Peninsular Malaysia Gas Supply and its Challenges

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PETRONAS was formed as the custodian and manager of Malaysia’s petroleum resources

**1970s**
- Incorporation of PETRONAS on 17th August 1974
- The Malaysian Petroleum Development Act 1974 vested upon PETRONAS the exclusive rights to explore, develop and produce petroleum resources within Malaysia
- First PSCs signed in 1976

**1980s-2000s**
- Gas exploration & development activities
- Downstream gas projects
- Expansion of other domestic downstream projects such as Refining, Petrochemicals & Logistics & Maritime
- International Ventures

**After 35 Years - Today**
- Fully integrated multinational oil and gas company
- Worldwide expansion in more than 30 countries
- Revenues from overseas operations
- Production of oil and gas from international ventures
Since 1980s, PETRONAS began developing its own capabilities and has evolved into a fully integrated multinational oil and gas company.
Extensive infrastructure in place to support Peninsular Malaysia gas market development

Major Facilities
- Offshore Platform: 106
- Active gas well: 203
- Major pipelines: 923 km
- Capacity: 2,520 mmscfd feed gas

Major Facilities
- Pipelines: 2,505 km
- City Gates: 27
- Slugcatchers: 3
- Kertih GPPs: 6 (2,060 mmscfd)
- TTM GSP: 1 (350 mmscfd)
- Compressor stations: 3
- RGT-1 Melaka: 3.8 MTPA

Total Investment
- ~RM 26 billion to develop PGU system
- ~RM 2 billion to develop Trans Thai-Malaysia facilities
- ~RM 3 billion to develop RGT-1

PGU Projects
- Phase 1: 1984
- Phase 2: 1992
- Phase 3: 1997
- JDA: 2005
- RGT-1: 2013

Map showing major facilities and pipelines connecting various locations across Peninsular Malaysia.
Unprecedented growth since late 1990 in Peninsular Malaysia can no longer be sustained from indigenous gas production.
Gas demand breakdown by customer type

Historical Gas Demand of Peninsular Malaysia
Unit: mmcf/d

Power

Non-Power

Export
Prior to RGT, gas supply in Peninsular Malaysia has not been able to meet its demand due to a combination of issues

**Supply**
- Indigenous Peninsular Malaysia production is not able to meet demand
  - domestic producing fields are on rapid decline due to accelerated extraction rate
- Over-stretching of the supply system has led to frequent supply interruptions
- Remaining reserves are technically & commercially challenging to be developed
  - Small in size
  - Scattered locations
  - High CO₂ content

**Demand**
- Inappropriately priced gas has created unsustainably high demand
  - end users preference to gas have increased compared to other higher cost of fuels such as coal, fuel oil, diesel or LPG
With RGT in Melaka, Peninsular Malaysia gas demand can be met.
Indigenous supply can only meet 57% of total demand
Government imposed regulated pricing in 1997 during the Asian Financial Crisis

In May 2011, Cabinet approved gas price increase effective from June 2011

No subsequent gas price increase was implemented

<table>
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<tr>
<th>Sector</th>
<th>w.e.f 1 May 1997</th>
<th>w.e.f Oct 2002</th>
<th>w.e.f 1 July 2008</th>
<th>w.e.f 1 August 2008</th>
<th>w.e.f 1 March 2009</th>
<th>w.e.f 1 June 2011</th>
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<tr>
<td>Power</td>
<td>6.40</td>
<td>6.40</td>
<td>14.31</td>
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<td>Contractual</td>
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<td>32.56</td>
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<tr>
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<td>Contractual</td>
<td>9.40</td>
<td>24.54</td>
<td>17.99</td>
<td>11.05</td>
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Revenue foregone due to regulated gas pricing is now at RM 199.9 billion

Cumulative since 1997:
- Power: 135.23 billion
- Non Power: 62.51 billion
- NGV: 2.16 billion
Total = 199.90 billion

2013 (YTD Q3):
- Power: 11.81 billion
- Non-Power: 8.08 billion
- NGV: 0.40 billion
Total = 20.29 billion
Prolonged regulated pricing causes market imbalance & inefficiencies

- Gas shortage
- Cost of new supplies
- Inefficient usage
Domestic gas market reform to ensure sustainable energy security

**Regulated Market**
- Infrastructure
  - Conduit to diversify sources of gas supplies via LNG imports
  - Regasification Terminals
    - Sg. Udang, Melaka
    - Pengerang, Johor

**Market Rules, Regulation & Enforcement**
- Clear & transparent rules to facilitate supply competition and safe utilisation of gas
- Third-party Access
  - Competition will help ensure gas is efficiently priced

**Stable Policy Framework**
- Predictability and credibility for effective long-term planning
  - A robust National Energy Policy that comprehensively internalises Malaysia’s energy challenges
    - Frequent policy changes will create unacceptably high risk for investors and lead to underinvestment

**Open Market**
- Pricing Mechanism
  - Prices that incentivize timely availability of supplies
  - Gas market set by competitive gas market
  - Gradual phasing out regulated gas pricing
THANK YOU
The new gas price mechanism and its application

**New gas price mechanism**

- LNG WAP (FOB) ex Bintulu
- Discount factor
  - 15% for Power
  - 10% for non-Power
- Shipping
- Regas
- Pipeline Transmission

Price mechanism shall be reviewed in 2020

**Application**

- **Power Sector**
  - Supply of up to 1,000 mmscfd threshold will be at regulated price. Threshold will be reviewed by PETRONAS every 3 years starting 2016
  - Supply above threshold will be at the new gas pricing mechanism

- **Non-Power Sector**
  - Current contractual volume at regulated price
  - All new contracts will be at the new gas price

Price of gas delivered to customers