

# Comparative Energy Framework in Malaysia, Indonesia and Thailand

Wood Mackenzie paper prepared for the 4<sup>th</sup> National Energy Forum

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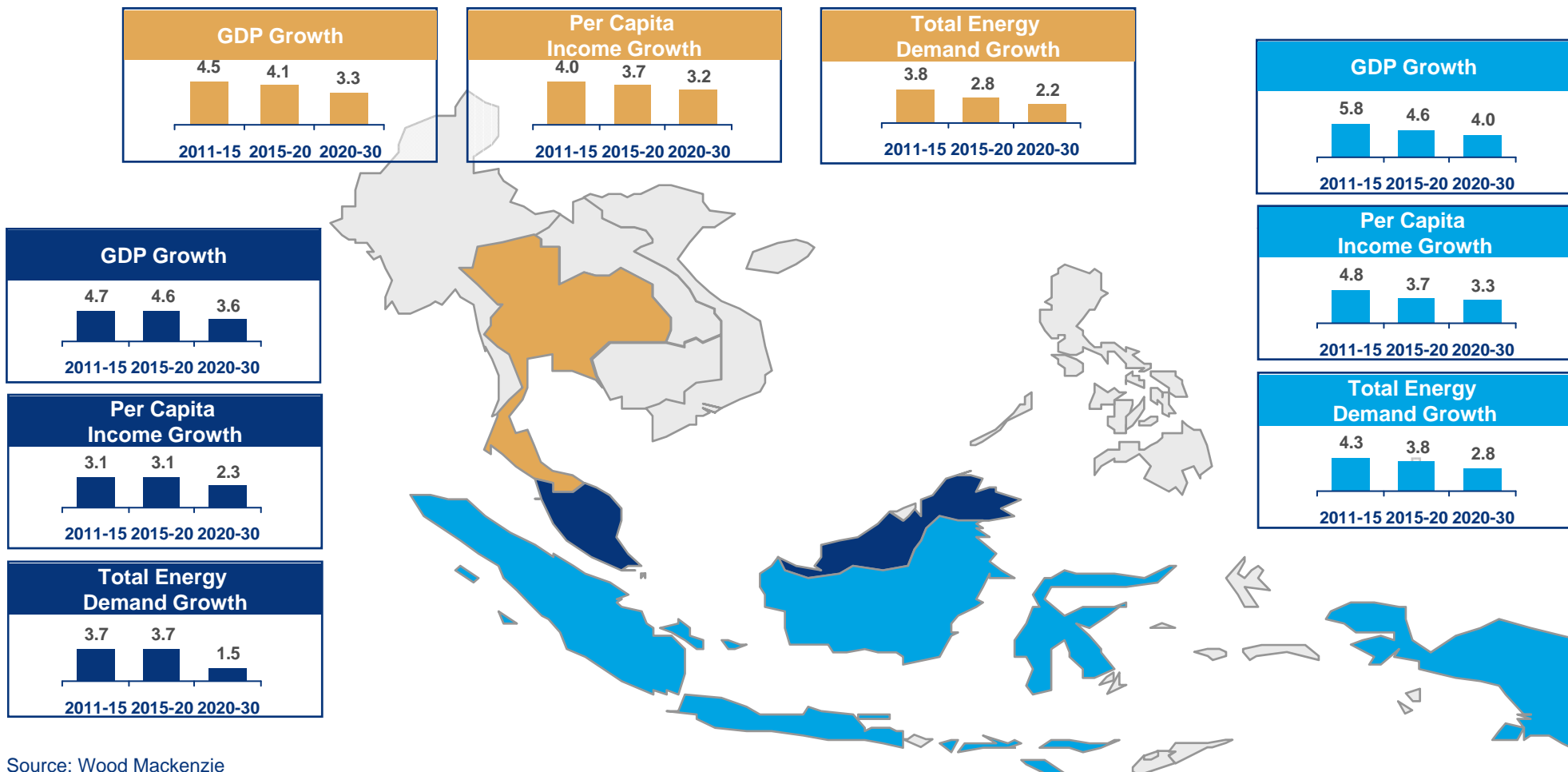


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- September 2012

# Robust economic growth is driving energy demand in Malaysia, Indonesia and Thailand.

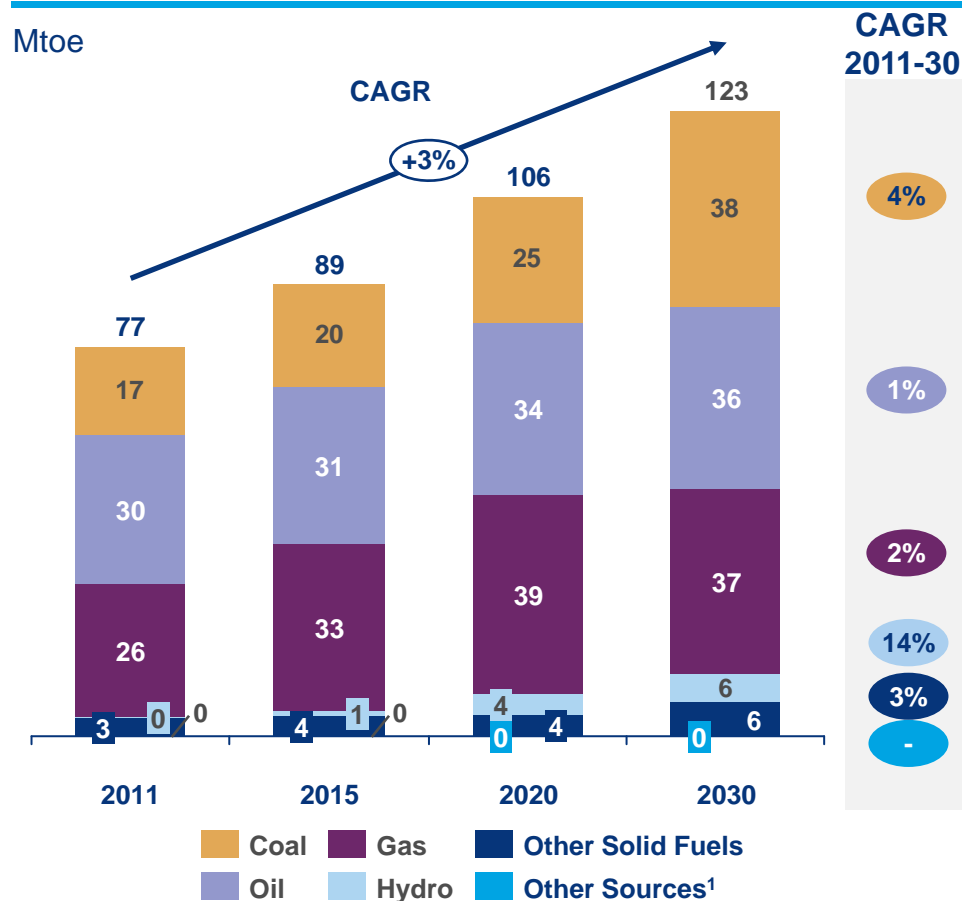
## Economic Growth and Energy Demand



Source: Wood Mackenzie

## Malaysia's current energy policy is driven by the Tenth Malaysia Plan.

### Malaysia Total Primary Energy Consumption by Fuel



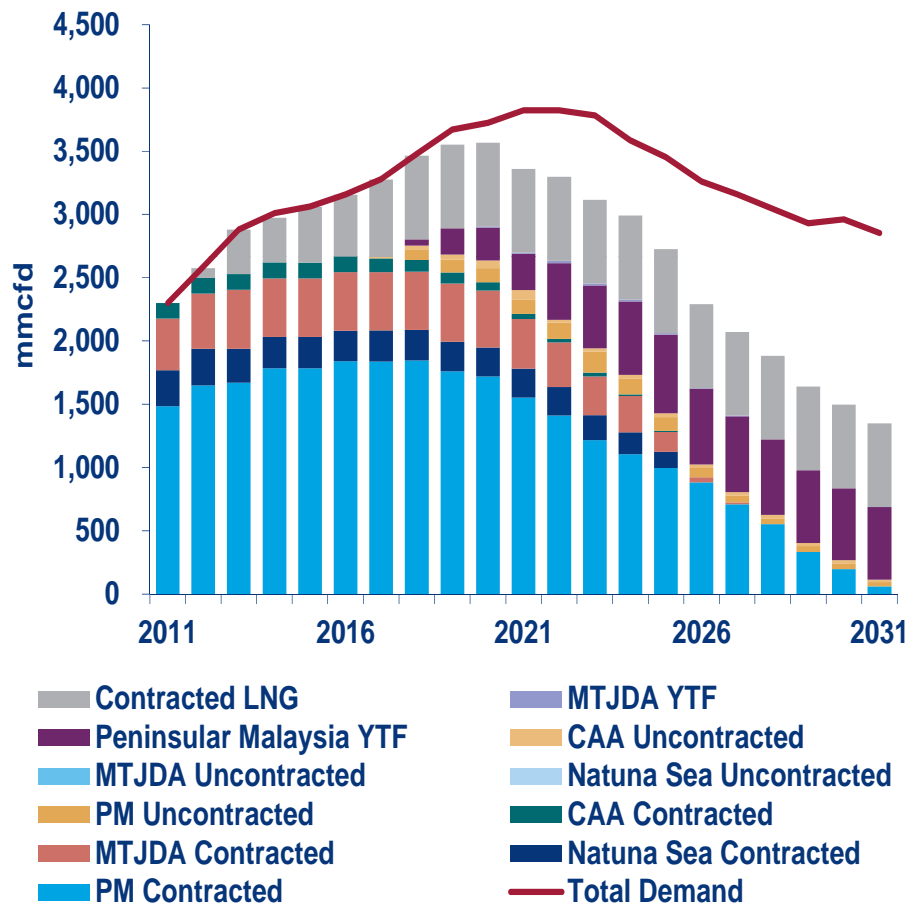
Source: Wood Mackenzie

### Malaysia Key Energy Policy Framework

- Tenth Malaysia Plan (2011-2015) highlights the “New Energy Policy”:**
  - Focuses on market pricing for gas and power, diversification of supplies with feed-in tariffs for renewables, and energy efficiency improvements.
  - Aims to enhance energy security and reliability of supply through development of hydro, LNG and coal for power.
  - Development of nuclear energy as an option.
- Gas of strategic importance given the power sector’s reliance on gas.**

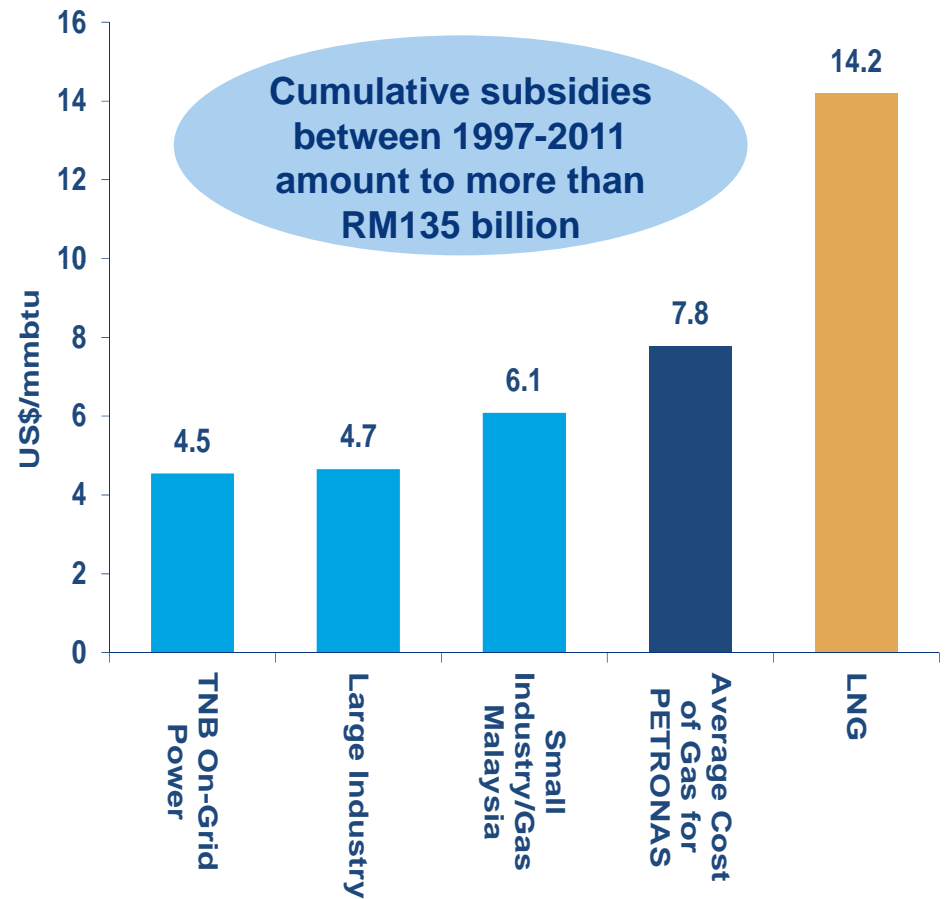
# Peninsular Malaysia is facing a looming gas shortfall which is exacerbated by domestic gas price subsidies.

Pen. Malaysia Gas Supply-Demand Outlook



Source: Wood Mackenzie / PETRONAS

Malaysia Domestic Gas Prices vs. Cost of Gas



## Malaysia's policy response has yield mixed results.

### Malaysia Upstream Fiscal Measures

**“PETRONAS Awards Small Fields Risk Service Contract to ROC and Partners” – Energy-pedia, 17 Aug 2011**

*“A Risk Service Contract is a new petroleum arrangement PETRONAS is implementing in Malaysia. This model strikes a balance in sharing risks with fair returns for development and production of discovered marginal fields”*

**“PETRONAS Awards Talisman PSC Offshore Malaysia” – EPMag, 29 May 2012**

*“This new PSC is the first of a new Progressive Volume-Based (PVB) PSC to be awarded by PETRONAS. The PVB PSC was specifically designed to incentivize contractors to improve oil recovery and increase production from mature oil fields”*

### Malaysia Proposed Gas Price Reform

**“Malaysia Ups Power, Natural Gas Prices” – Reuters, 30 May 2011**

*“Natural gas prices will rise by 3.0 ringgit per mmbtu each six months until it reached market levels...the price charged for power generation rises to 13.7 from 10.7 ringgit per mmbtu (from June 2011)”*

**“Solving Oil and Gas Subsidy Problem” – The Star, 5 May 2012**

*“The argument against subsidizing the country's oil and gas has been made time and again, yet the decision to do away with it remains one that no government would be glad to make in a hurry”*

**“Framework Needed on Gas Subsidy” – The Sun Daily, 5 Jun 2012**

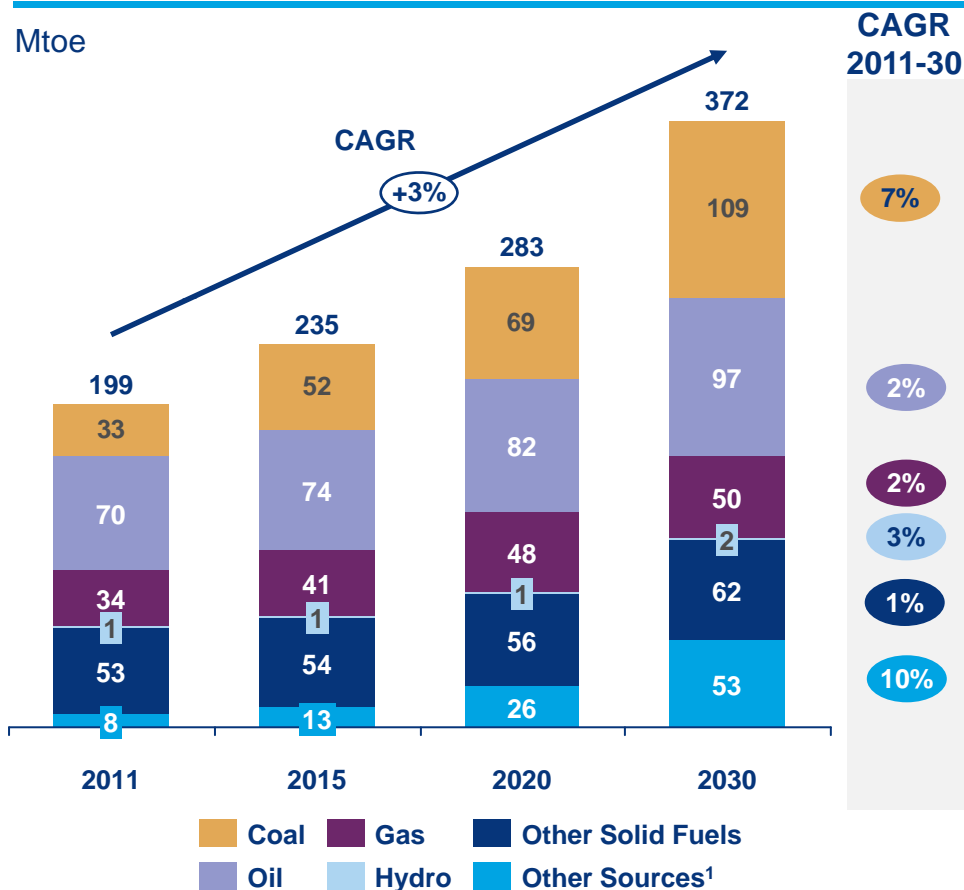
*“The Government needs to work on a mechanism in terms of who will be charges based on market rates and who will be subsidised”*

Datuk Dr Abdul Rahim Hashim, MGA

Source: Various Newswires / Wood Mackenzie

# Indonesia's Energy Law embeds the national interest as the cornerstone of energy policy.

## Indonesia Total Primary Energy Consumption by Fuel



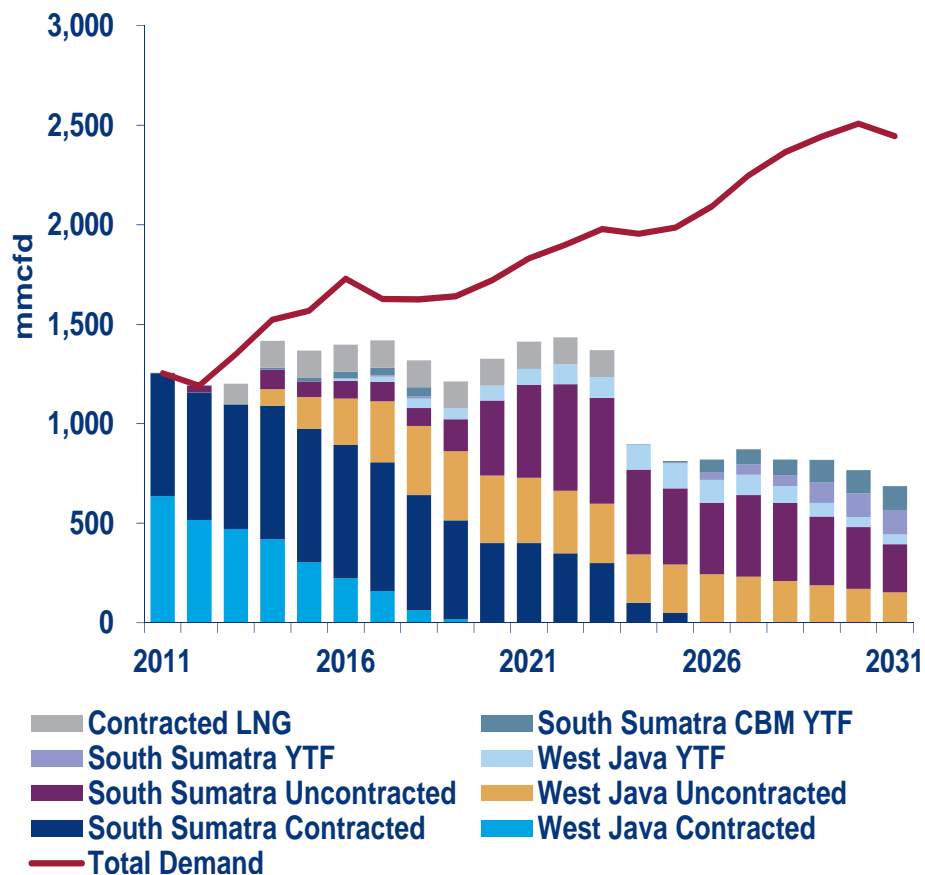
1. Other Sources include other solid fuels and other renewables  
Source: Wood Mackenzie

## Indonesia Key Energy Policy Framework

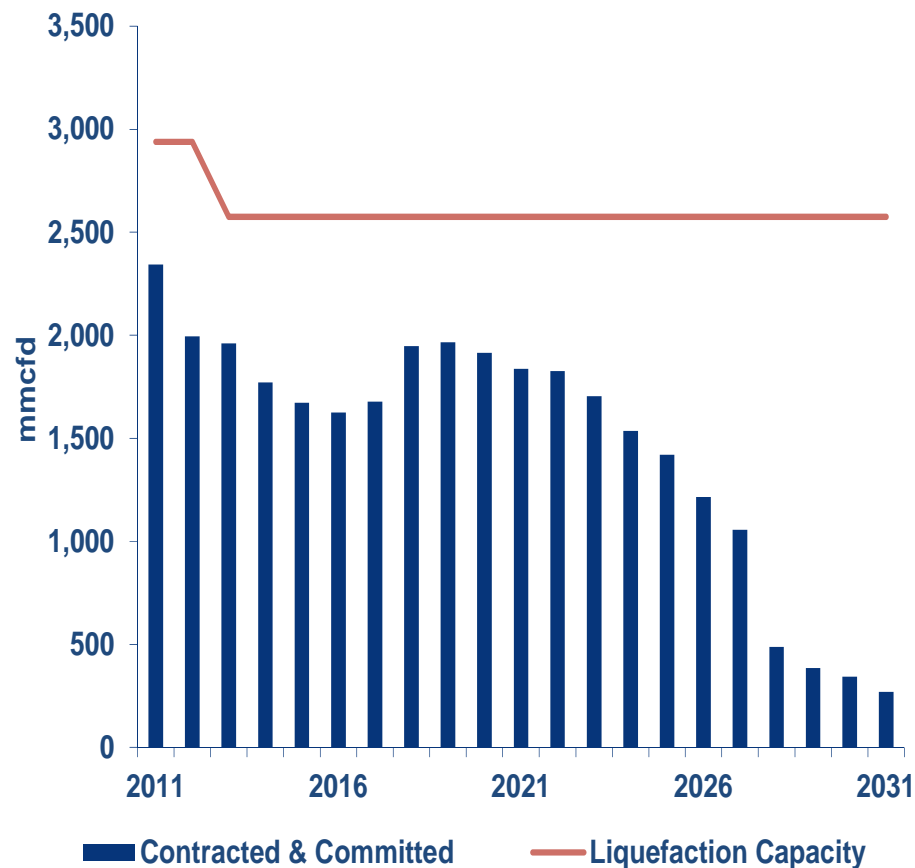
- Energy Law (2007) mandates energy resources be utilised for people's welfare:**
  - Focus on diversifying energy supply to renewable sources.
  - Guaranteeing availability of energy from indigenous sources or imports.
  - Prices based on "fair economic value"; Governments obliged to subsidize underprivileged.
- Domestic Market Obligation (DMO)**
  - Oil & Gas Law (2001) requires at least 25% of contractor entitlement production "to fulfill domestic needs"; DMO requirement extended to coal in 2009.
- Mining Law (2012) limits foreign ownership of coal mines.**

# Inadequate energy sector investment poses a major challenge for Indonesia in the gas sector...

## West Java Gas Supply-Demand Outlook



## Bontang Liquefaction Plant: Capacity vs. Output

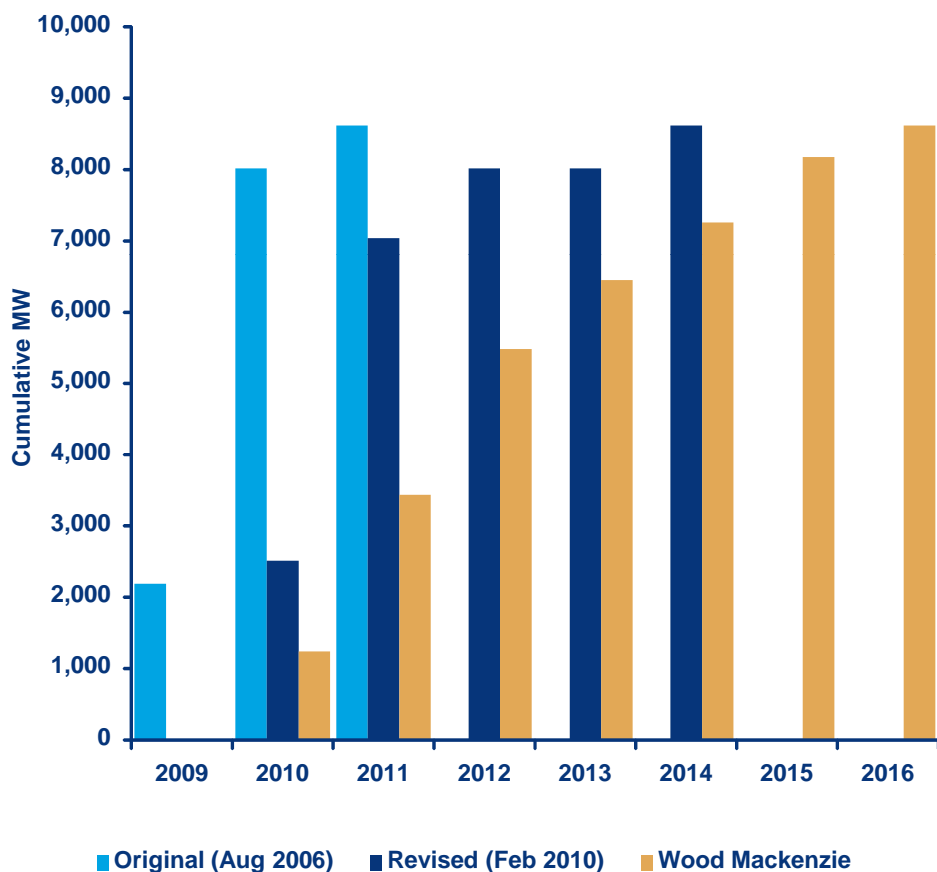


Source: Wood Mackenzie



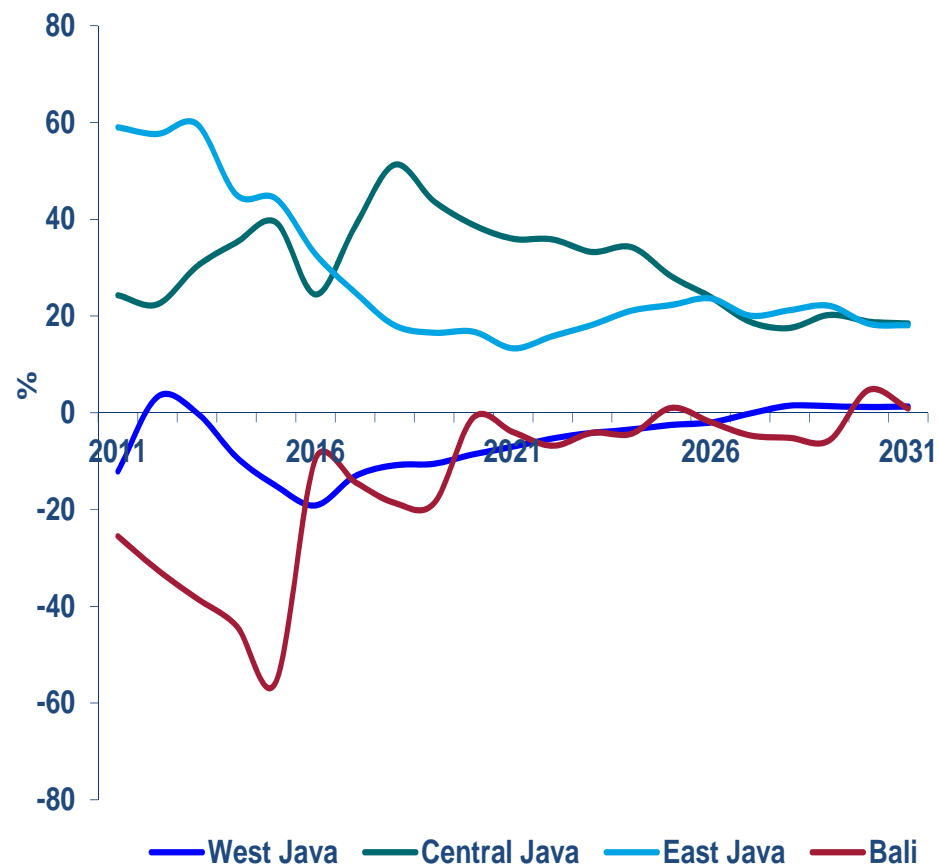
...as well as power sector.

Indonesia Crash Build Power Program I



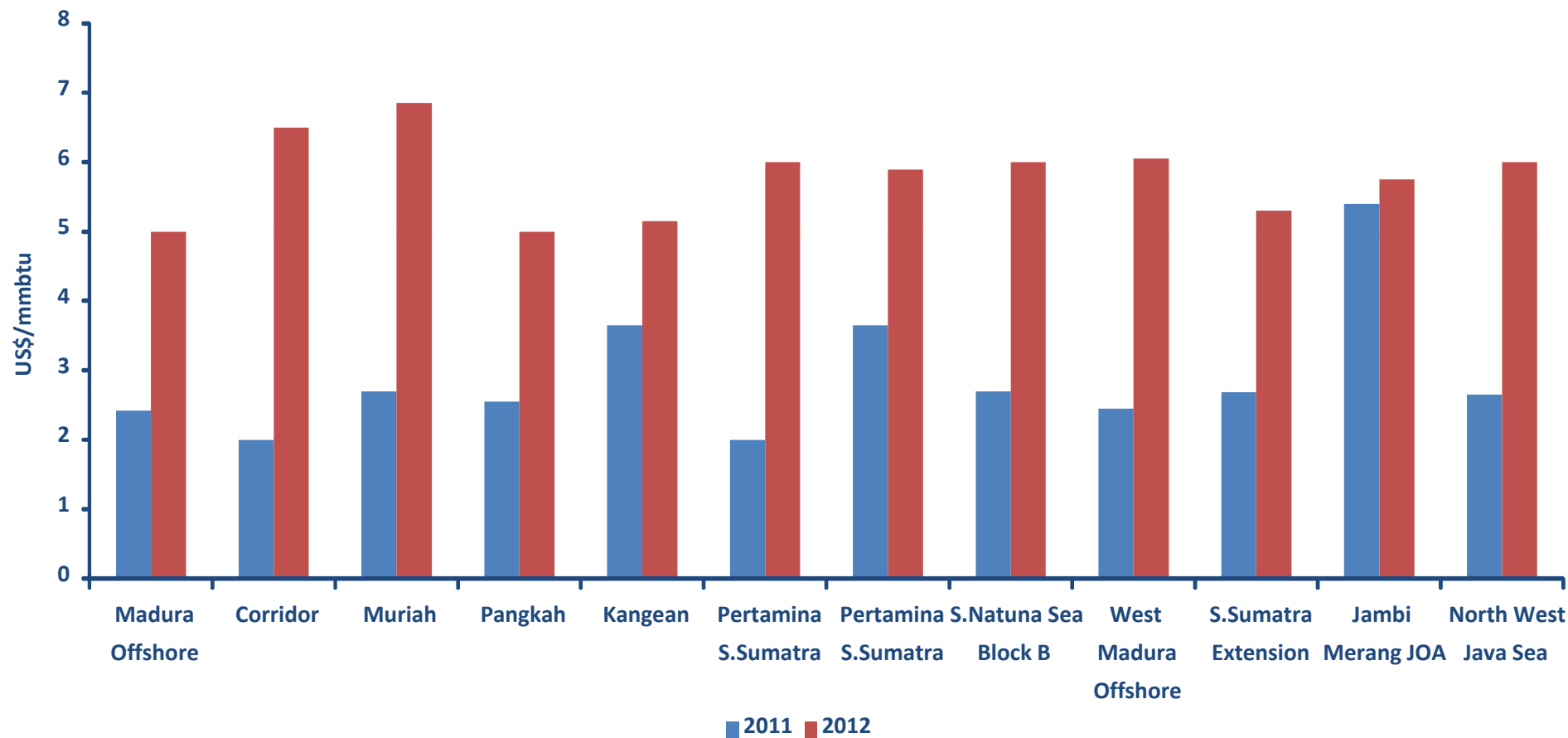
Source: Wood Mackenzie

Java-Bali Power Reserve Margin



## Gas prices have been on the rise in Indonesia as public and private sector players face up to market realities.

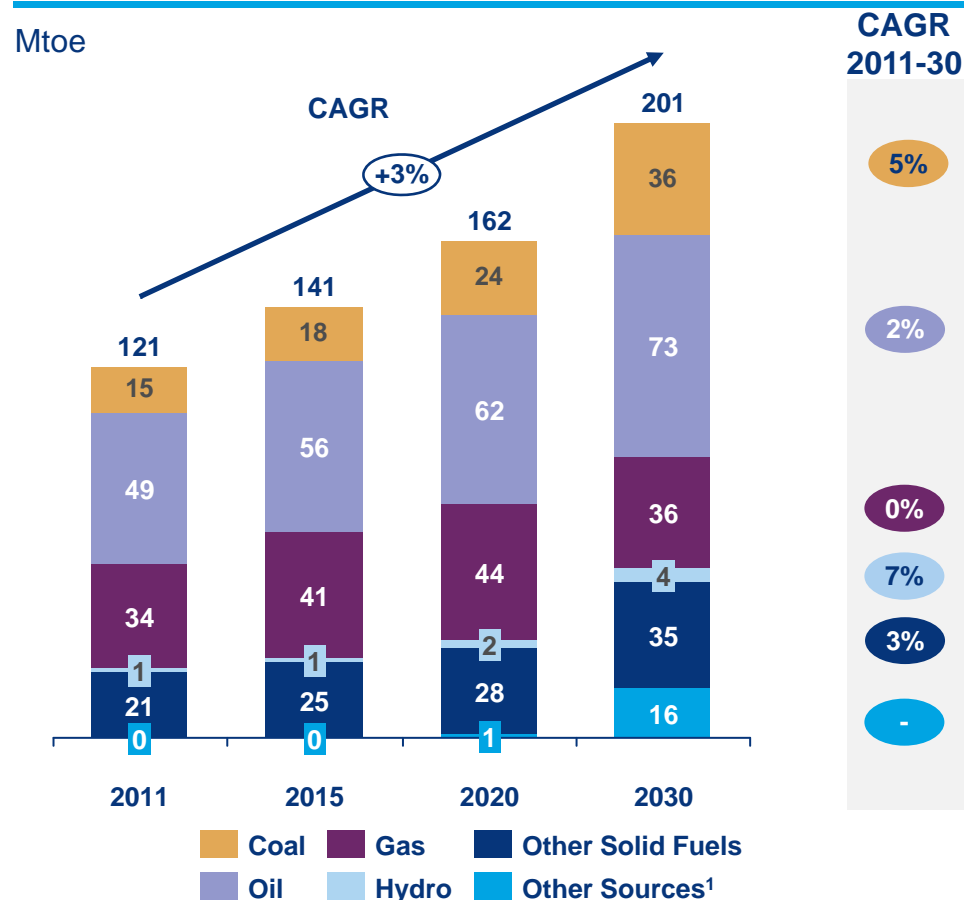
### Indonesia Upstream Gas Renegotiations



Source: Wood Mackenzie / PLN / PGN / Indonesian Utility Companies / Indonesian Petrochemical Companies

## Thailand's energy policy aims to diversify the country's fuel mix and promote market-reflective prices.

### Thailand Total Primary Energy Consumption by Fuel



1. Other Sources include other solid fuels and other renewables

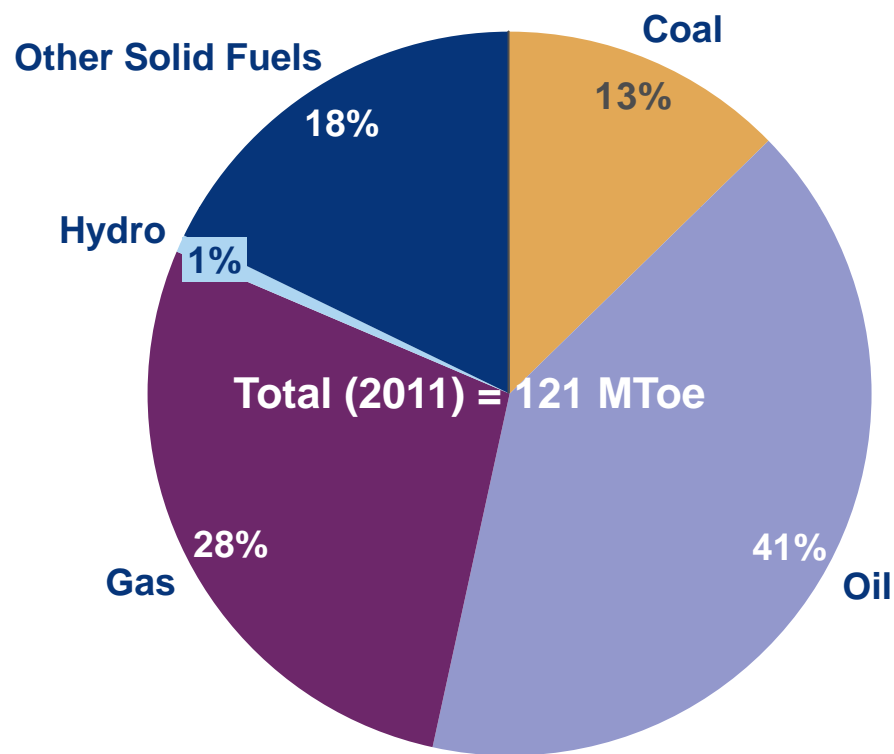
Source: Wood Mackenzie

### Thailand Key Energy Policy Framework

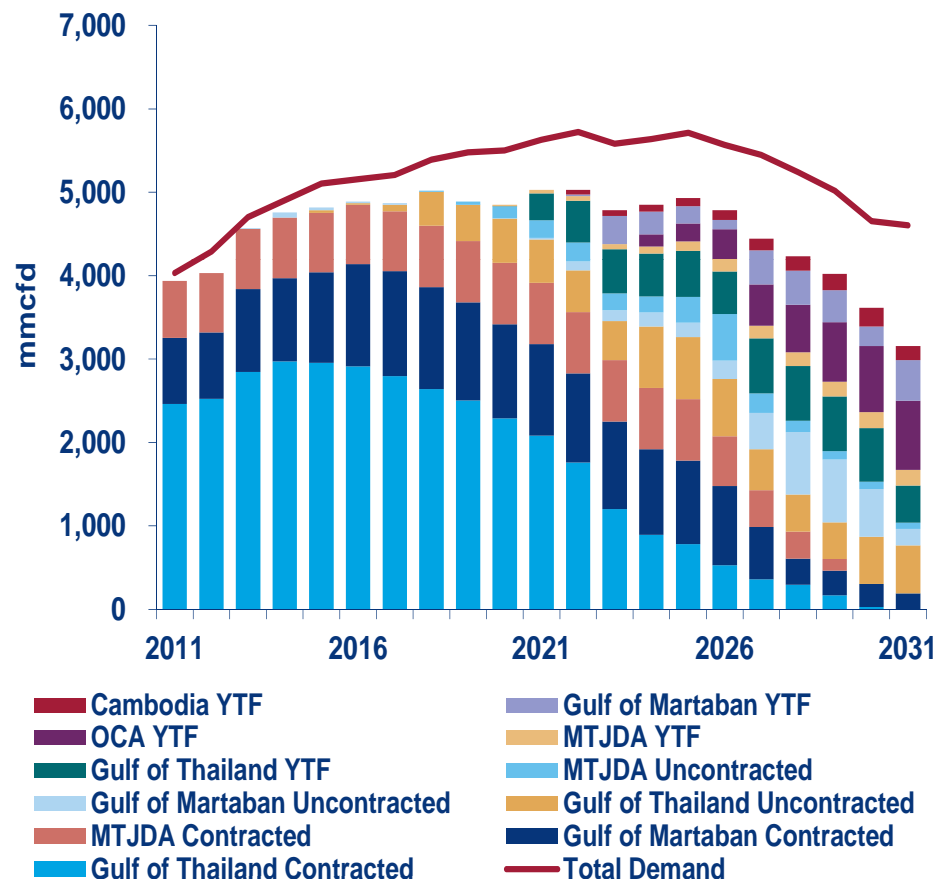
- **Fuel diversification and environmental concerns**
  - Coal-fired steam plants as a means to diversify fuel and generation mix from gas.
  - Constitution requires public hearings for projects having potential to impact health and environment (including mining and power projects).
  - Promotion of Small Power Plants (SPP) and Very Small Power Plants (VSPP) based on renewable energy.
- **Depoliticising energy tariffs**
  - Gas Pool
  - Automatic Tariff Adjustment Mechanism

# Thailand is heavily reliant on natural gas, but maturing domestic supply poses a challenge for the next decade.

Thailand Energy Mix



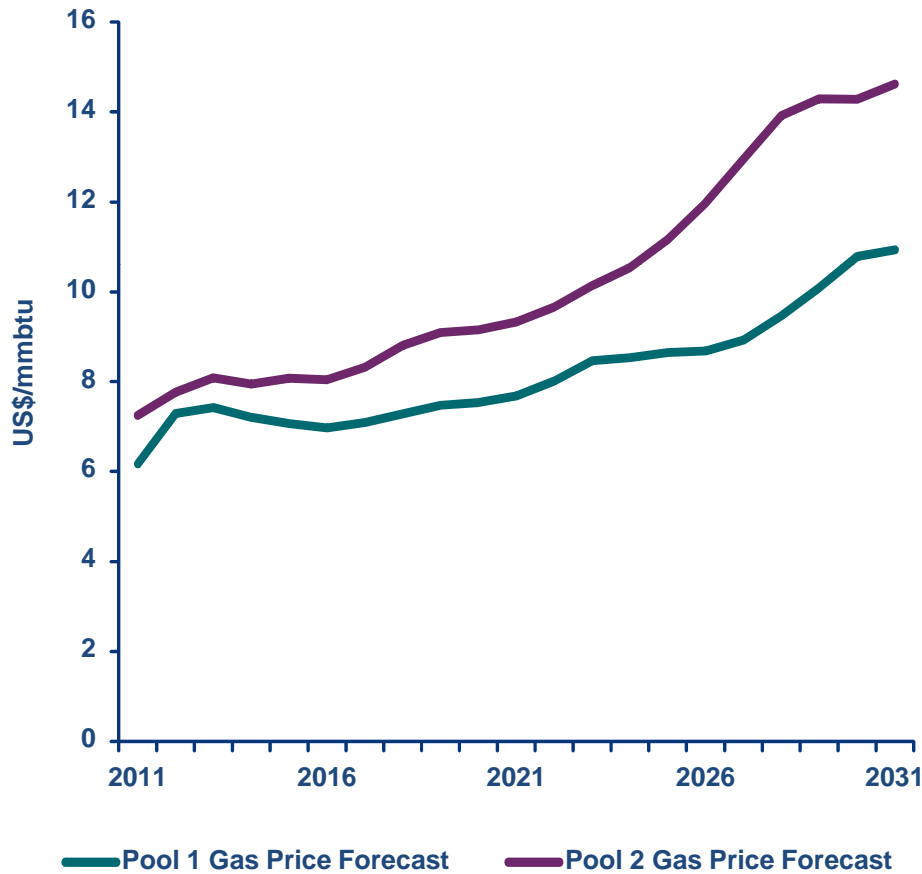
Thailand Gas Supply and Demand Outlook



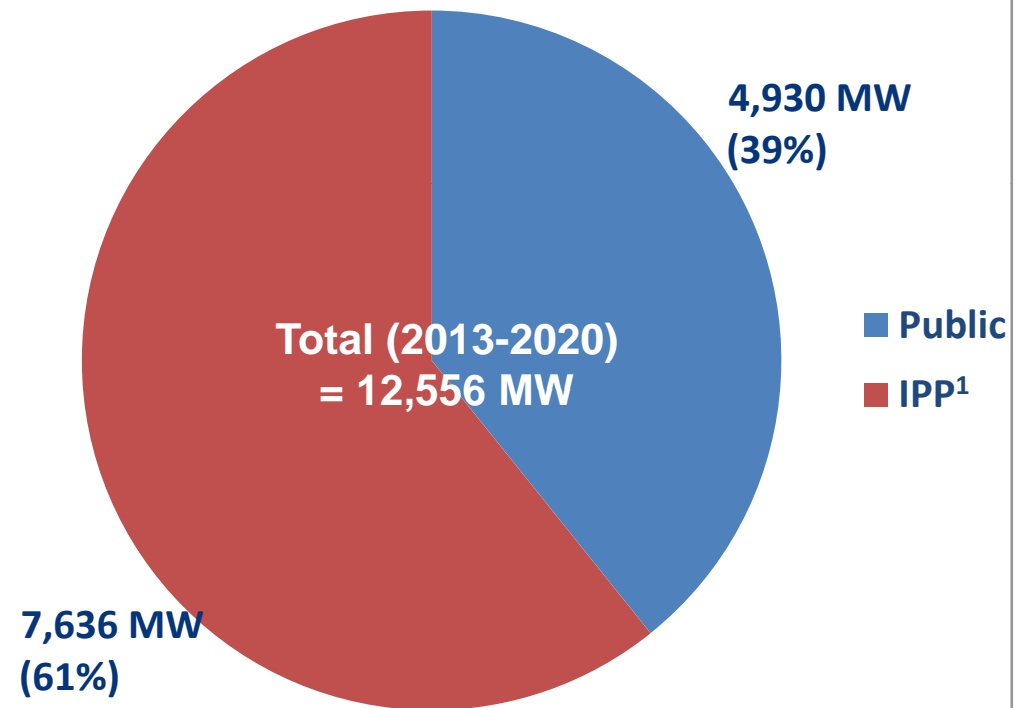
Source: Wood Mackenzie

# Thailand's energy sector has benefited from the depoliticisation of gas and power tariff-setting.

Thailand Gas Pool Prices



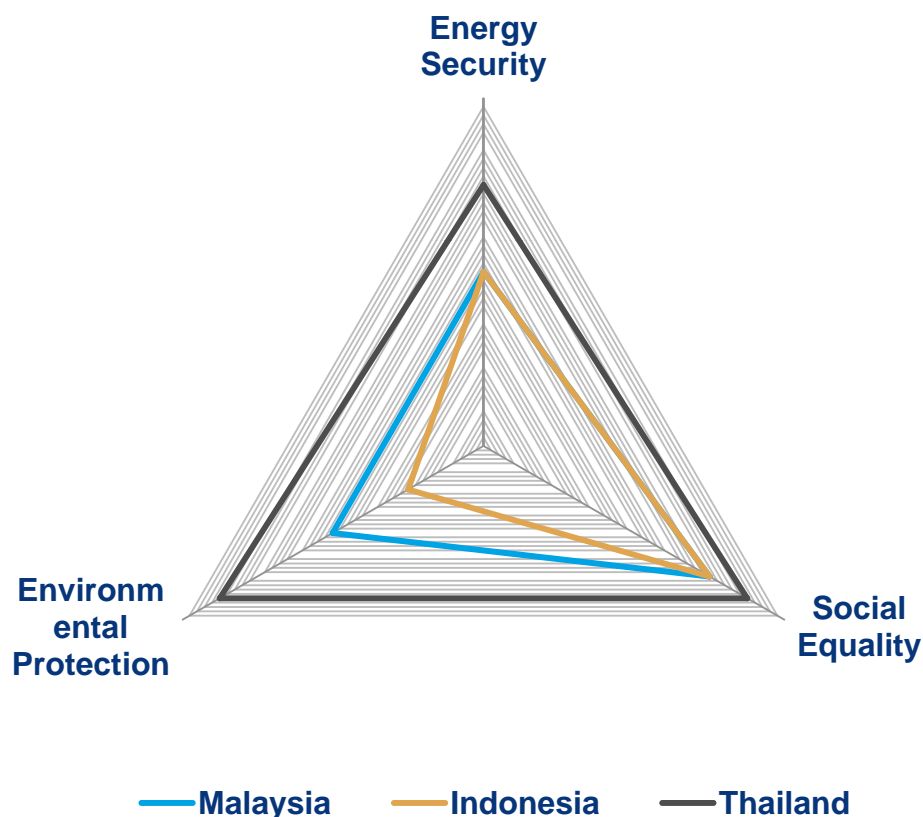
Thailand Public vs. Private Investment in Power Generation



1. Includes IPP import projects based in Laos.  
Source: Wood Mackenzie

## Malaysia, Indonesia and Thailand face a common set of energy challenges.

### The Energy Trilemma: Wood Mackenzie Point of View



Source: Wood Mackenzie

### Common Challenges for Malaysia, Indonesia and Thailand

- **Energy Security**
  - Managing indigenous resources
  - Facilitating fuel imports
  - Promoting fuel diversity
  - Encouraging energy sector investment
- **Social Equality**
  - Ensuring fuel price affordability
  - Reducing state subsidy burden
- **Environmental Protection**
  - Minimising carbon footprint
  - Improving energy efficiency

## Policy-makers in Malaysia, Indonesia and Thailand have much to learn from each other.

### Key Lessons

#### Creating Incentives

- Promotion of new upstream fiscal terms in Malaysia is incentivising development of marginal fields.
- More market-reflective gas prices in Indonesia will help attract much needed foreign investment.
- Market-reflective energy prices in Thailand serve as a clear signal for greater private sector investment.

#### Depoliticising Price Setting

- The Malaysian and Indonesian experiences demonstrate the risks created by non-market reflective prices and fuel subsidies.
- Thailand is a model of how to prevent energy price setting from capture by various interest groups.

#### Promoting Integrated Planning

- Governments have developed well-meaning energy policies, but record of implementation is varied.
- Indonesia's current energy market reflects a lack of integrated planning and ad hoc decision-making.
- Malaysia's energy planning is comprehensive, but the challenge is in implementation.

Source: Wood Mackenzie

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