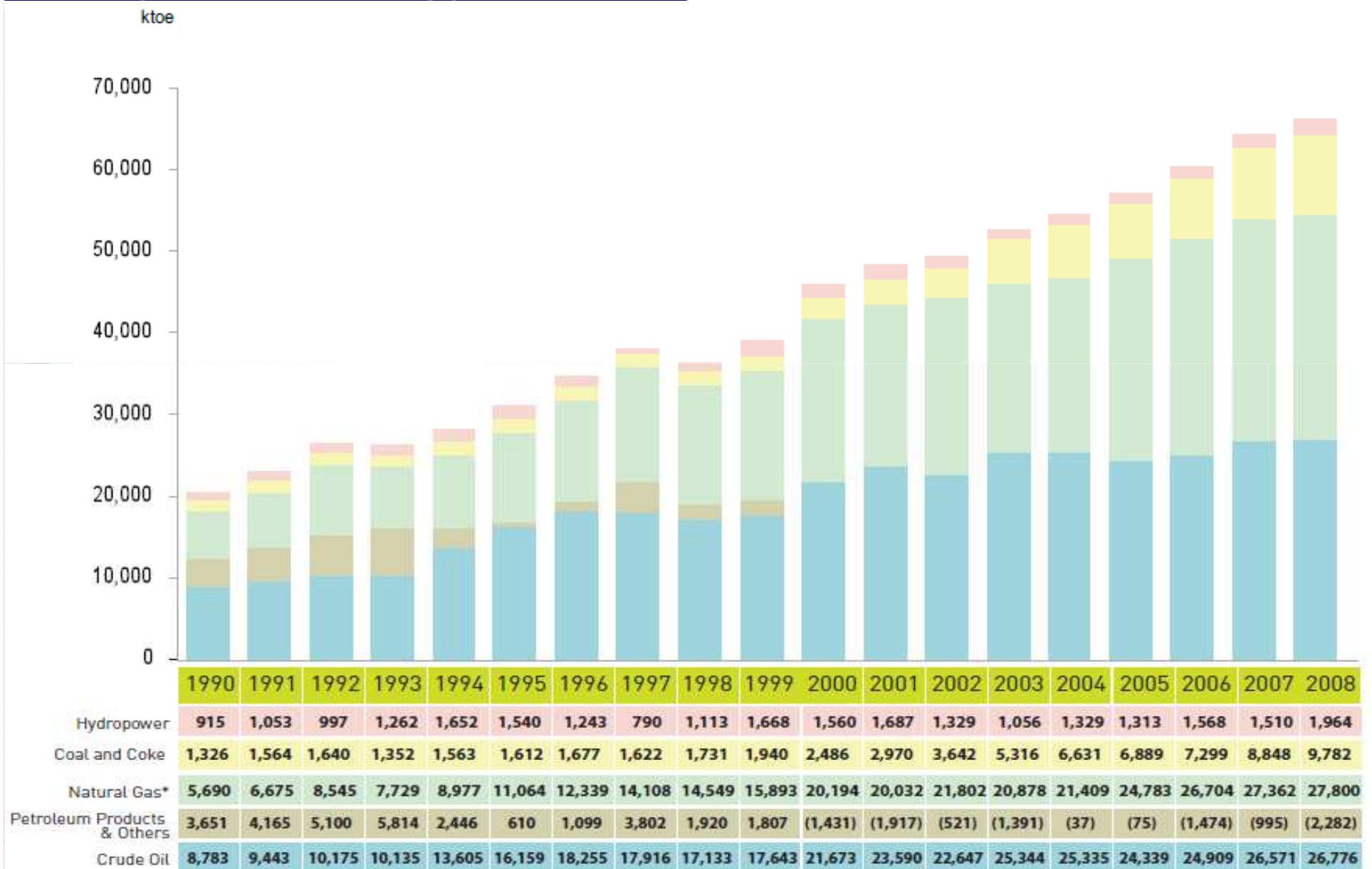
## Outline

- 1 Introduction : Key Data of Malaysia
- 2 Energy Policies
- 3 Electricity Sector in Malaysia
- 4 Challenges in Meeting Future Energy Demand
- 5 Moving Forward: Fuel Management
- 6 Subject Interest
- 7 Conclusion

## Malaysia's Key Indicators

<b>Year</b>	<b>2010</b>
<b>Population</b>	<b>28.9 million</b>
<b>GDP (PPP)</b>	<b>USD219 billion</b>
<b>GDP Growth</b>	<b>7.2%</b>
<b>Per capita income</b>	<b>USD8,100</b>
<b>Area</b>	<b>329,847 sq km</b>
<b>Energy Resources (2008)</b>	
<b>Oil</b>	<b>5.4 bbl</b>
<b>Gas</b>	<b>88.01 Tscf</b>
<b>Coal</b>	<b>1.938 bil ton</b>
<b>Hydro</b>	<b>23 GW</b>

# Malaysia's Energy Profile



## Outline

- 1 Introduction : Key Data of Malaysia
- 2 Energy Policies
- 3 Electricity Sector in Malaysia
- 4 Challenges in Meeting Future Energy Demand
- 5 Moving Forward: Fuel Management
- 6 Subject Interest
- 7 Conclusion

# Energy Policies

## Malaysia's Energy Framework

**National Petroleum Policy (1975)**

**National Energy Policy (1979)**

**National Depletion Policy (1980)**

**The Four-Fuel/Diversification Policy (1981)**

**The Five-Fuel Policy (2001)**

# Energy Policies

## National Petroleum Policy (1975)

**Efficient utilization** of petroleum resources

Ensuring the nation exercises **majority control** in the management and operation of the industry

## National Energy Policy (1979)

Supply Objective: Ensure **adequate, secure and cost-effective** energy supply.

Utilization Objective: Promote **efficient utilization of energy and eliminate wasteful and non-productive** usage

Environmental Objective : Minimize **negative impacts** to the environment.

# Energy Policies

## National Depletion Policy (1980)

Formulated to **prolong the life span** of the nation's oil and gas reserves

## Four-fuel / Diversification Policy (1981)

Aimed at ensuring **reliability and security** of supply through **diversification** of fuel (oil, gas, hydro and coal)

## Five-fuel Policy (2001)

Encourage the **utilization** of **renewable resources** such as biomass, solar, mini hydro etc

**Efficient utilization** of energy



## Outline

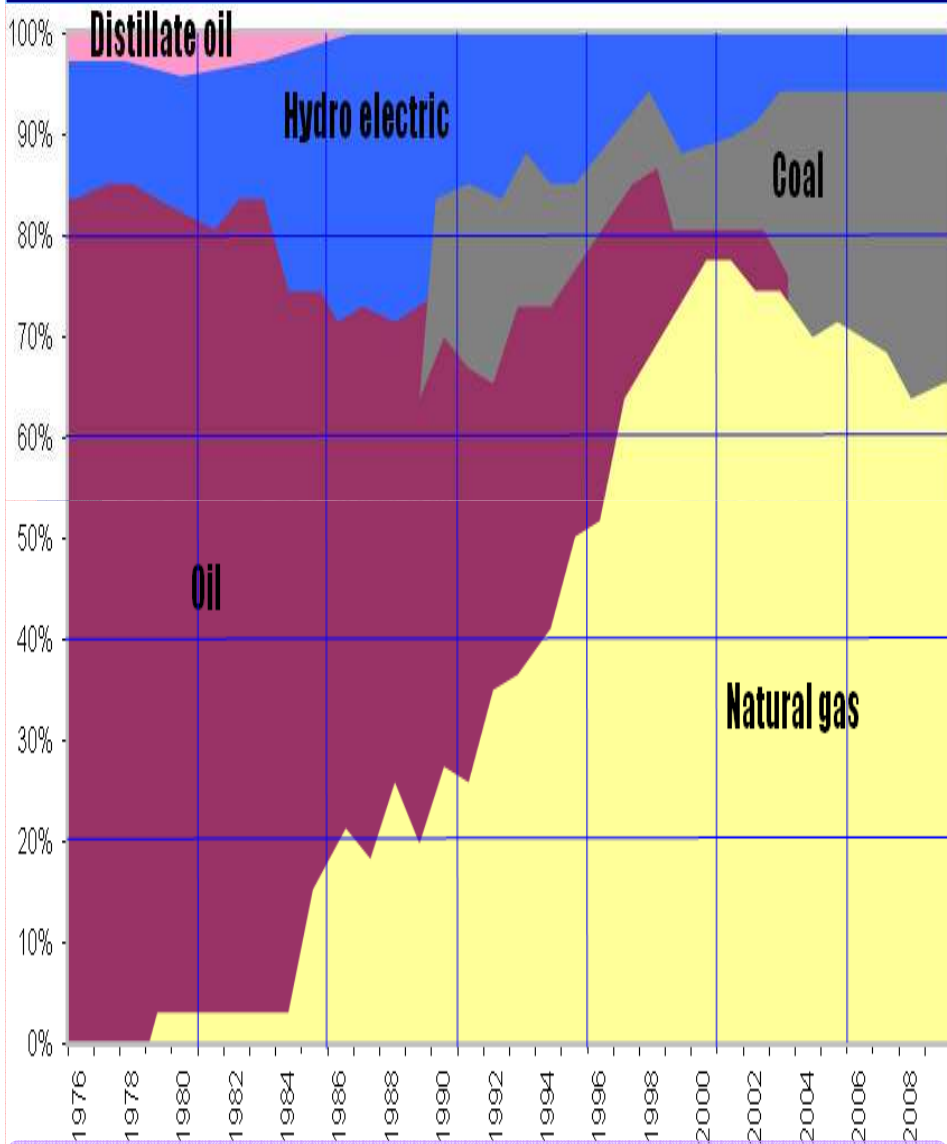
- 1 Introduction : Key Data of Malaysia
- 2 Energy Policies
- 3 Electricity Sector in Malaysia
- 4 Challenges in Meeting Future Energy Demand
- 5 Moving Forward: Fuel Management
- 6 Subject Interest
- 7 Conclusion

# Snapshot of Malaysia's Electricity Profile

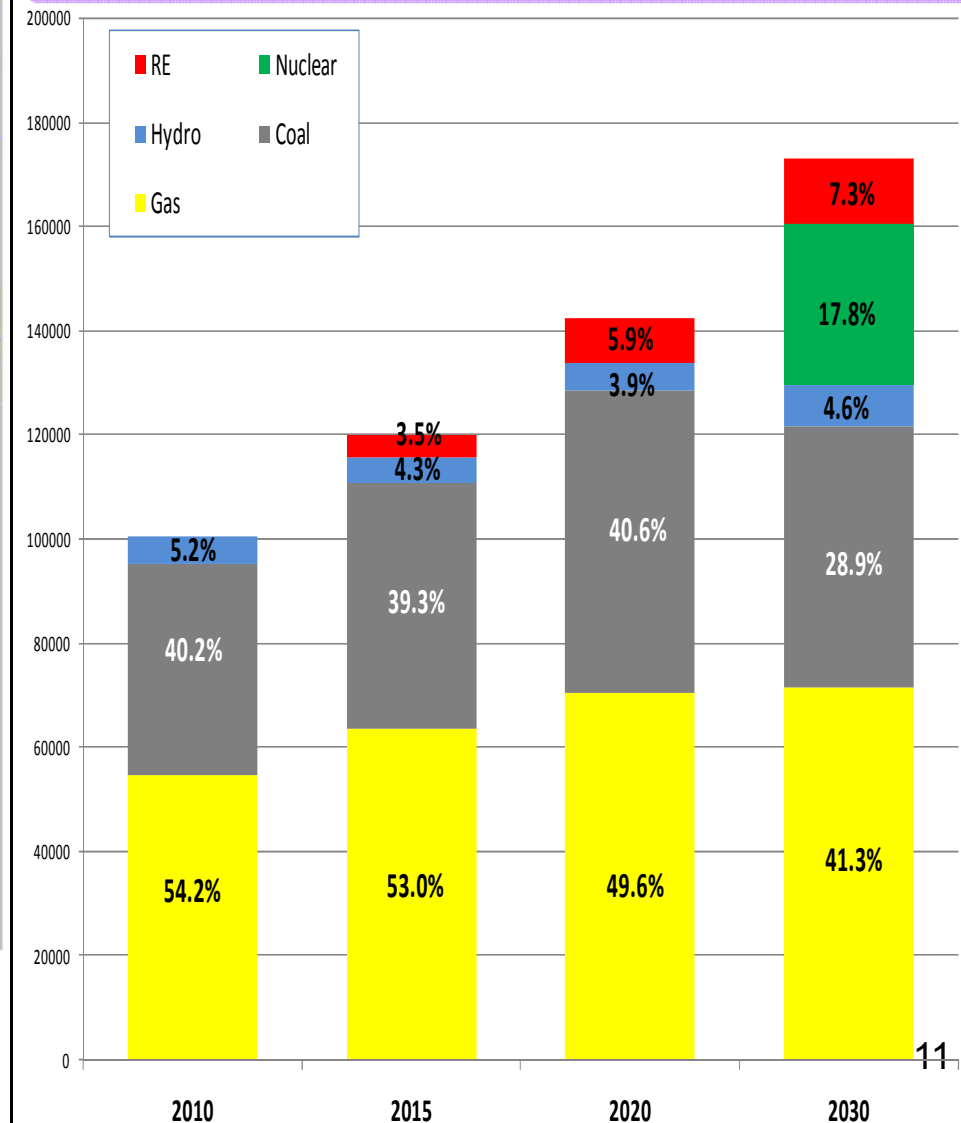
	Peninsular Malaysia	Sabah	Sarawak
<b>Installed Capacity (MW)</b>	<b>21,873</b>	<b>1,167</b>	<b>1,343</b>
<b>Peak Demand (MW)</b>	<b>15,072</b>	<b>773</b>	<b>1,067</b>
<b>Consumption (GWh) 2009</b>	<b>83,411</b>	<b>3,855</b>	<b>4,540</b>



# Snapshot of Malaysia's Electricity Profile



## Projected Fuel Mix for Pen. Malaysia



## Outline

- ① Introduction : Key Data of Malaysia
- ② Energy Policies
- ③ Electricity Sector in Malaysia
- ④ Challenges in Meeting Future Energy Demand
- ⑤ Moving Forward: Fuel Management
- ⑥ Subject Interest
- ⑦ Conclusion

## Challenges

Price Volatility

Depleting Resources

Optimizing Resources

Subsidies

Industry Structure

Realized regional cooperation

## Outline

- 1 Introduction : Key Data of Malaysia
- 2 Energy Policies
- 3 Electricity Sector in Malaysia
- 4 Challenges in Meeting Future Energy Demand
- 5 Moving Forward: Fuel Management
- 6 Subject Interest
- 7 Conclusion

## Moving Forward

### Gas

- Prioritise the indigenous gas sources for local consumption

### Coal

- Secured long term contract with supplier
- Multiple coal supplier countries

### Hydro

- Developed feasible and viable hydro projects
- Replace heavy dependent gas fired plant esp. as peaking plant

### Renewable Energy

- Introduction of Feed-in Tariff by 3<sup>rd</sup> Quarter 2011

### Energy Efficiency

- Developing a master plan for the whole nation

## Regional Cooperation

### To Realize ASEAN Power Grid (APG)

- Establish Electricity Open Market among ASEAN countries for resource optimization

### To Realize Trans-ASEAN Gas Pipeline (TAGP)

- Gas exports among ASEAN countries

### Close cooperation among APEC members

- Biofuels
- Regional Energy Market Study



## Outline

- 1 Introduction : Key Data of Malaysia
- 2 Energy Policies
- 3 Electricity Sector in Malaysia
- 4 Challenges in Meeting Future Energy Demand
- 5 Moving Forward: Fuel Management
- 6 Subject Interest
- 7 Conclusion

## Subject Interest

### Coal Power Plant

- Technology on Plant's Efficiency such as supercritical and ultra super critical
- Better Efficiency helps in mitigating CO<sup>2</sup> emissions and protect environment

### Electricity Market

- Two basic types of market: Vertical (mostly monopoly) and Horizontal (mostly multiple companies)
- Benefit analysis on both type : economic scale vs. competitive

### Nuclear Power

- Awareness and acceptance
- Malaysia is still studying nuclear power as an option

### Smart Grid

- Implementation, cost etc.
- Malaysia have some pilot projects on smart grid

## Outline

- 1 Introduction : Key Data of Malaysia
- 2 Energy Policies
- 3 Electricity Sector in Malaysia
- 4 Challenges in Meeting Future Energy Demand
- 5 Moving Forward: Fuel Management
- 6 Subject Interest
- 7 Conclusion

## Conclusion

- 1 Malaysia's effort on fuel diversification started from 1980s. However, fuel diversification is a dynamic process
- 2 Diversification of fuel mix is important to enhance energy security
- 3 Volatility of energy prices and meeting future demand are two major challenges that every country are facing



**THANK YOU**