MINISTRY OF ENERGY AND MINERAL RESOURCES

DIRECTORATE GENERAL OIL AND GAS

INDONESIA'S UNCONVENTIONAL RESOURCES: POLICIES, REGULATION AND OPPORTUNITIES ON UPSTREAM OIL & GAS BUSINESS DEVELOPMENT

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Presented at:

2 nd United States-Indonesia Energy Investment Roundtable

Jakarta, 6th Pebruary 2012

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OUTLINE

1. Energy Global
2. Indonesia Primary Energy Mix
3. Indonesian Unconventional Gas Development
4. Environment & Field Operation Challenges
5. Unconventional Gas Regulation

I. ENERGY GLOBAL

(Exxon Mobil " 2012 The Outlook for Energy: A View to 2040")

NATURAL GAS RISES SHARPLY THROUGH 2040

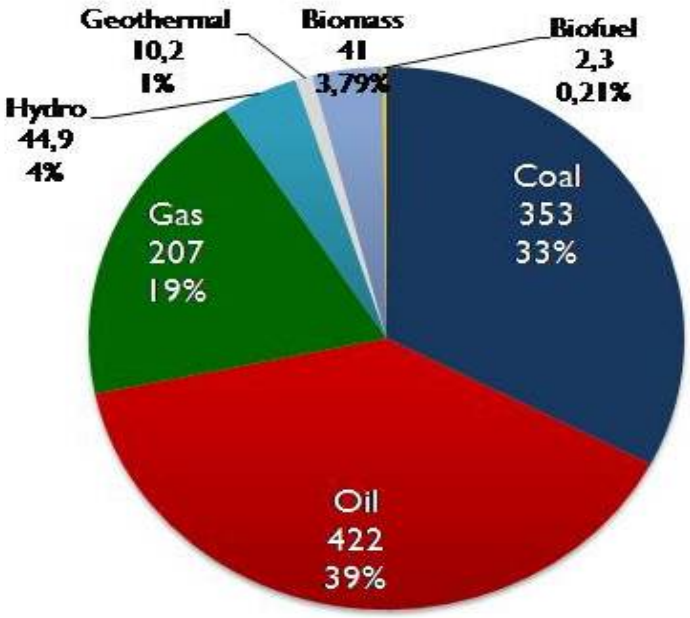
30% UNCONVENTIONAL GAS MARKET SHARE, 2040

RISE IN GLOBAL ELECTRICITY DEMAND

INDONESIA PRIMARY ENERGY MIX 2010-2030

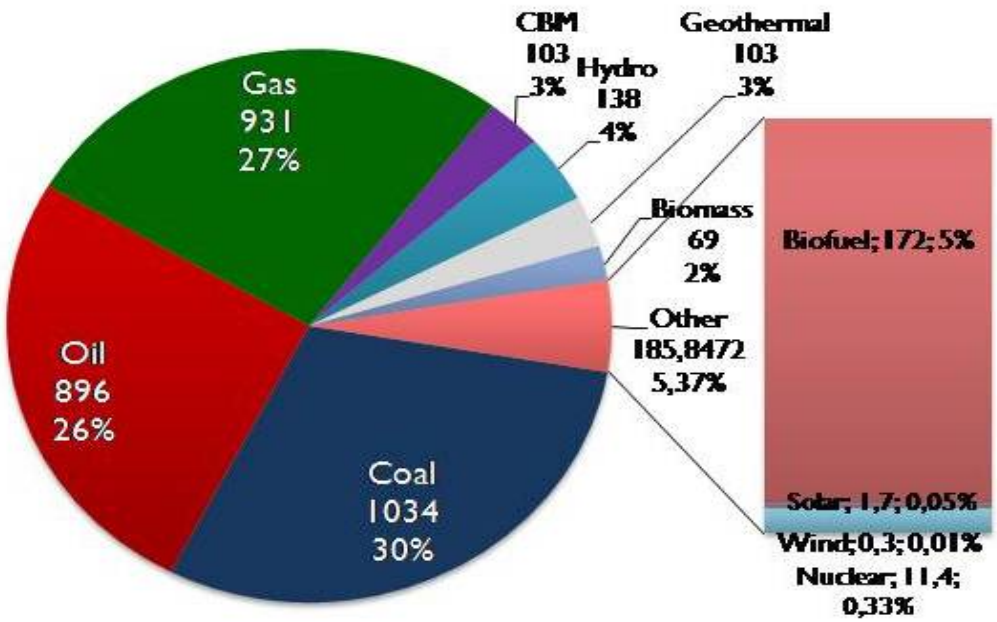
Source : Data and Information Centre, MEMR)

Year 2010



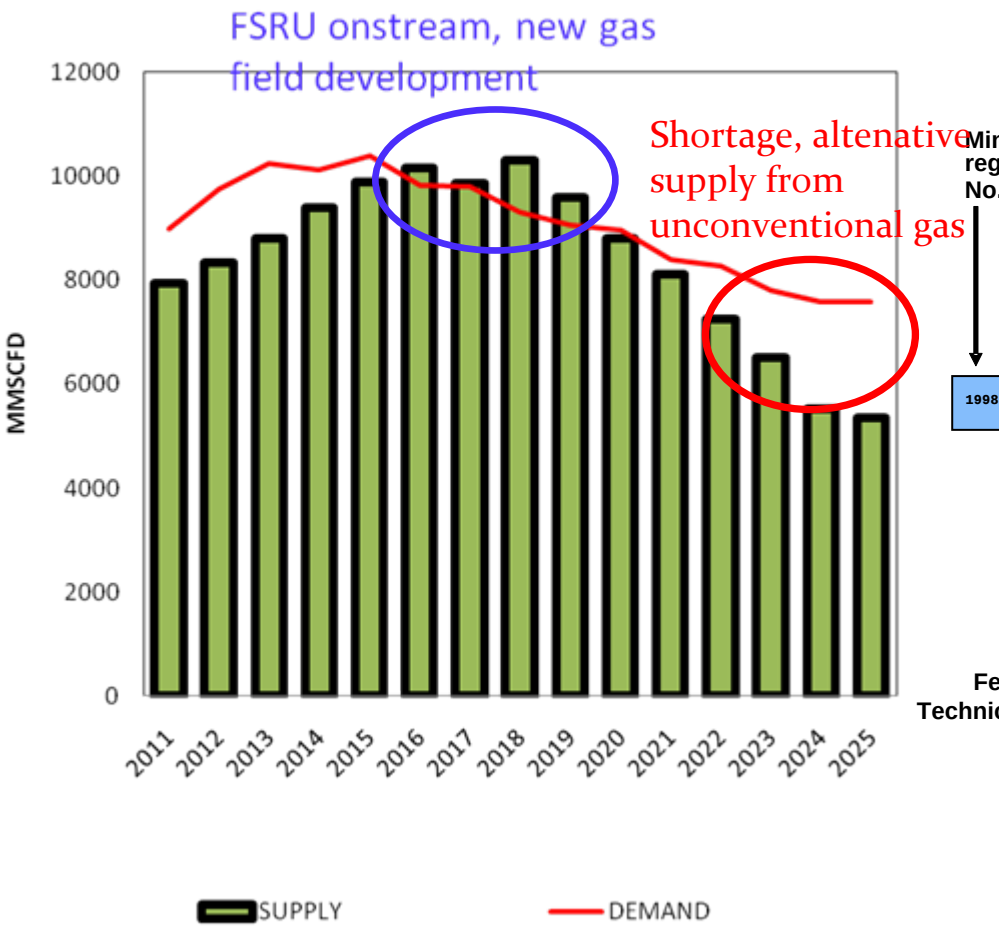
Total Annual Demand: 1080 Million BOE.

Year 2030 - Mitigation Scenario

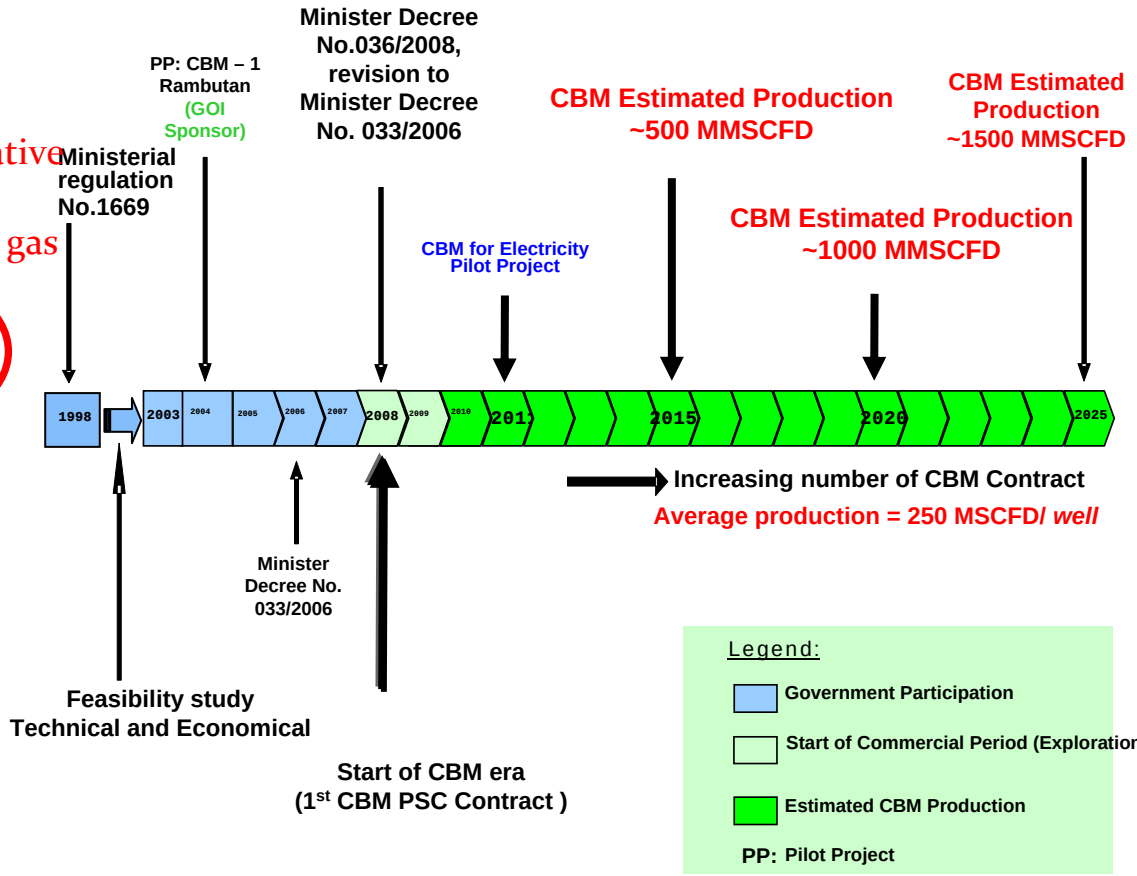


Total Annual Demand: 3448 Million BOE.

INDONESIA GAS BALANCE (2011-2025)



ROAD MAP of INDONESIAN CBM DEVELOPMENT



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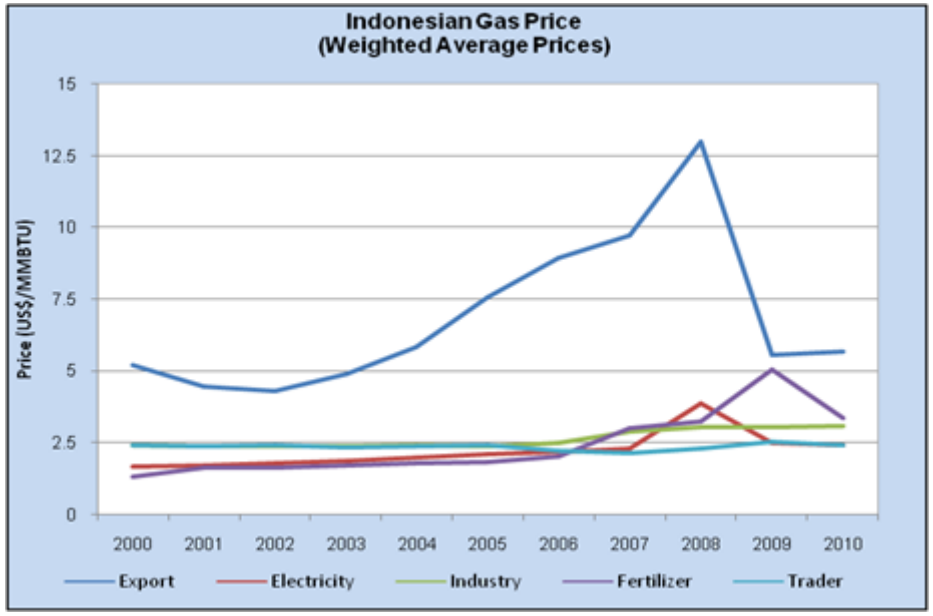
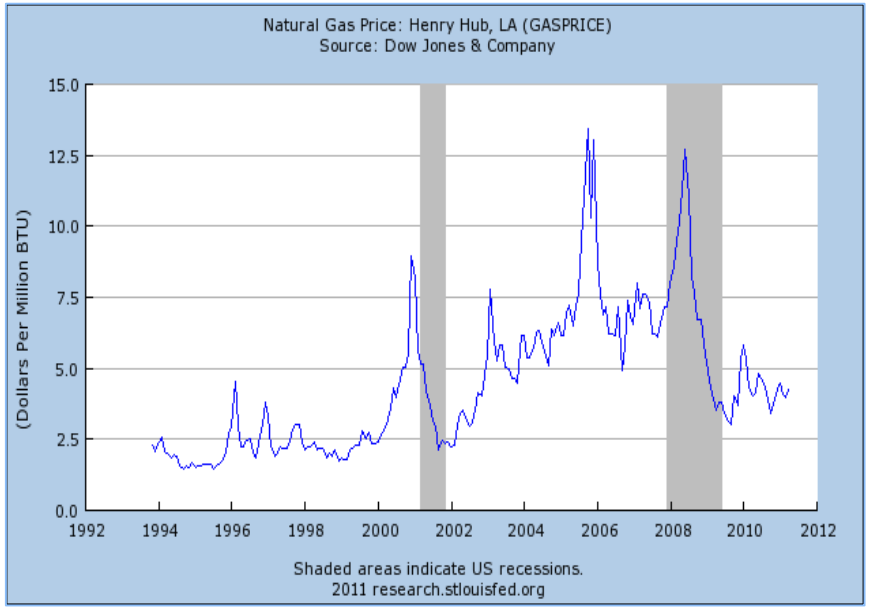
INDONESIAN GAS PRICE VS HENRY HUB PRICES

Indonesia Gas Prices



Henry Hub Gas Prices



NO.	CONSUMERS	GAS PRICE (US$/MMBTU)
1.	Fertilizer	4.00 – 6.50
2.	Electricity	4.55 – 6.07
3.	Gas Trader	4.20 – 5.40
4.	LNG (export)	8.12– 13.23

Note :

- LNG (Domestic) (HOA Status) = US$ 8.80/MMBTU
- CBM (GSA) = US$ 7.5/MMBTU
- ICP = US$ 80/barrel

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SHALE GAS WORKING ACREAGE

Operational Area Shall be a certain area within the Indonesian Legal Mining Territory for conducting Shale Gas Exploration and Exploitation.

Shale Gas Working Acreage

Open Area/ Available Area

Offered by:
1.Reguler Tender
2.Direct Offer , proposed by:

A Business Entity or Permanent Establishment

Existing Oil & Gas Working Acreage

Offered by:
1.Direct Offer

The first priority is given to :
Existing Oil and Gas (60 days after letter from Migas)

Existing CBM Working Acreage

Offered by:
1.Direct Offer

The first priority is given to :
Existing CBM
(60 days after letter from Migas)

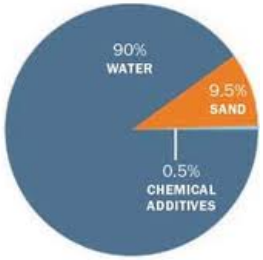
Overlapping between CBM and Oil & Gas

Offered by:
1.Direct Offer

The first priority is given to :
Existing Oil and Gas
(60 days after letter from Migas)

What Are the Environmental Challenges?

- Proper Handling of Chemicals
- Water Use

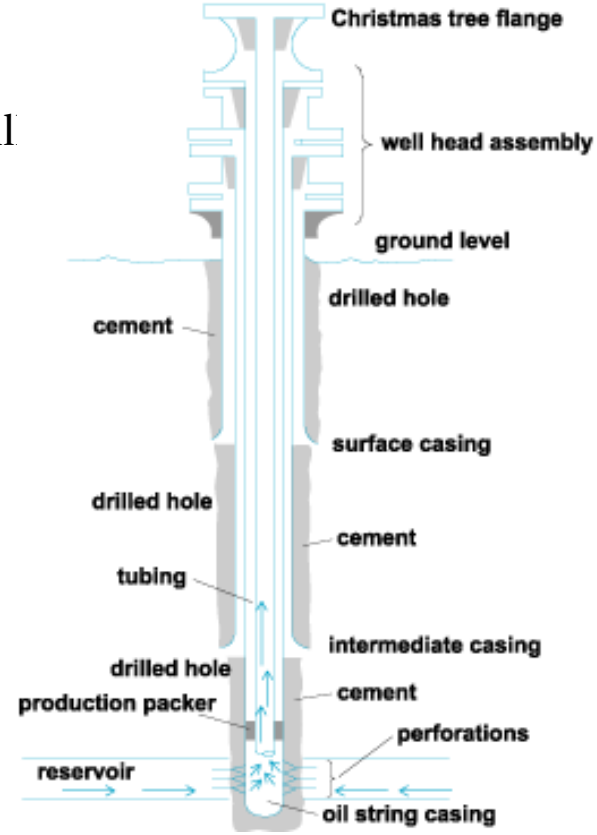


Indonesia is a tropical country with high rainfall and has many big rivers

- Water Disposal

Following hydraulic fracturing, large volumes of water (flowback) wil be treated as oil and gas waste water (produced water)

- Hydraulic Fracturing
  - Proper well construction is required to protect groundwater.....whether hydraulic fracturing is utilized or not
  - In 60 years of use, there has never been a documented case of groundwater contamination associated with hydraulic fracturing



Brad Richards, Executive Vice President IOGA ILLINOIS OIL & GAS ASSOCIATION

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Field Operational Challenges, CBM Study Case

- Land Acquisition

  B to B, and local empowerment

- Hanc er Disposal (Environmental Minister's Decree No 02/2011 concerning business and / or CBM exploration and exploitation activities)

  (for fisheries and agriculture or irrigation)

- Civil Commotion (demanding road repairs)

Build and maintenance infrastucture

R(oad to the well head)

POTENTIAL AREA AS SHALE GAS RESOURCES

AREA	North Sumatera	Central Sumatera	South Sumatera	East Java	Kalimantan
FORMATION NAME	Lower Bampo	Brown Shale of Pematang Group	Talang Akar	Kunjung Shale	Balikpapan Group
	Baong Shale	Upper Red Bed of Pematang Group	Baturaja	Ngimbang Shale	Kampung Baru
	Peutu Shale	Sihapas Group	Telisa	CD Formation	Lower Tanjung
			Palembang		

Source: BSAPIIE, ITB 2012

CBM VS SHALE GAS

	CBM	SHALE GAS
Regulation	Minister Decree No 36/ 2008	Minister Decree No 05/ 2012
Target Exploitation	Seam Coal	Source Rock (Kitchen)
Working Acreage		
- Open Area/ Available Area	- A Business Entity or Permanent Establishment	
- Existing Area	- Existing Oil & Gas	- Existing Oil & Gas
	- Existing Coal Consession	- Existing CBM
	- Overlapping Existing Oil & Gas – Existing Coal Conssesion → first priority Oil & Gas	- Overlapping Existing Oil & Gas – Existing CBM → first priority Oil & Gas
Environmental Regulation	Environmental Minister's Decree No 02/2011 concerning Waste water quality standard for business and / or CBM exploration and exploitation activities	Refer to Law No. 32/2009 concerning Environmental Protection and Management
Term & Condition	Based on Resources, Cost (Capex & Opex), and Gas Price (Economically Development)	

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Thank You

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