Policy Goals for Unconventional Gas and Investment Needs

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AGENDA

- SHIFTING PARADIGM WITHIN OIL AND GAS INDUSTRY
- POTENTIAL OF GAS DEVELOPMENT IN INDONESIA
- DEVELOPMENT OF GAS INFRASTRUCTURE IN INDONESIA
- UNCONVENTIONAL OIL AND GAS IN INDONESIA
SHIFTING PARADIGM WITHIN OIL AND GAS INDUSTRY
FROM OIL TO GAS

OIL PRODUCTION DOMINATED

GAS PRODUCTION DOMINATED

barel oil equivalent

OIL (MBOPD)  GAS (MBOEPD)
FROM WEST TO EAST

More reserves found and exploration activities occurred in the eastern part of Indonesia mainly **deepwater project**.

Most of bidding acreage located in the eastern side of Indonesia.

**Discoveries in Jurassic Plays 1998-2008**

**Western part**

**Eastern part**

**Mostly Tertiary**

**Eastern Indonesia Contract Signed**

![Graph showing the number of contracts signed each year from 2003 to 2010.](image-url)
POTENTIAL OF GAS DEVELOPMENT IN INDONESIA
Natural Gas Resources – Reserves & CBM Resources, Shale Gas Potential

GAS RESOURCES = 334.5 TSCF
GAS RESERVES

(As of December 31st 2010)

PROVEN = 104.71 TSCF
POTENTIAL = 48.18 TSCF
TOTAL = 152.89 TSCF
(As of January 1st 2011)

CBM RESOURCES = 453.30 TCF

Total CBM Basin = 11

Signed Contracts up to December 2011: 42 CBM PSCs

SHALE GAS POTENTIAL

- Currently, the Government has been doing initial study shale gas potential in Indonesia
- Some rock samples have been taken from several regions for laboratory analysis
High conventional oil & gas demand
- Rising oil prices and other energy commodity prices
- Consideration to develop unconventional oil & gas
- Surplus in 2016 (FSRU on stream, new gas field development)
- Shortage in 2022 (alternative supply from unconventional gas)
DEVELOPMENT OF GAS INFRASTRUCTURE IN INDONESIA
Comparison of Accumulation Volume Contract Domestic vs. Exports status Nov 2011

EXPORT
6,11 TCF
24%

DOMESTIC
19,52 TCF
76%

Comparison of Accumulation Volume Contract Domestic vs. Exports During 2001 – Nov 2011
National Gas Pipeline (transmission & distribution)

Gas for Transportation:
- Buses in the City (short distance) → CNG
- Taxi / Private Car → LGV
- Inter-Provincial Buses (long distance) → LNG

City Gas (Gas for Household)
- Households that close to the gas sources or gas transmissions pipeline
- GoI began a preliminary study of city gas in 2008 and builds Gas Distribution Networks for Household:
  - 2009: Surabaya & Palembang
  - 2010: Tarakan, Depok, Bekasi, & Sidoarjo
  - 2011: Bontang, Sengkang, flats in Jabodetabek, Sidoarjo II, and Bekasi II
  - 2012: Prabumulih, Kab. Bogor, Jambi, Sidoarjo III, and Cirebon

Floating Storage Regassification Unit (FRSU)
- LNG Receiving Terminal will be built in 3 location: West Java, North Sumatra, and Central/Eastern Java

Small scale LNG receiving terminal
- Development mini LNG Plant 1st stage: Samarinda, Balikpapan, Bali & Southeast Sulawesi
UNCONVENTIONAL OIL AND GAS IN INDONESIA
Developing unconventional oil & gas in Indonesia

Coal Bed Methane (CBM)
- Pilot Project was done by Lemigas at Rambutan Field in 2004
- Since 2008 until 2011, have signed 42 CBM PSC’s all around Sumatera and Kalimantan
- CBM for electricity in surrounding CBM areas started in 2011

Shale Gas
Identification of potential shale gas in Indonesia: Sumatra: 3 basins (baong shale, telisa shale, & gumai shale); Java: 2 basins; Borneo: 2 basins; Papua (klasafet formation)

Oil Sand, Tight Gas, Biogenic Gas
R&D studies is ongoing

Coal Development for Oil & Gas substitute
- COAL
  - Liquid
    - Ethanol
    - Dimethyl Ether (DME)
  - Gas
    - Diesel Oil
WHY DEVELOP UNCONVENTIONAL OIL & GAS IN INDONESIA

- Demand for conventional oil and gas is progressively increase;

- Abundance of unconventional oil & gas resources associated with conventional oil and gas;

- To meet the high demand of gas both domestically;

- Massive potential resources of CBM (453 TCF) and high-ranked indications of shale gas (Baong Shale, Telisa Shale, Gumai Shale and Klasafet Formation)
**Contractor Economical Improving**
**With More Attractive Terms & Conditions**

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<tr>
<th>Terms &amp; Conditions</th>
<th>Remarks</th>
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<tbody>
<tr>
<td><strong>Before Revised</strong></td>
<td><strong>Expected Condition</strong></td>
<td><strong>After Revised</strong></td>
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<td><strong>Terms &amp; Conditions</strong></td>
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<td><strong>Remarks</strong></td>
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<td><strong>Split</strong></td>
<td>Depend on field condition</td>
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<td><strong>Cost Recovery</strong></td>
<td>90% (ceiling cost)</td>
<td>100% (no cost ceiling)</td>
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<tr>
<td><strong>Handling</strong></td>
<td>Not to be sold</td>
<td>Can be sold, with the distribution of results according to the split in the Contract but the cost cannot be recovered</td>
<td>Can be sold, with the distribution of results according to the split in the Contract but the cost cannot be recovered</td>
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<td><strong>Production before</strong></td>
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<td><strong>Commerciality</strong></td>
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<td><strong>Contract Duration</strong></td>
<td>30 Years</td>
<td>30 Years</td>
<td>Given legal certainty for investment returns that are tailored to the ability of field (may &gt; 30 years)</td>
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THANK YOU

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