



# Coal Supply and Challenges

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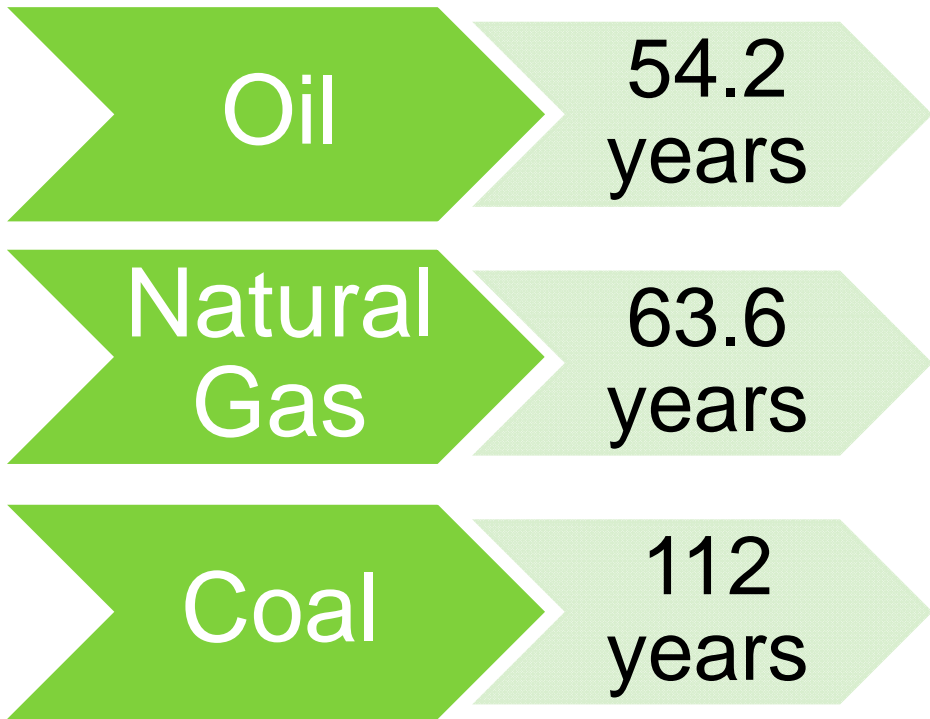
TNB Fuel Services Sdn. Bhd.



# Presentation Outline

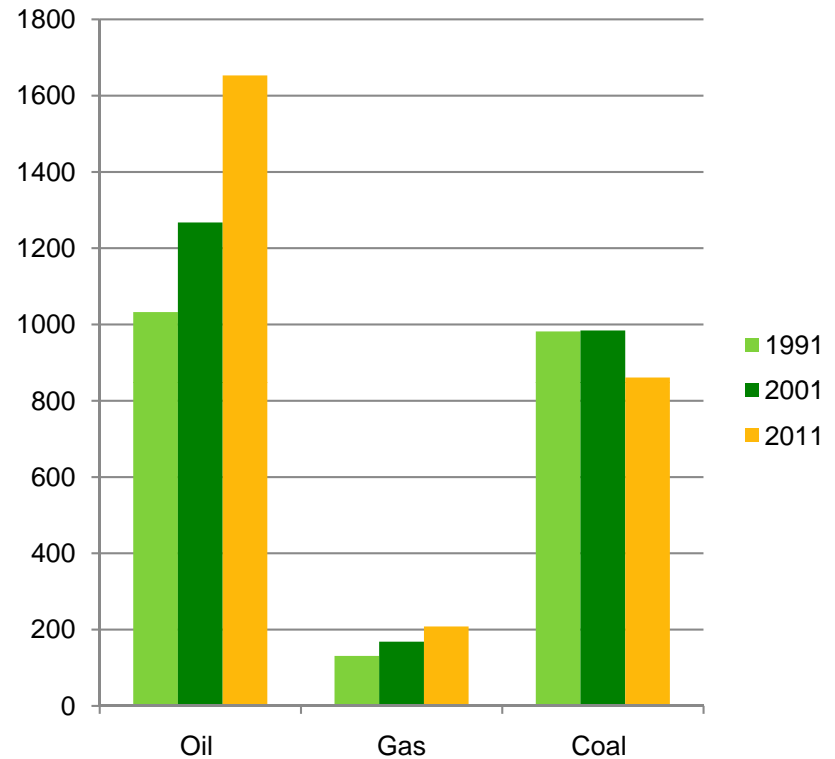
1. Fuel Reserves
2. Seaborne Coal Trade
3. Coal Market
4. Energy Prices
5. Malaysian Energy Mix
6. Issues

# Thermal Coal reserves are abundant compared to Oil and Gas



Represent the years of global production. Reserve as at end-2011

Source: BP Statistical Review of World Energy June 2012



- Coal reserves are being depleted heavily within the past ten years due to its competitiveness in pricing.
- South and Central America oil reserves are the main contributor to the increase of oil reserves by an increment of about 11.9 thousand million barrels.

Source: BP Statistical Review of World Energy June 2012

Unit in the graph is not at a parity level. Please refer below:

Oil : ('000 mil barrels)

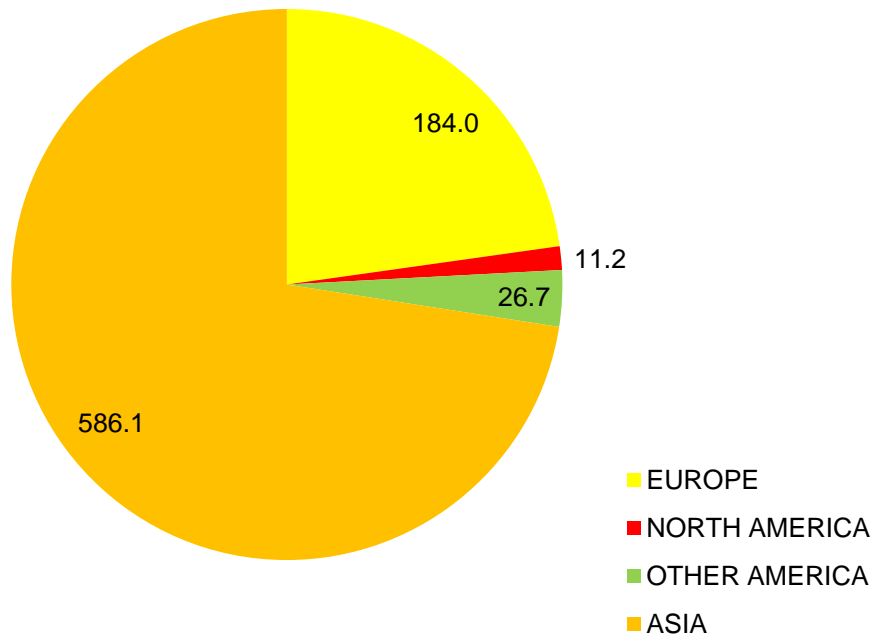
Gas: (trillion cubic metres)

Coal ('000 mil tons)

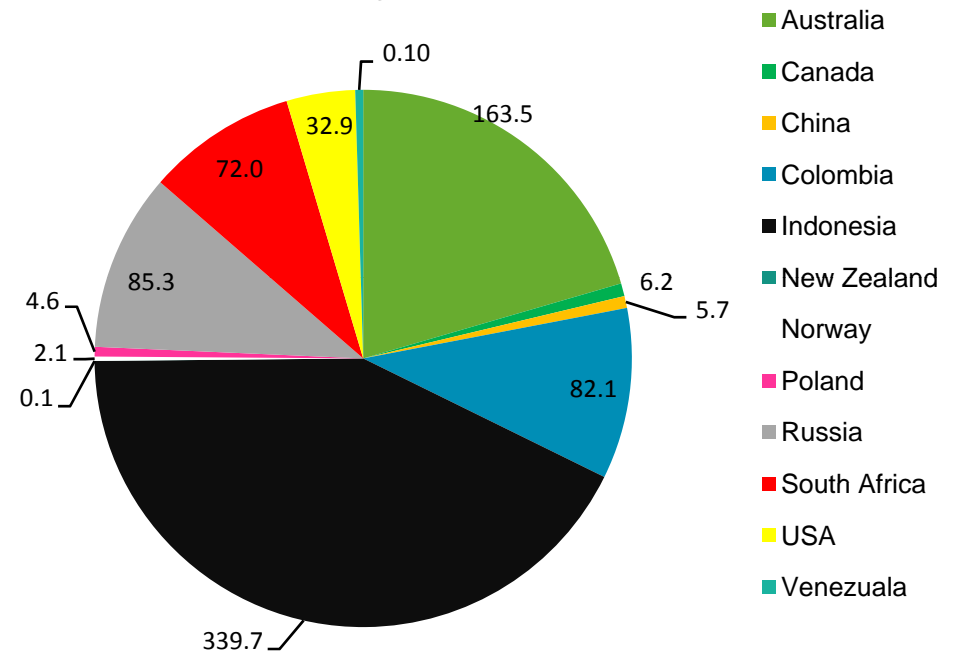
800 mil tons coal are seaborne traded with 70% going to Asia.



**Coal Import Demand 2012**



**Coal Supply 2012**



Asian buyers dominate three quarters of the global coal production. Leading are the North East Asian :

- Japan 120 mil tons
- Korea 100 mil tons
- Taiwan 60 mil tons

Indonesia remains as the largest world coal producer followed by Australia, Russia and South Africa. The weakening freight rates have made US coal competitive into Europe and even Asia.

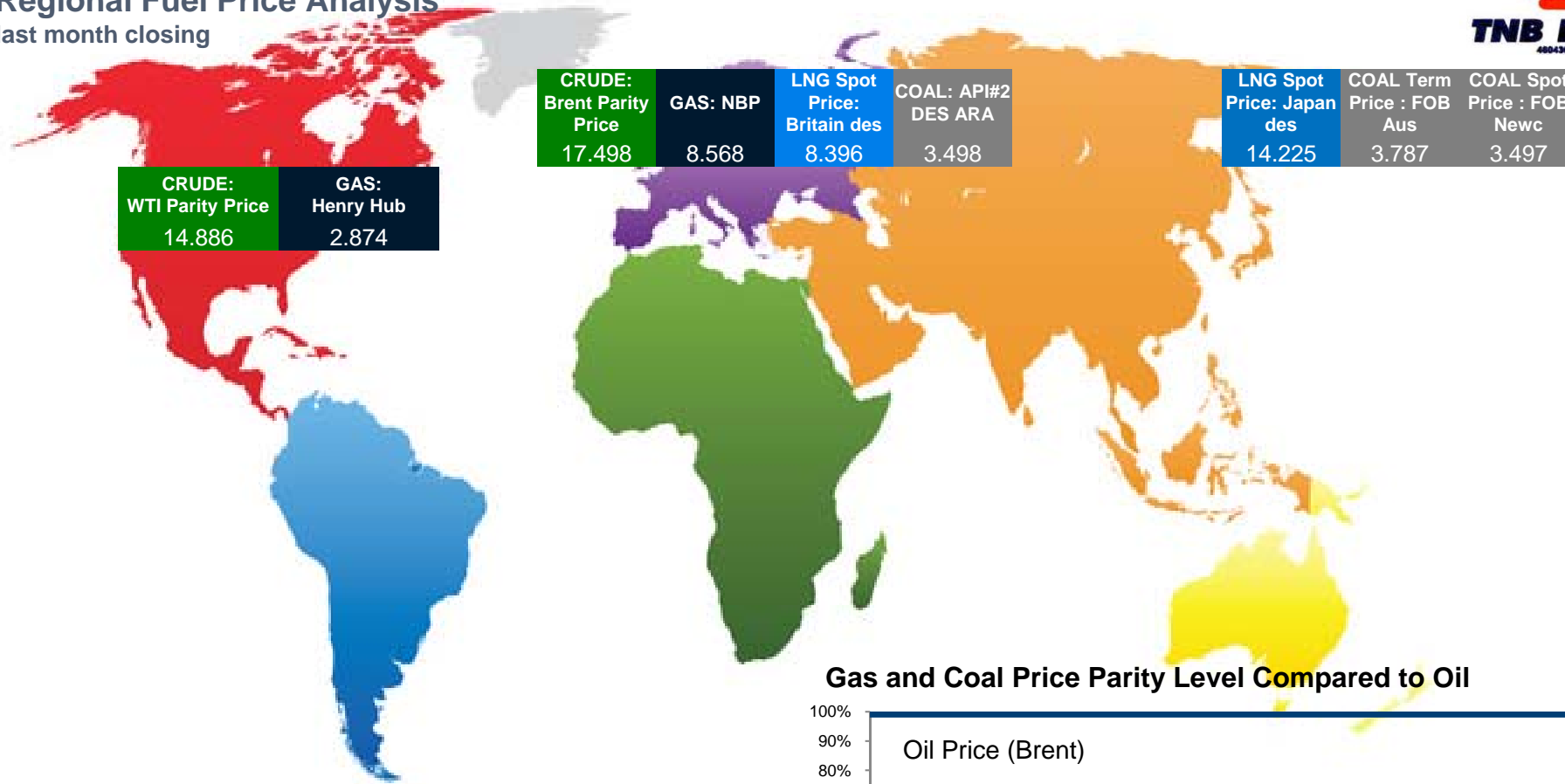
Coal main market i.e. Pacific and Atlantic have merged providing more choices for Buyers.



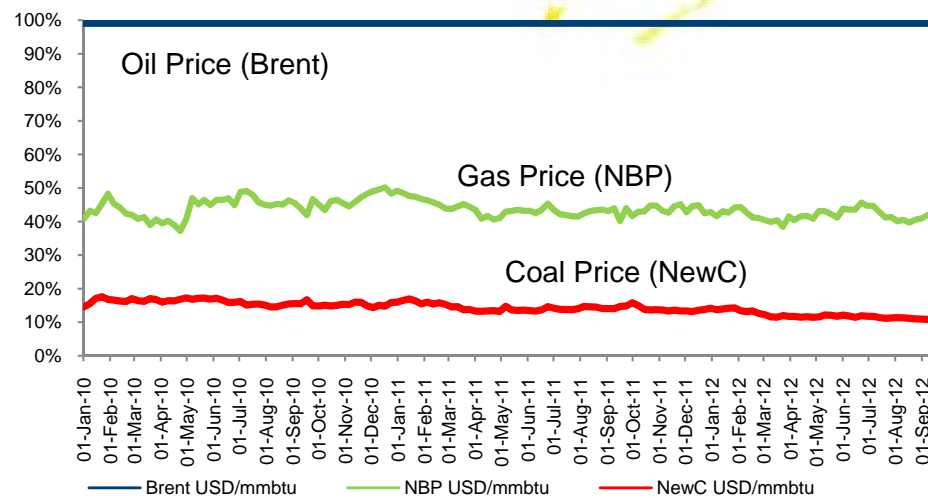
# Coal is indeed a cheaper fuel.

## Regional Fuel Price Analysis

last month closing



Gas and Coal Price Parity Level Compared to Oil



All figure in US\$/mn BTU. Figure for Crude, Gas and LNG are the front month figures by ICIS Heren.

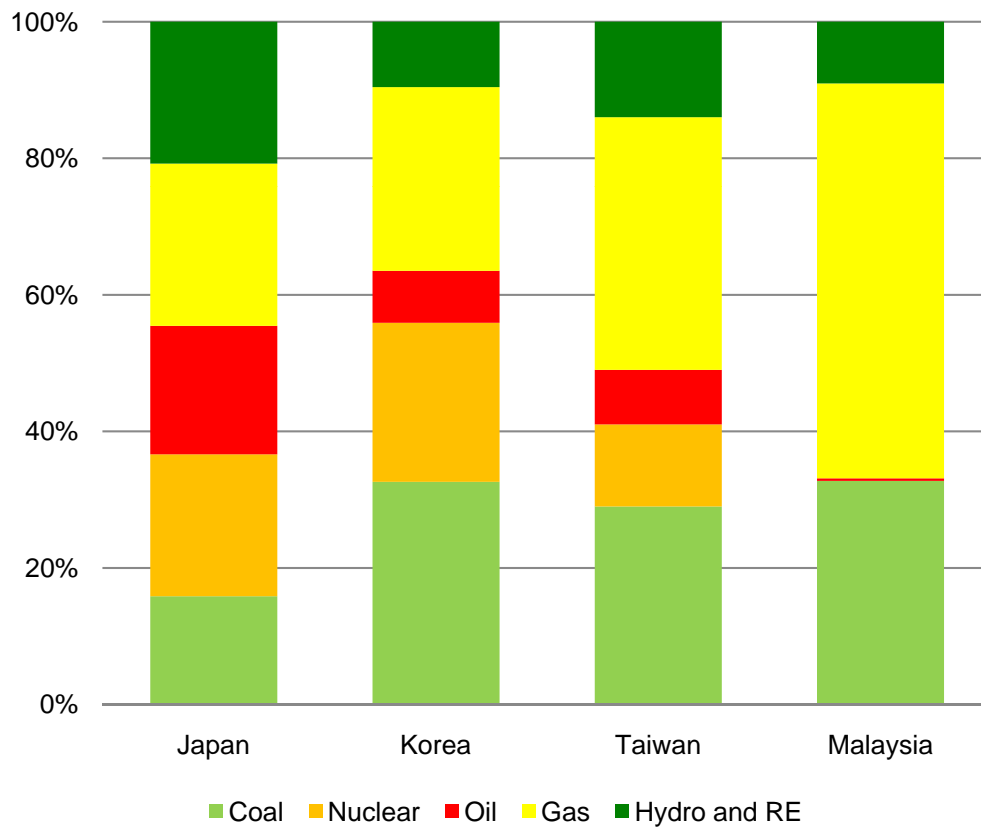
Historical Gas and Oil Prices by Thomson Reuters.

Historical Coal Price by globalCoal

# Malaysia energy mix is heavily dependent on gas and coal.



**2011 Installed Capacity  
- Fuel Mix**

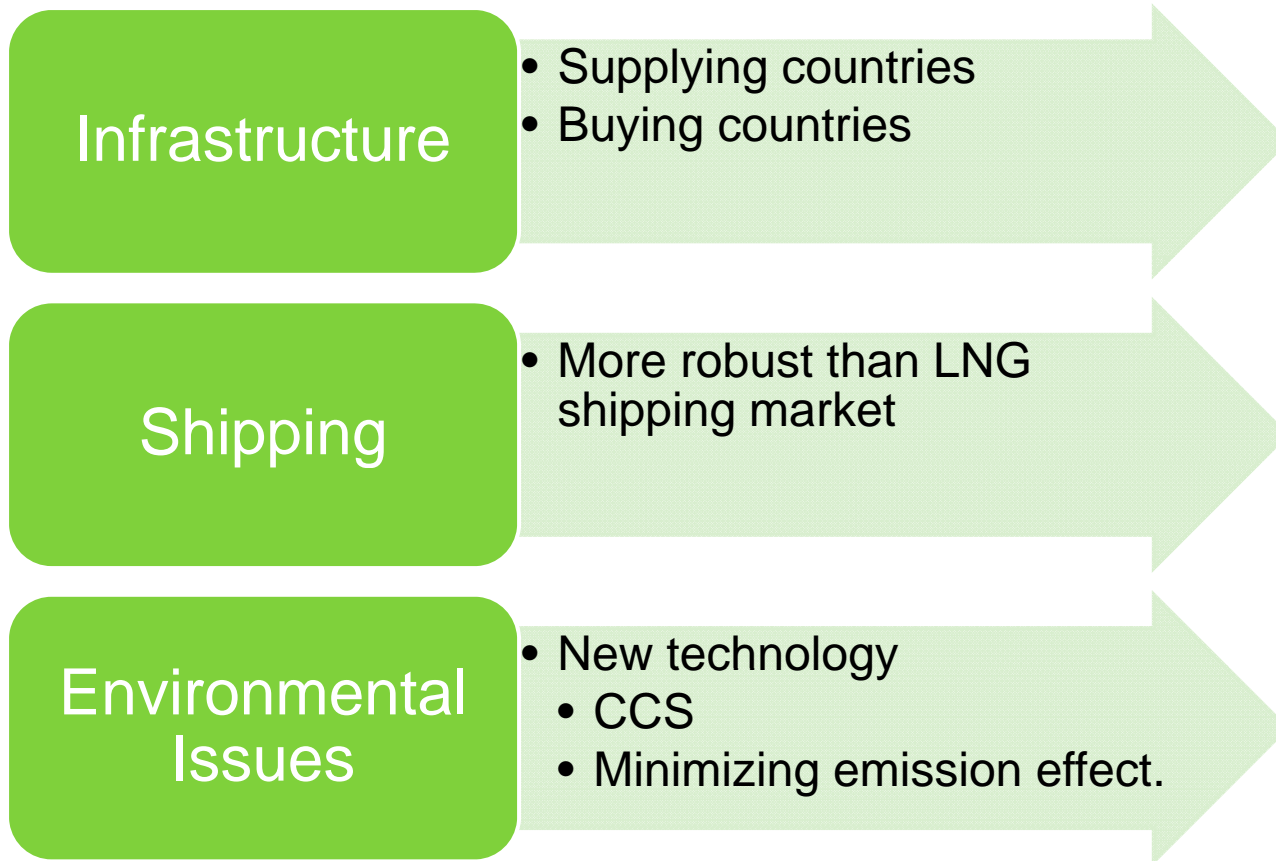


- Japan, Korea and Taiwan are the three leading Asian utilities
  - Very dependent to the global energy market e.g. coal, natural gas and oil.
  - Their generation mix is stable, well balanced and diversified.

## Conclusion:

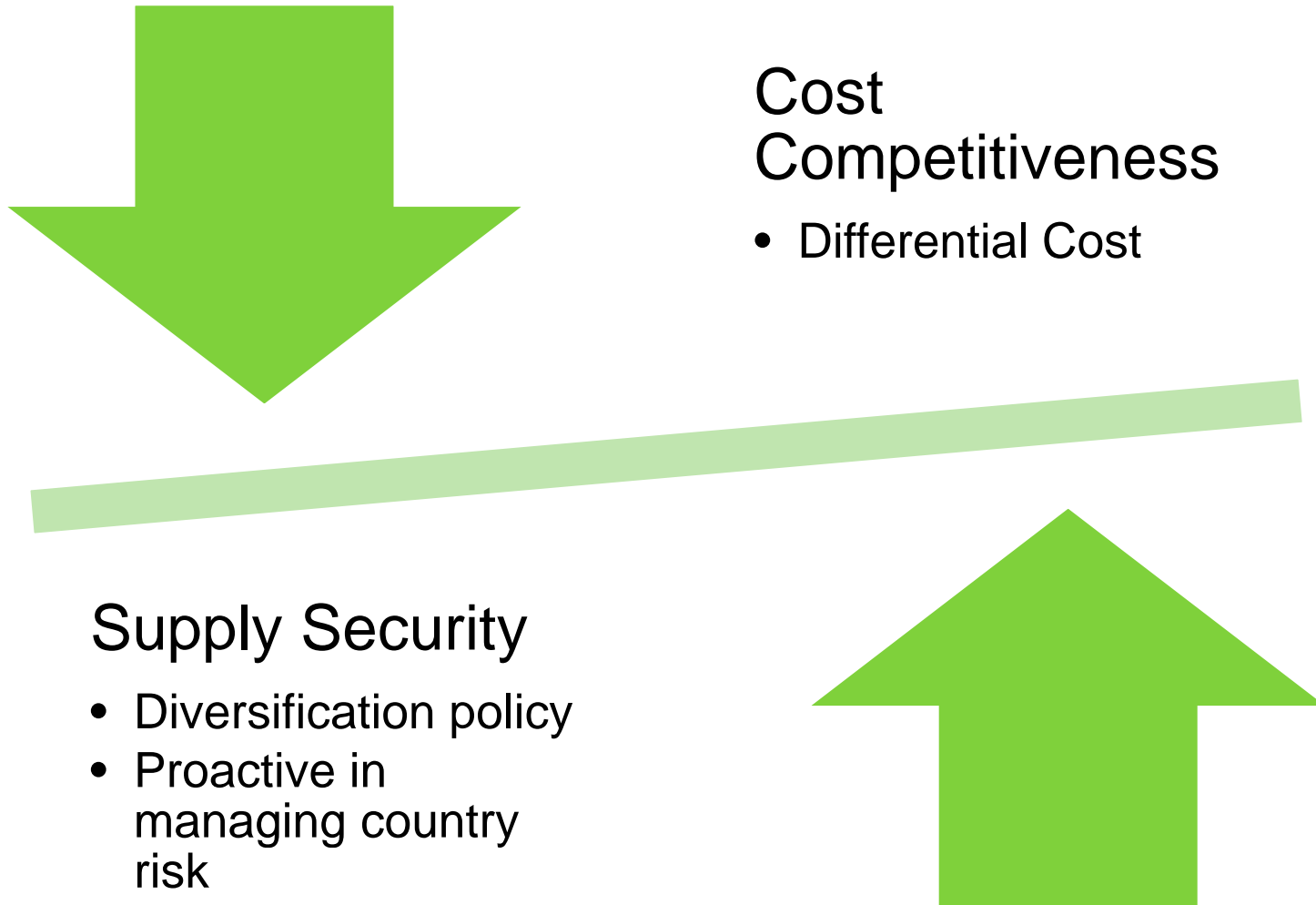
Their energy mix is based on the security and reliability of supply; and the diversification of risks.

Due to its cost competitiveness, coal is an important fuel of Malaysia but the challenges must be well mitigated.





# Coal Procurement Strategy balances the cost competitiveness with security of supply..





Terima Kasih