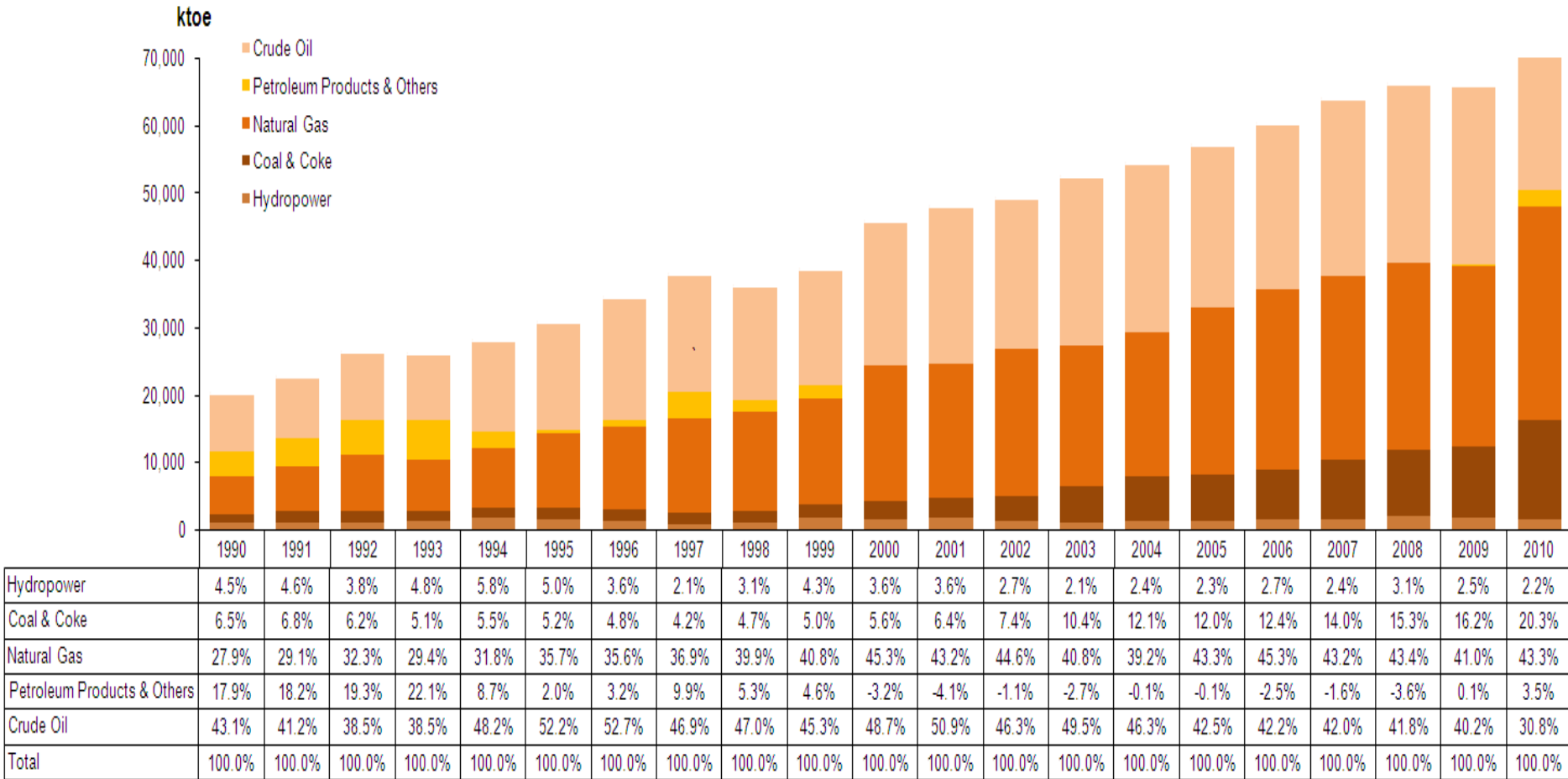


# CURRENT ENERGY SITUATION IN MALAYSIA

Datuk Ir. Ahmad Fauzi Hasan  
Chief Executive Officer  
Energy Commission of Malaysia

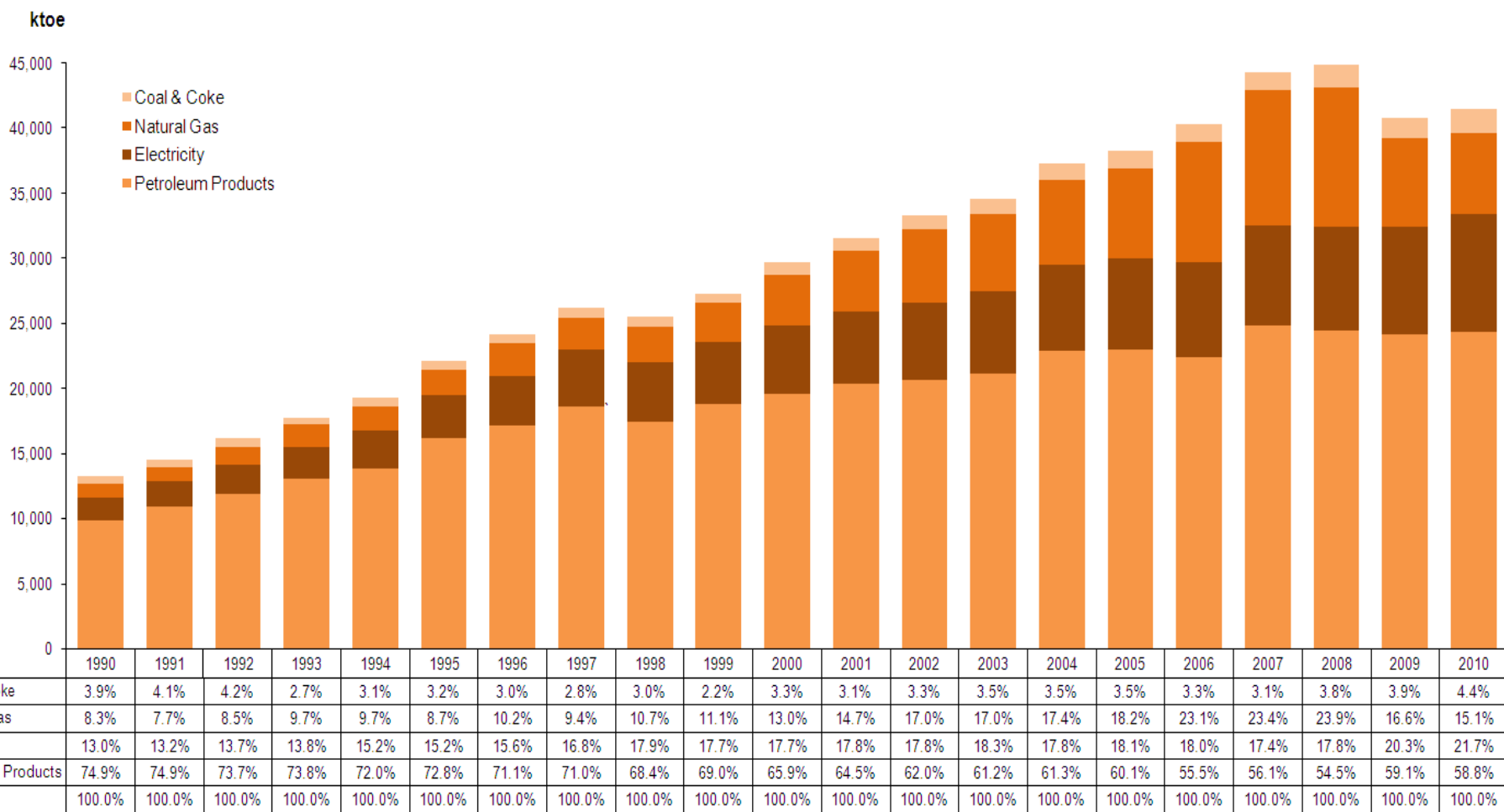
28 February 2012

# Commercial Energy Supply



Source: Final Draft - National Energy Balance 2010

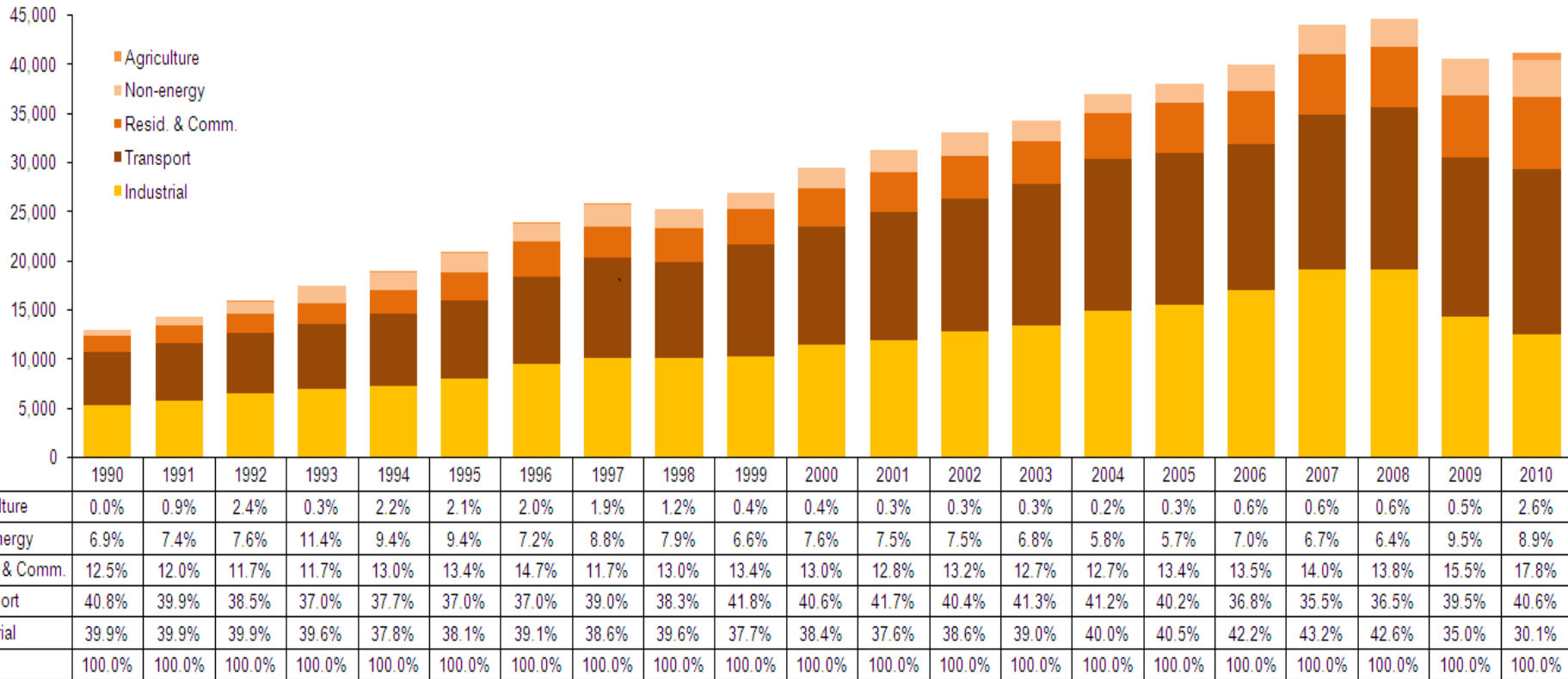
# Final Use of Commercial Energy by Type of Fuels



Source: Final Draft - National Energy Balance 2010

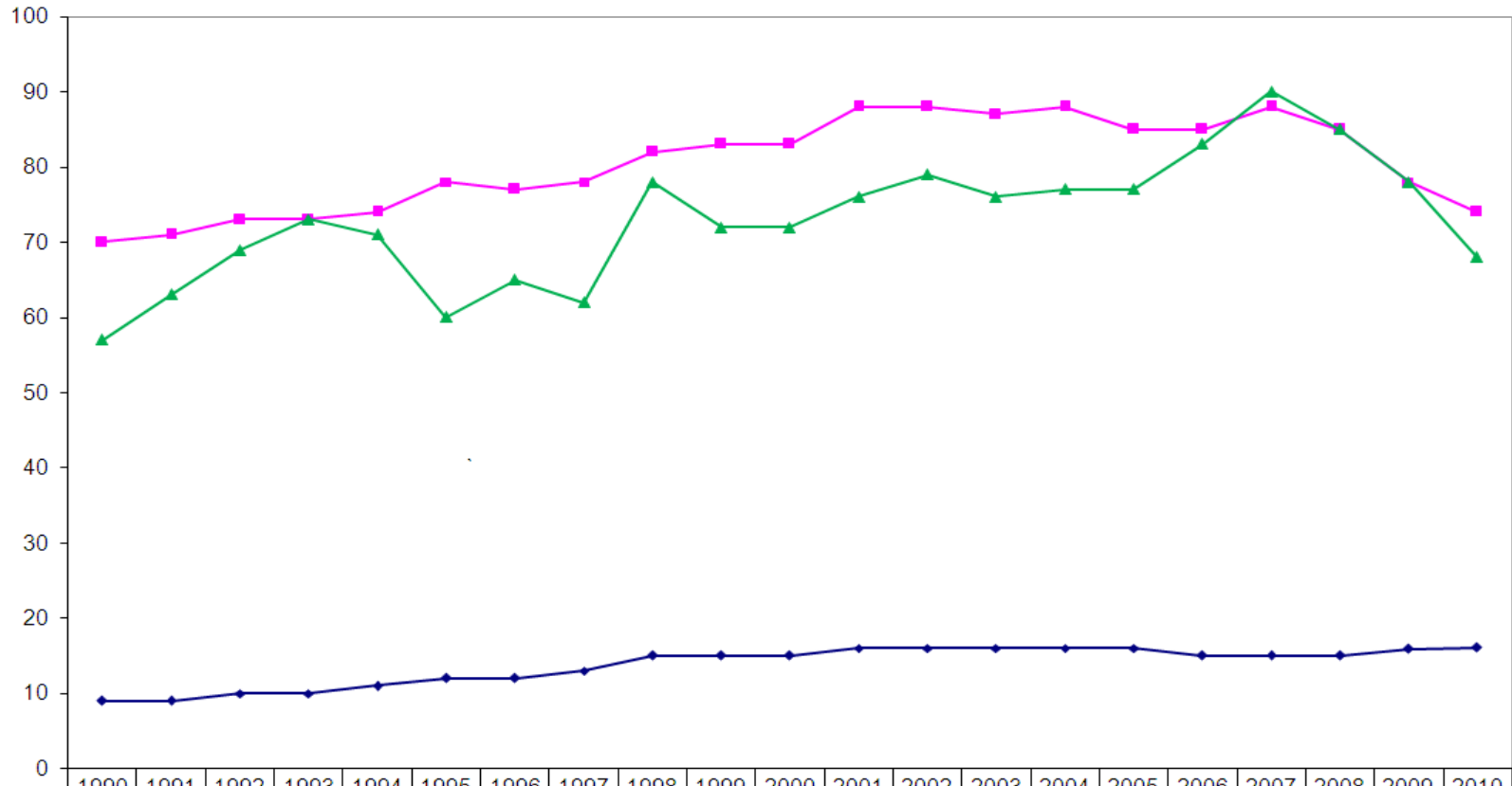
# Final Energy Use by Sectors

ktoe



# Final Energy Intensity

toe/RM million (at 2000 Prices)



Notes: Intensity=Quantity of energy required per unit output or activity

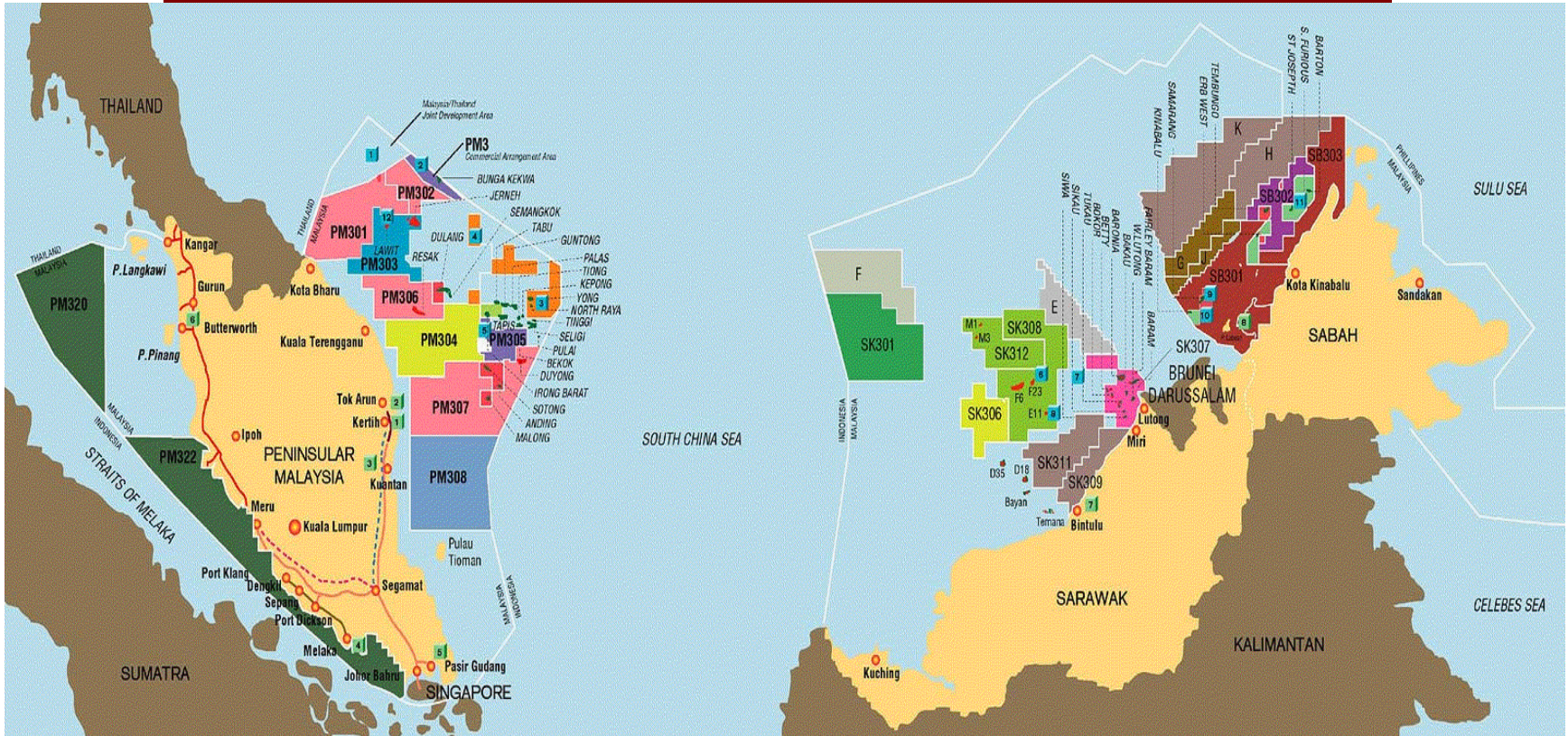
\*Final Energy Demand/GDP at 2000 prices

\*\*Industrial Energy Demand/Industrial GDP at 2000 prices

\*\*\*Electricity Demand (toe)/GDP at 2000 prices



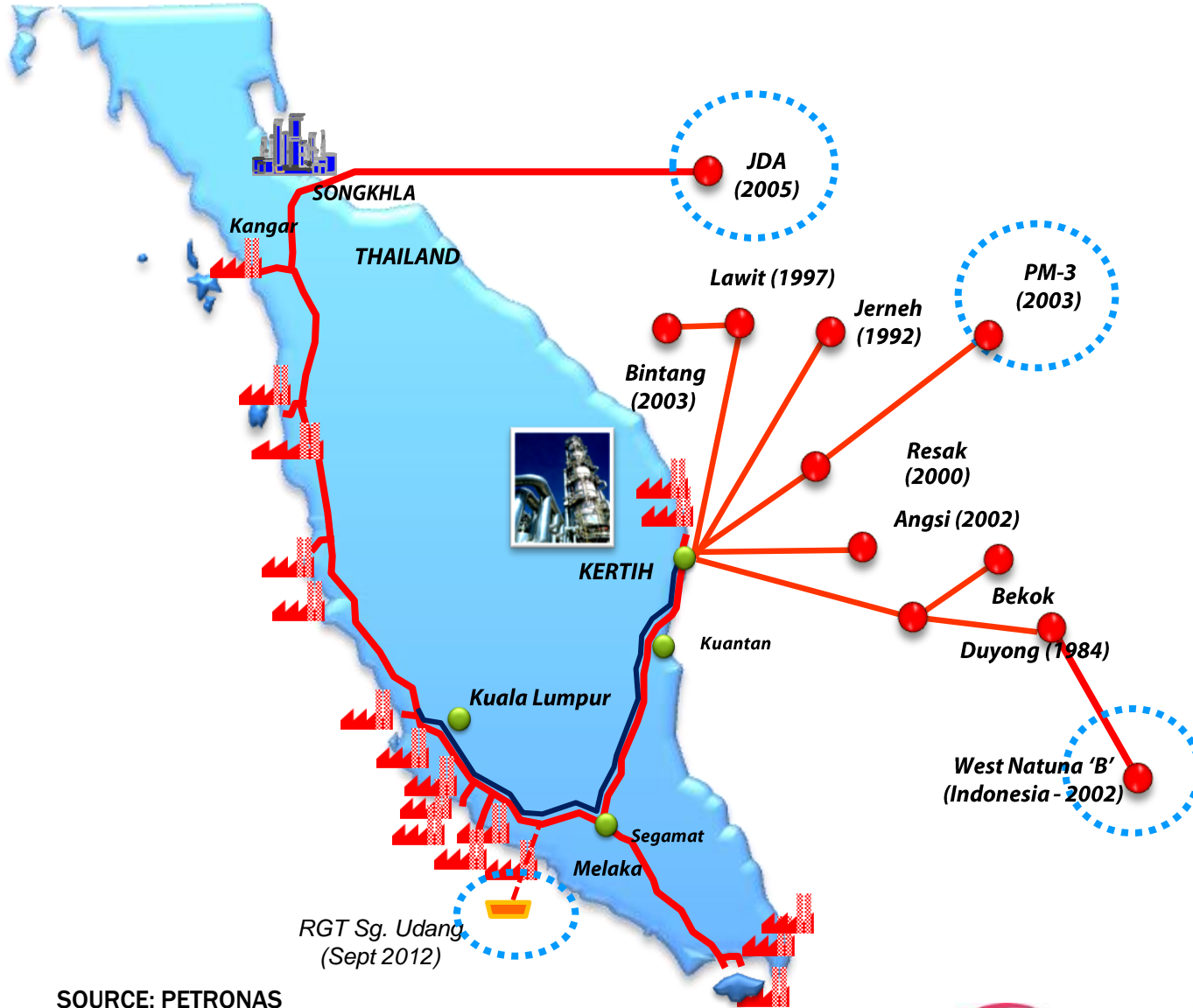
# Malaysia's Oil And Gas Resources



**CRUDE OIL : 5.8 billion barrels      NATURAL GAS : 79.18 trillion standard cubic feet**  
**RESERVE LIFE : Oil – 24 years, Gas – 36 years**

source: PETRONAS (as of 1st January 2010)

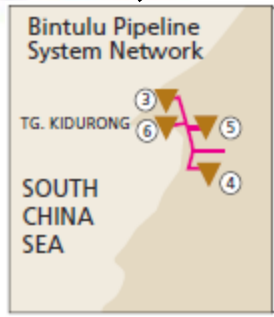
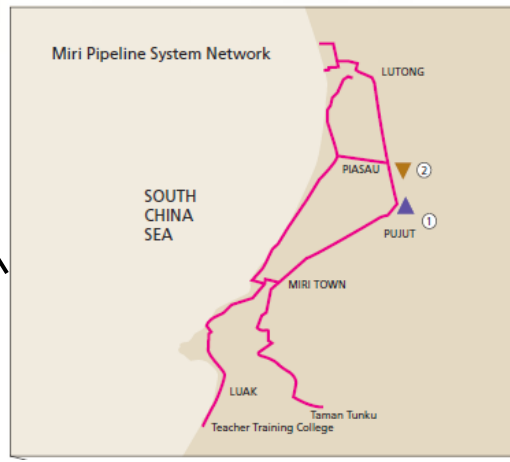
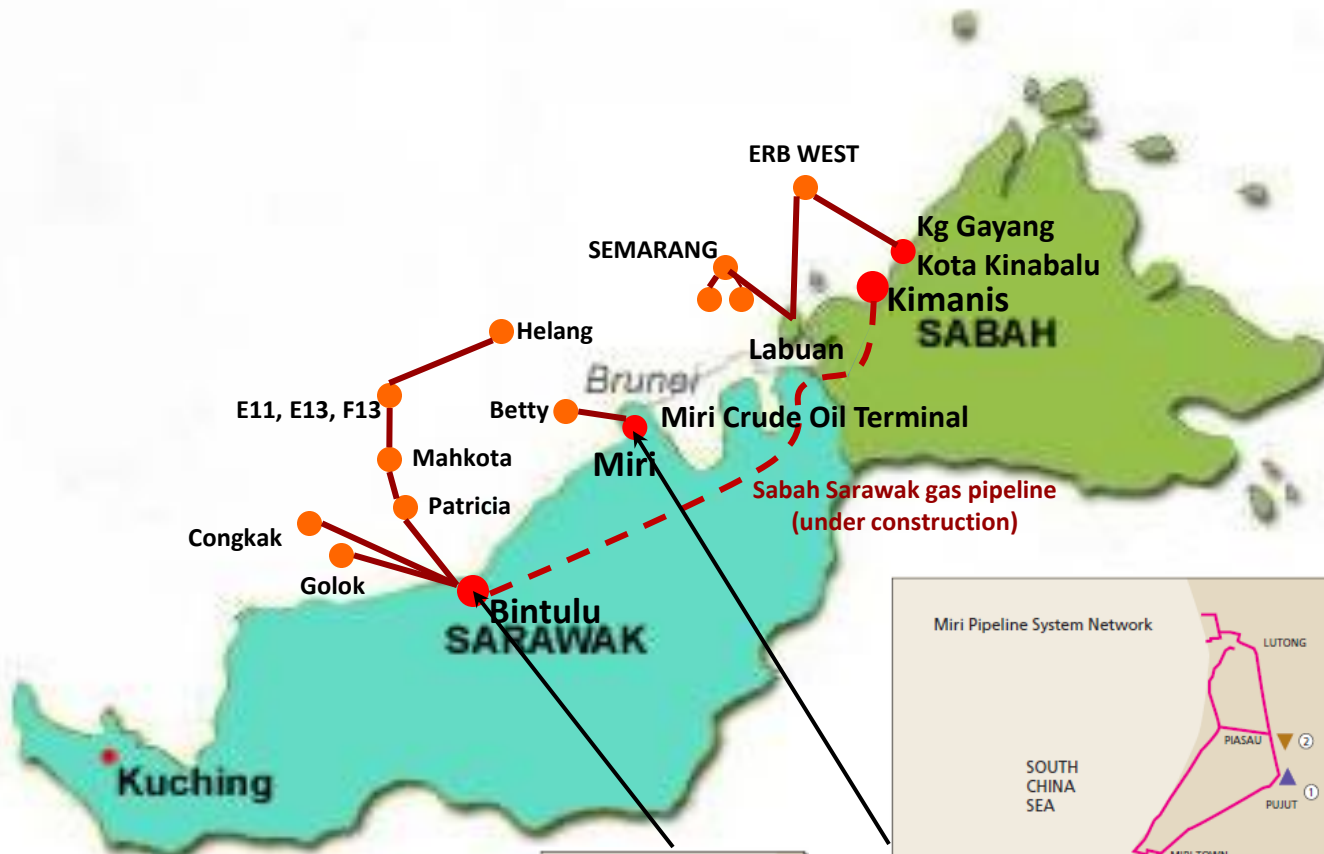
# Gas Supply To The Peninsula



SOURCE: PETRONAS



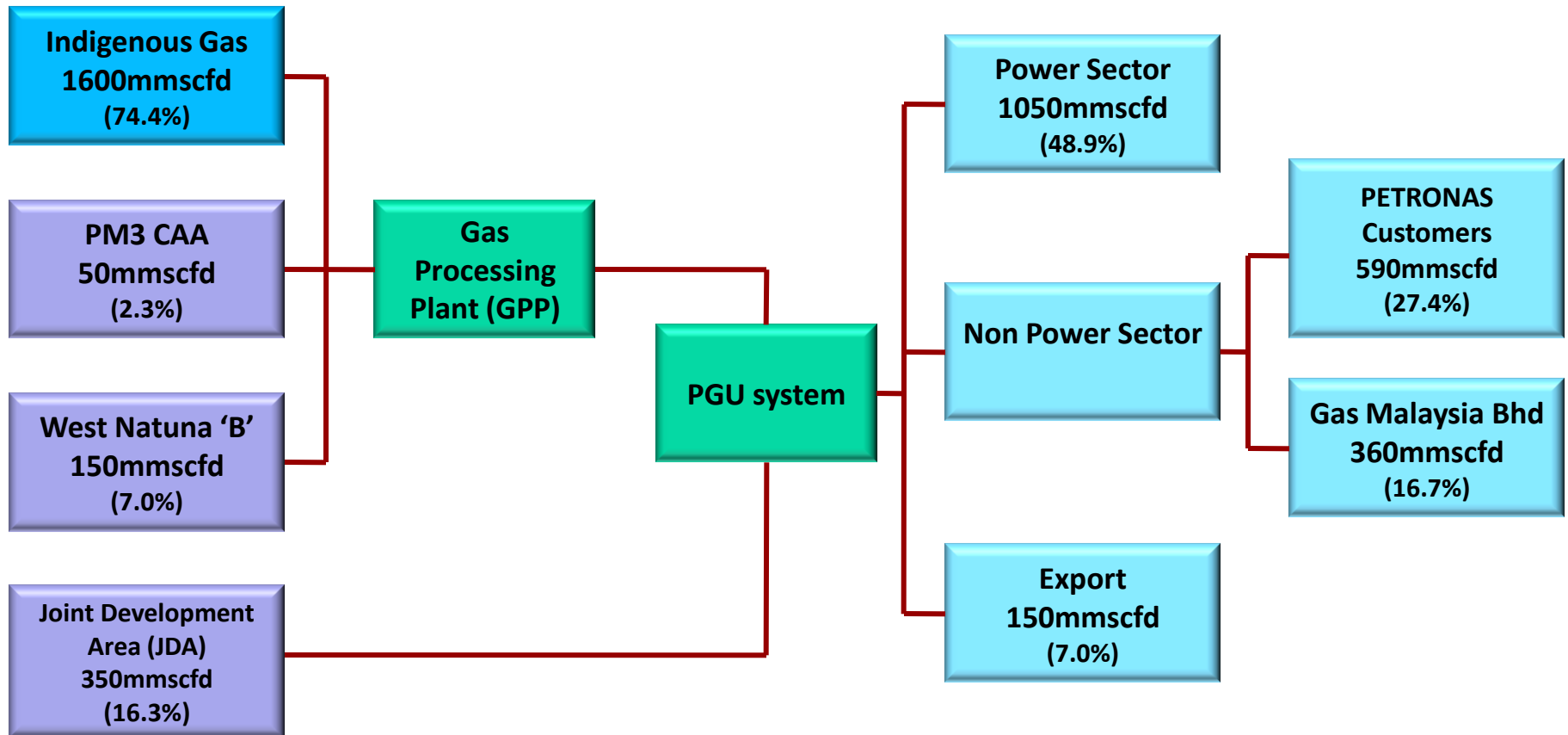
# Gas Supply To Sabah and Sarawak



SOURCE: PGB

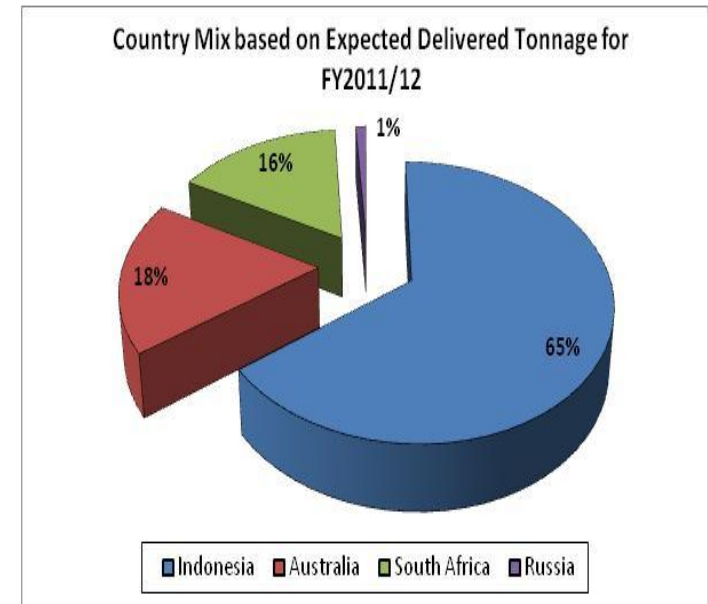


# Peninsular Malaysia Gas Value Chain



## Coal Demand For Power Generation\*

Plant	Capacity (MW)	Commissioning Year	Max. Annual Consumption (Mtpa)
TNB Kapar Ph. 2	600	1988	1.50
TNB Kapar Ph. 3	1000	2001	2.50
TNB Janamanjung	2100	2002/03	6.00
Tg. Bin - IPP	2100	2006/07	5.50
Jimah - IPP	1400	2009	3.50
<b>Total</b>	<b>7200</b>		<b>19.00</b>



**Dependency on coal from Indonesia reduced from 84% in 2008 to 65% in 2011**

\* In Peninsula for 2011

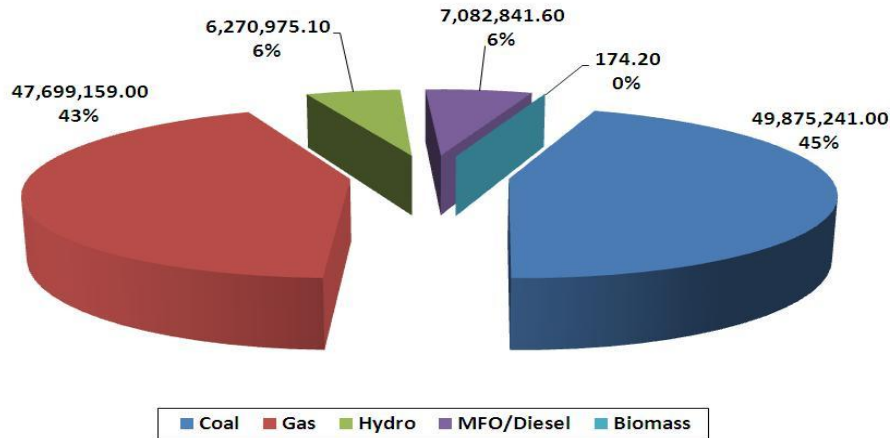
# Malaysia's Major Hydro Resources



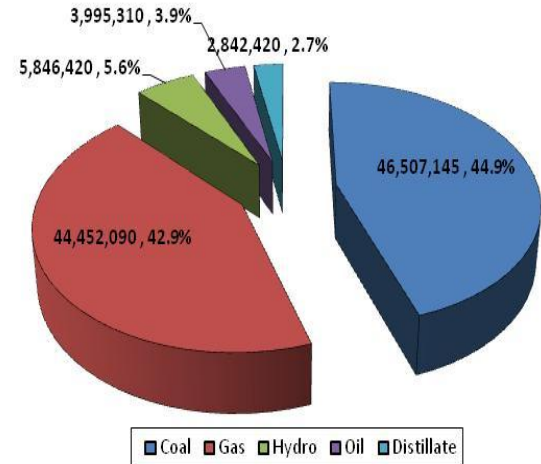
Potential Hydro Capacity Exceeds 20,000 MW

# Electricity Generation Fuel Mix

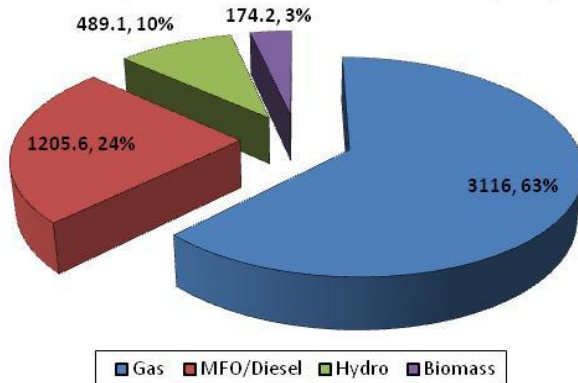
Electricity Generation Mix for Malaysia in 2011 (GWh)



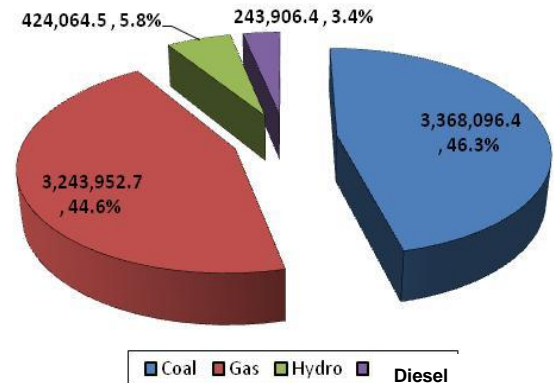
Electricity Generation Mix for Peninsular Malaysia in 2011 (GWh)



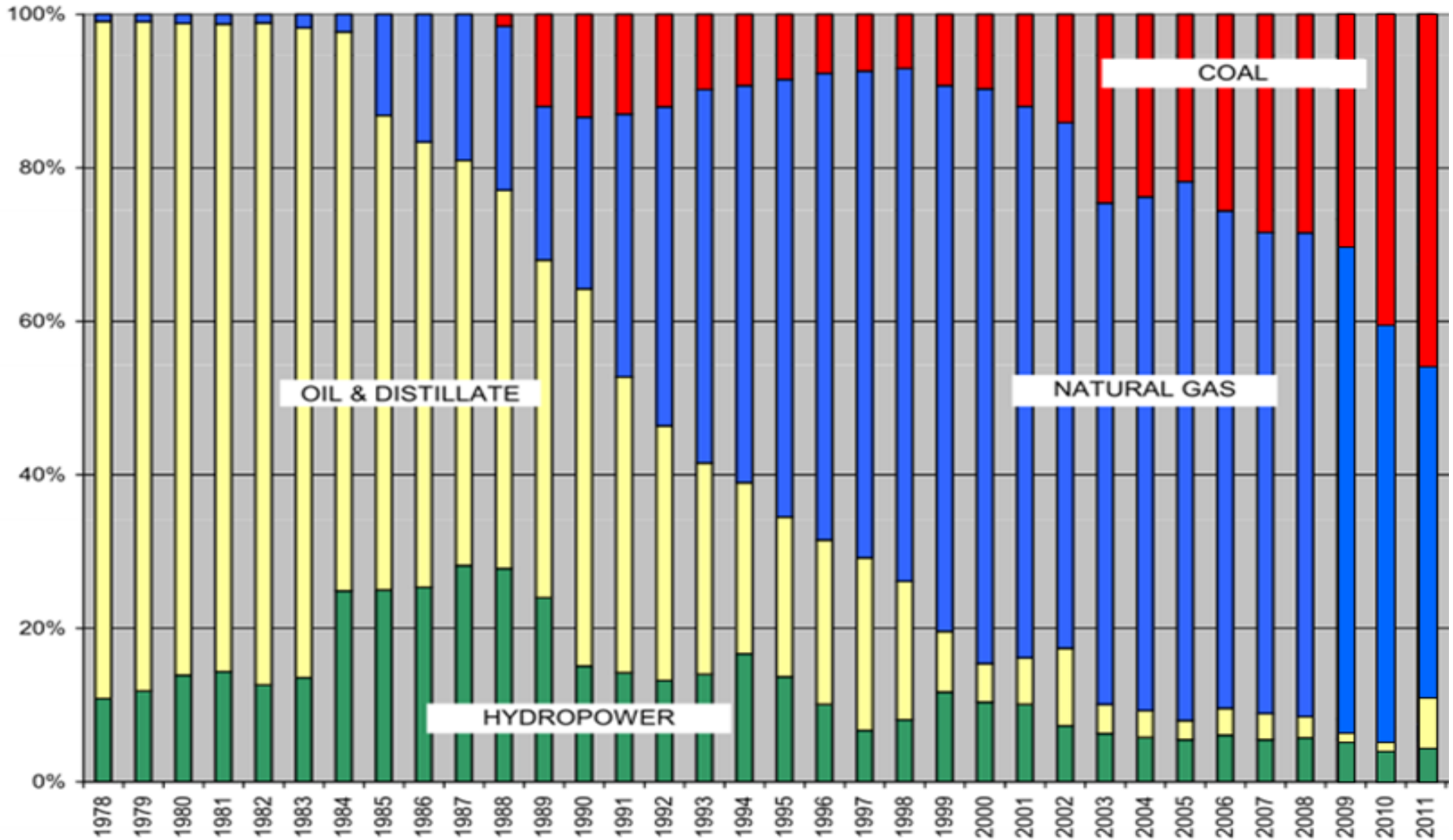
Electricity Generation Mix for Sabah in 2011 (GWh)



Electricity Generation Mix for Sarawak in 2011 (GWh)



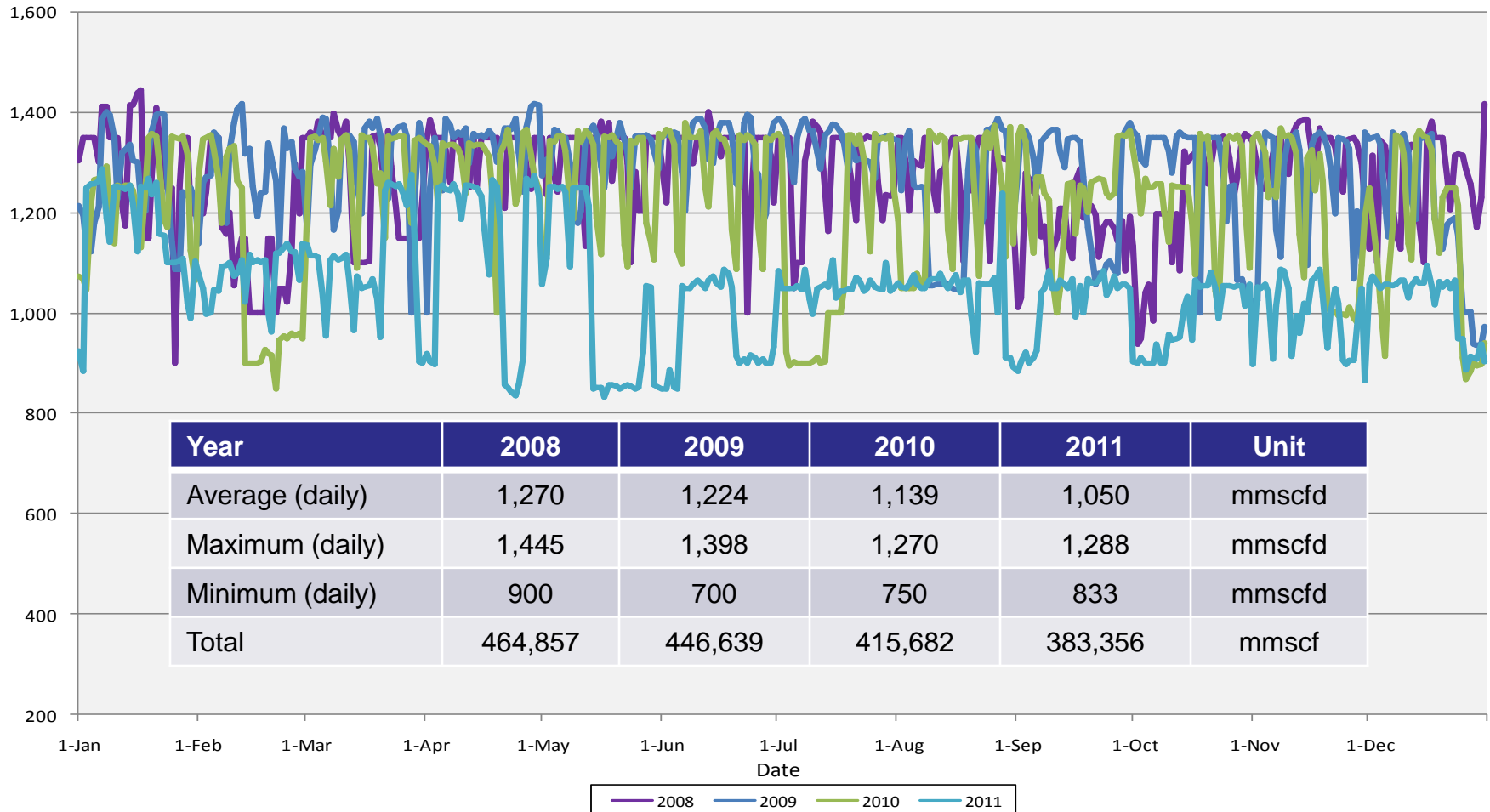
# Electricity Generation Fuel Mix: From Oil To Gas And Coal Dependency





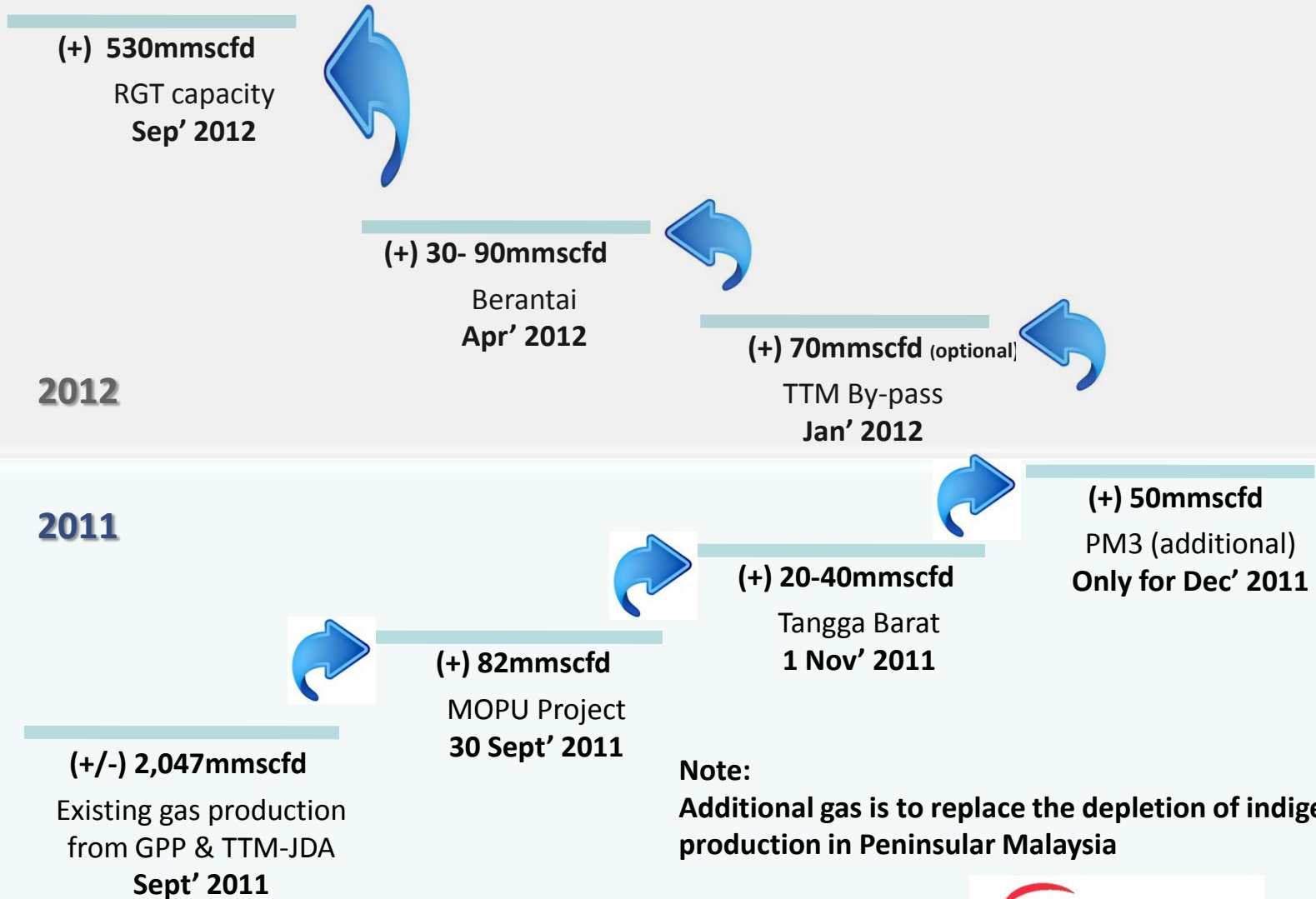
# The Gas Supply Challenge

GAS NOMINATION FOR 2008, 2009, 2010 & 2011



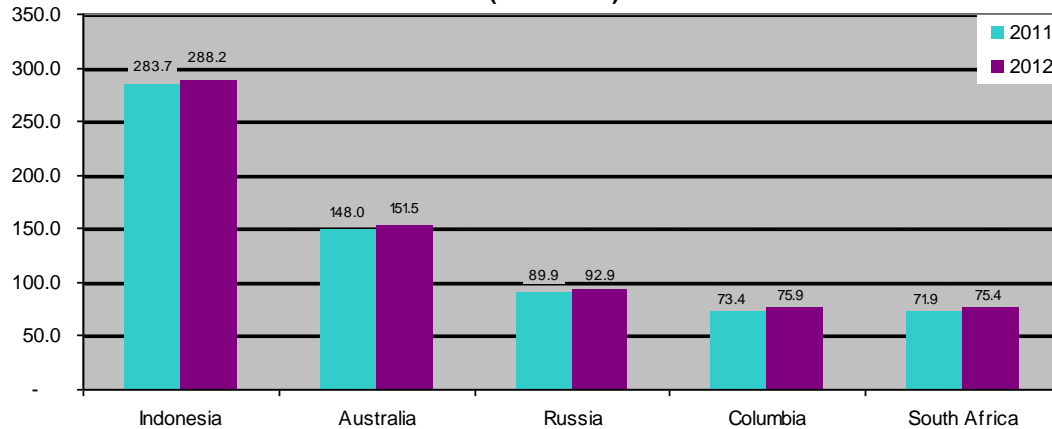
**Gas volume supplied in 2011 decreased by 17.5% compared to 2008 but electricity generation increased by 10.6% from 94,251 GWh to 104,220 GWh.**

# Seeking Additional Gas From Various Sources



# Global Coal Supply Challenges

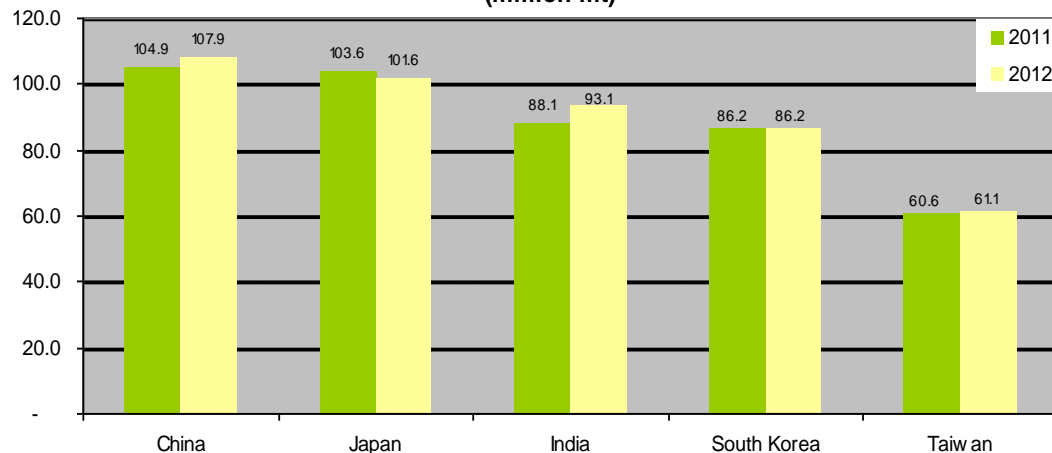
**Top 5 Thermal Coal Suppliers**  
(million mt)



Major issues affecting supply:

- weather inclement
- poor rail developments
- port congestions

**Top 5 Pacific Thermal Coal Buyers**  
(million mt)



- China has overtaken Japan as the largest importer of coal, however, their demand is seasonal and very dependent on domestic developments.
- Indian demand also sees significant growth over the years.

# Renewable Energy (RE) Challenges

## RE Potential

Mini-hydro : 490 MW

Biomass : 1,340 MW

Biogas : 410 MW

Municipal solid waste : 360 MW

Solar : Unlimited

Wind : Limited wind speed

## Very Limited Progress In RE Generation

Category	Mini-hydro	Biomass & biogas	Solar PV	Wind	Total
Grid-connected (MW)	23.8	32	1	-	56.7
Off-grid (MW)	-	447	6.1	0.2	453.3
<b>Total</b>	<b>23.8</b>	<b>479</b>	<b>7.1</b>	<b>0.2</b>	<b>510.0</b>

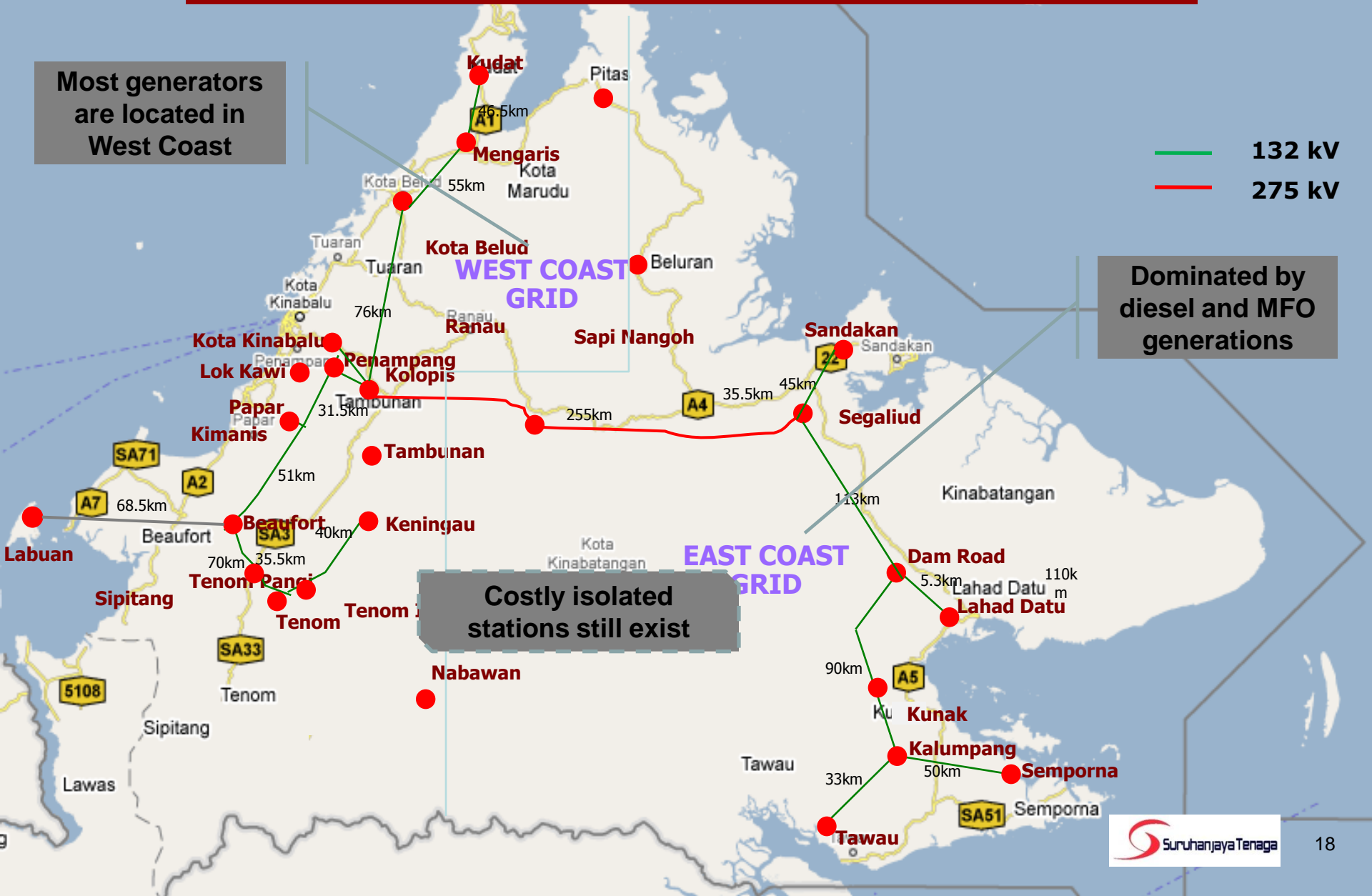
# The Sabah Electricity Supply Challenge

Most generators are located in West Coast

Dominated by diesel and MFO generations

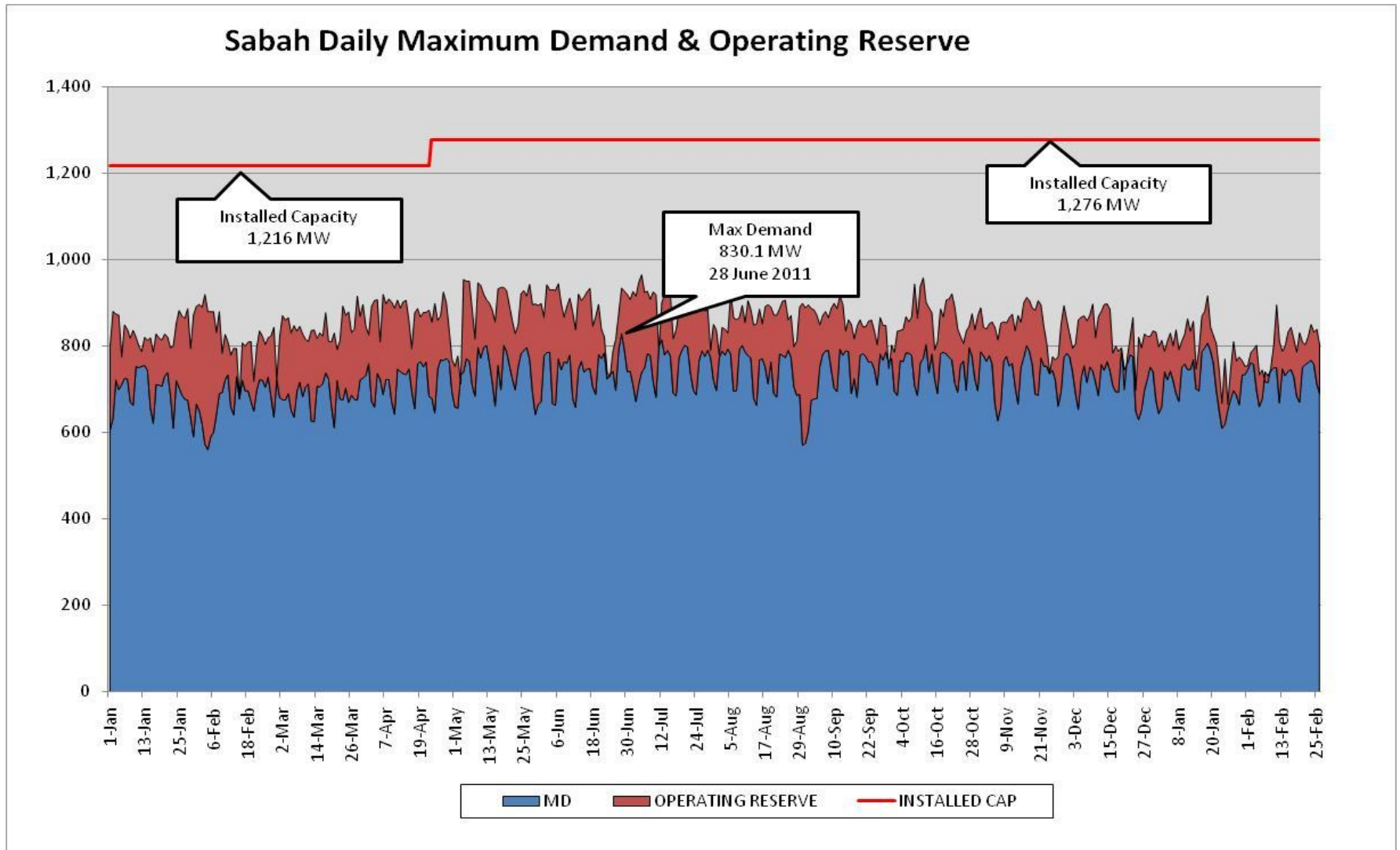
Costly isolated stations still exist

132 kV  
275 kV

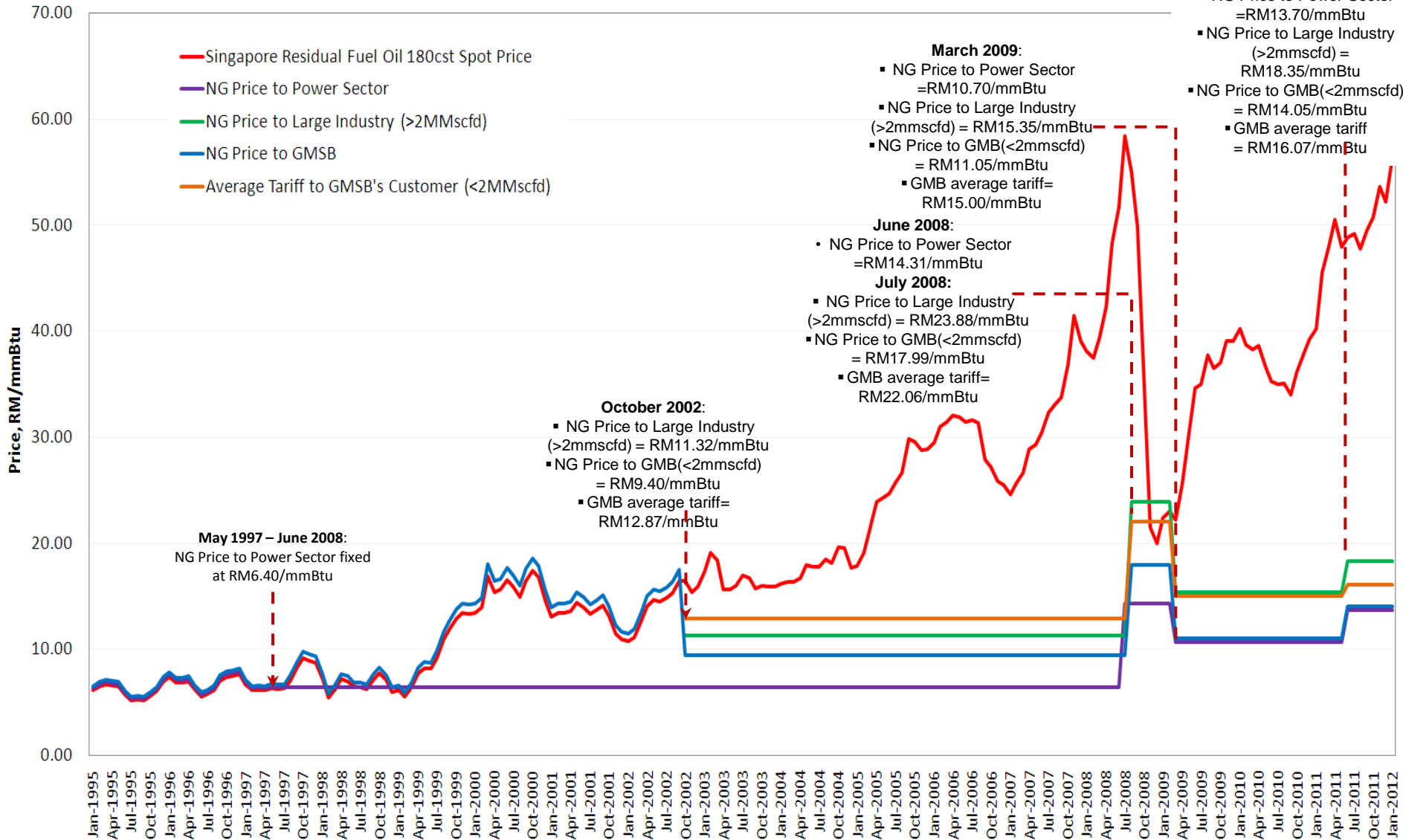




# Sabah's Tight Operating Reserve Margin

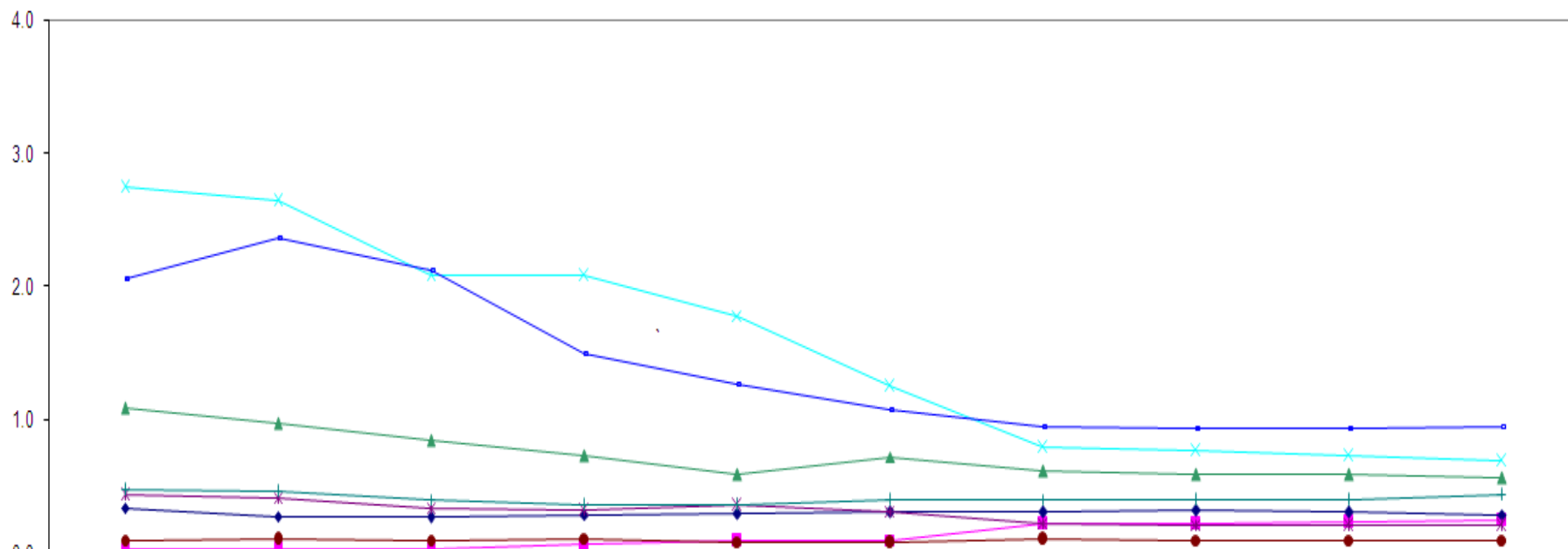


# Peninsula Natural Gas Pricing Issue



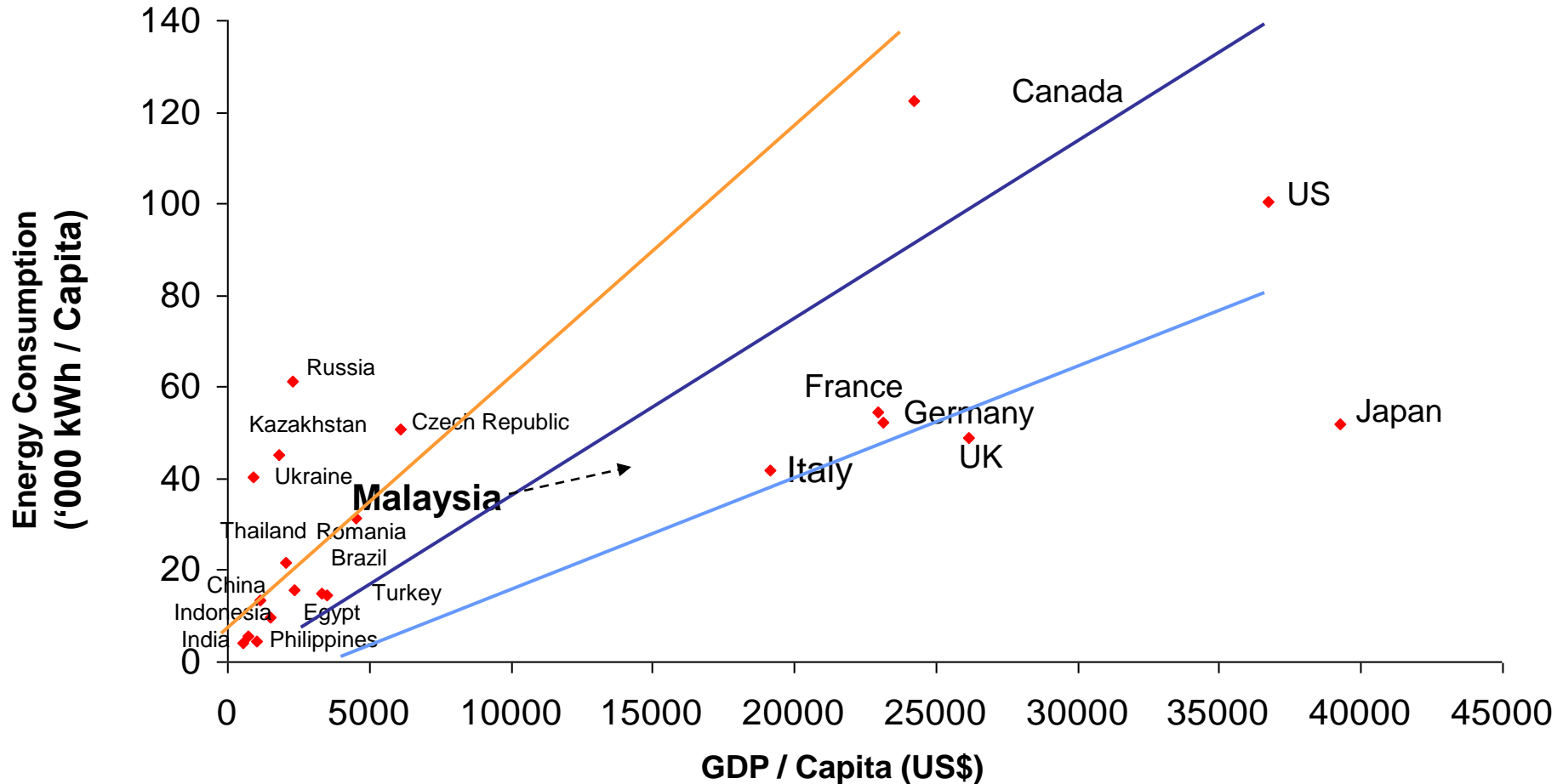
# The Energy Intensity Challenge

Mtoe/billion US\$2000



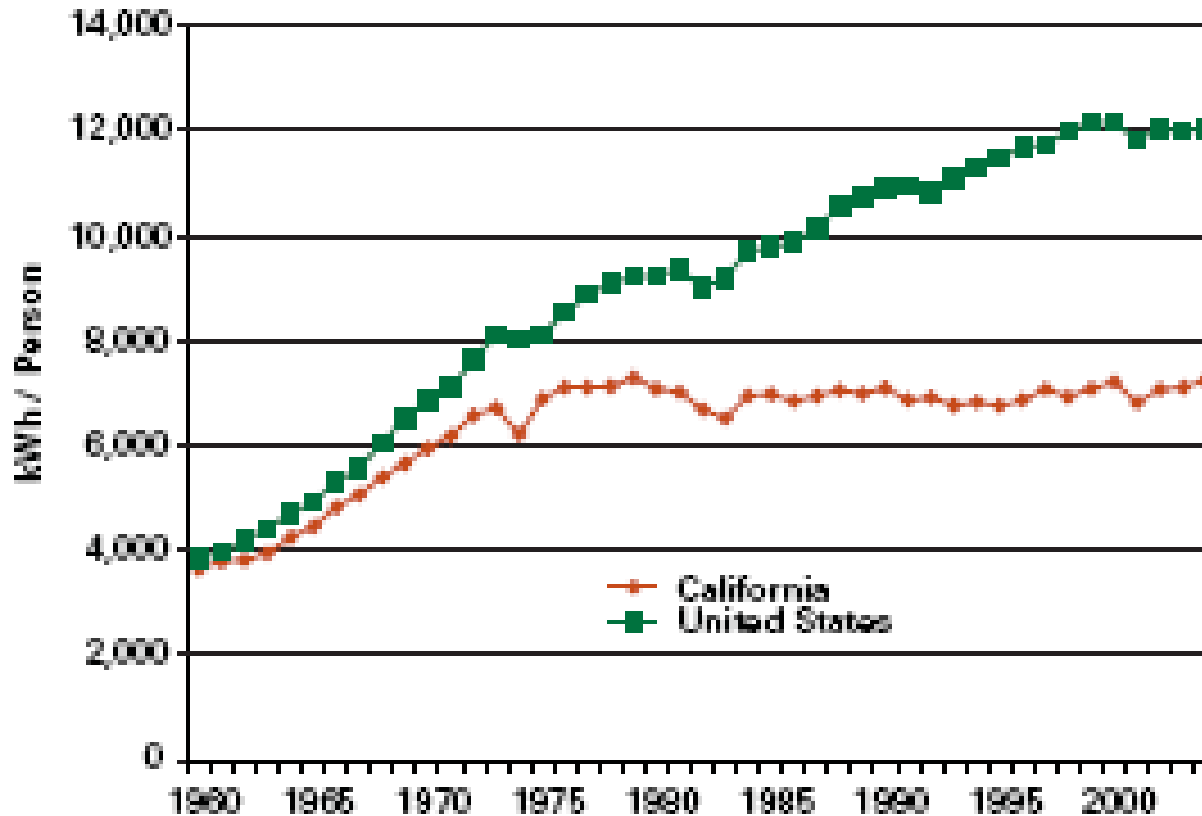
Source: Final Draft - National Energy Balance 2010

# The Sixth Fuel - Enhancing Energy Efficiency



Source: EIA

# Towards Decoupling Energy Demand From Economic Growth



Source: California Energy Commission

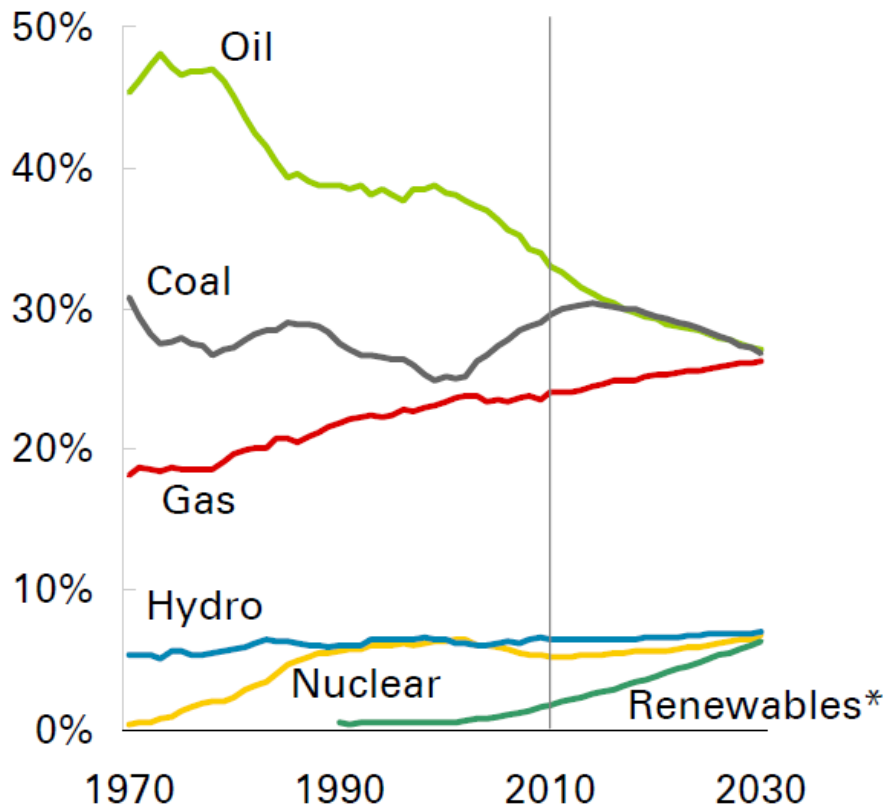


# Ongoing Efforts To Enhance Energy Security

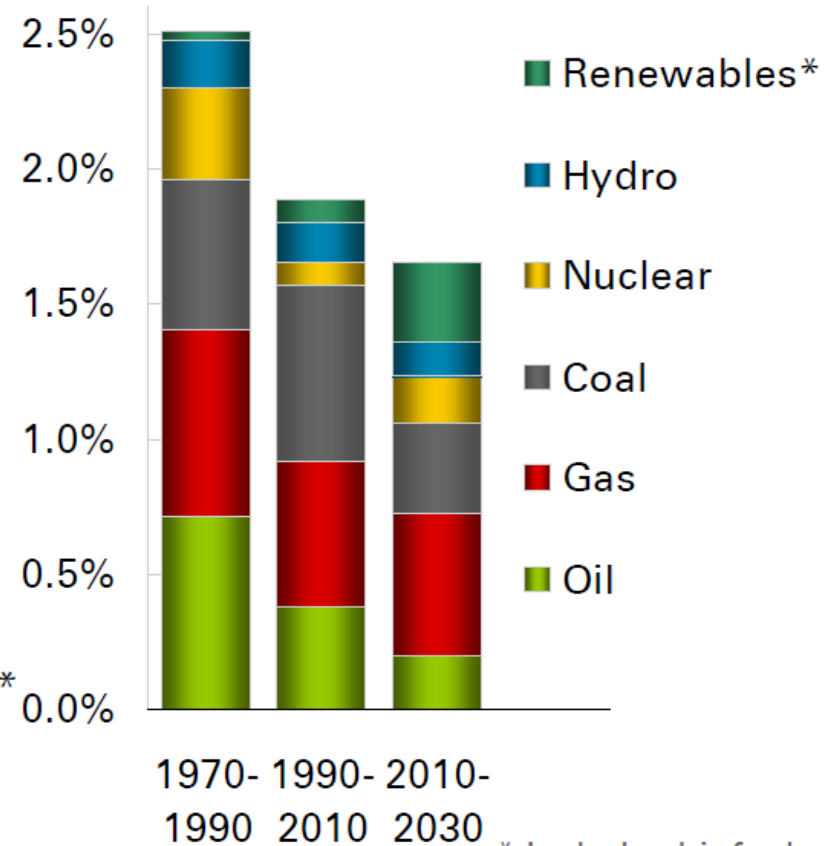
- **Enhancing energy efficiency in the national economy**
- **Promoting renewable energy resources development through enhanced incentives:**
  - **Biomass, biogas, solar, mini-hydro**
- **Diversifying sources of energy supply:**
  - **Intensifying indigenous gas and hydro resources development**
  - **Securing more gas from foreign sources**
  - **Strengthening and expanding supply infrastructures to facilitate regional interconnection**
  - **Exploring and building capacity for the nuclear option**
  - **Seeking a more balanced generation fuel mix**

# Projected World Primary Energy Consumption Until 2030\*

## Shares of world primary energy



## Contributions to growth



\* Includes biofuels

\*BP Energy Outlook 2030

**THANK YOU**