



REPUBLIK INDONESIA

# Indonesia's Country Report on Clean Coal Technology

**ASEAN++ 2013, Moving Forward, the 11<sup>th</sup> International Conference on Mining, Materials and  
Petroleum Engineering, ASEAN Forum on Clean Coal Technology**

**11-13 November 2013, Centara Duangtawan Hotel, Chiang Mai, THAILAND**

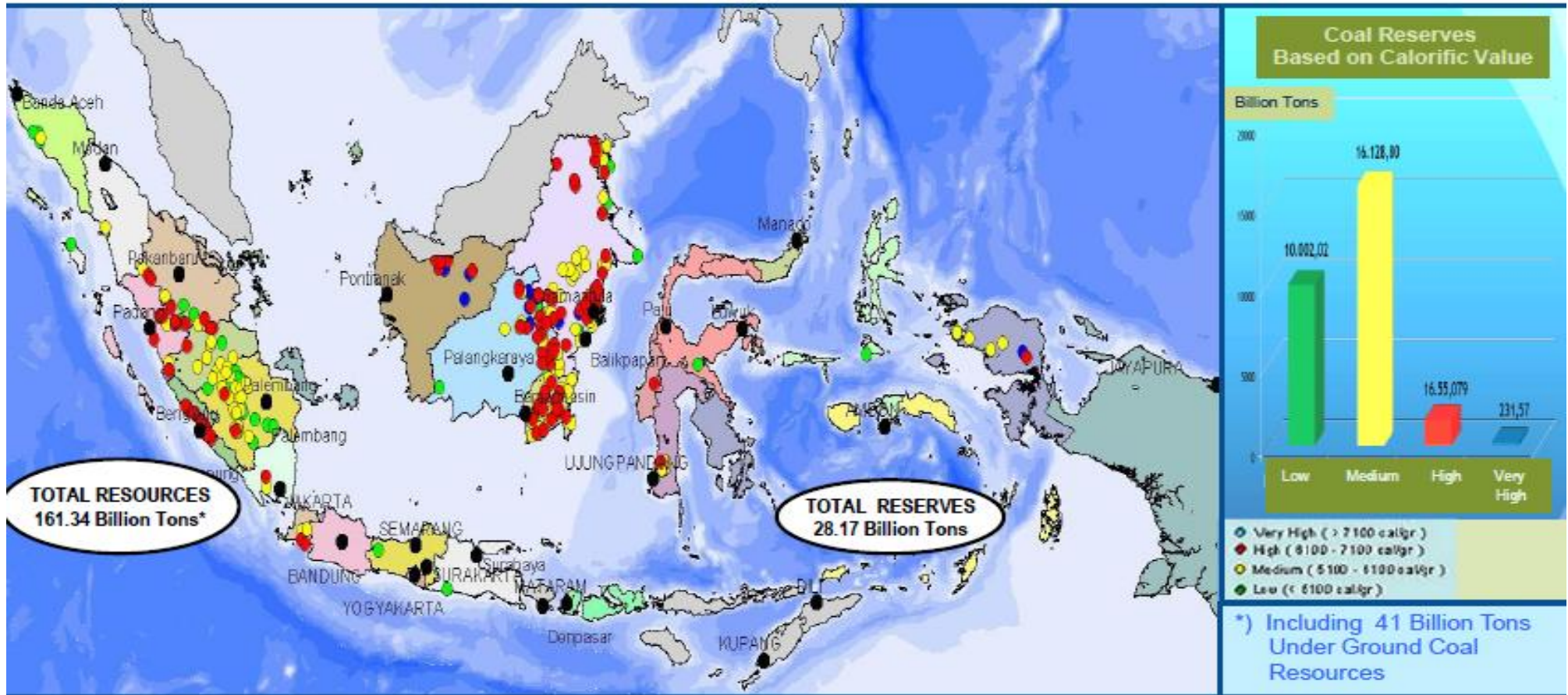
**MINISTRY OF ENERGY AND MINERAL RESOURCES THE REPUBLIC OF INDONESIA  
AGENCY OF R&D FOR ENERGY AND MINERAL RESOURCES  
R&D CENTRE FOR MINERAL AND COAL TECHNOLOGY**

**2013**

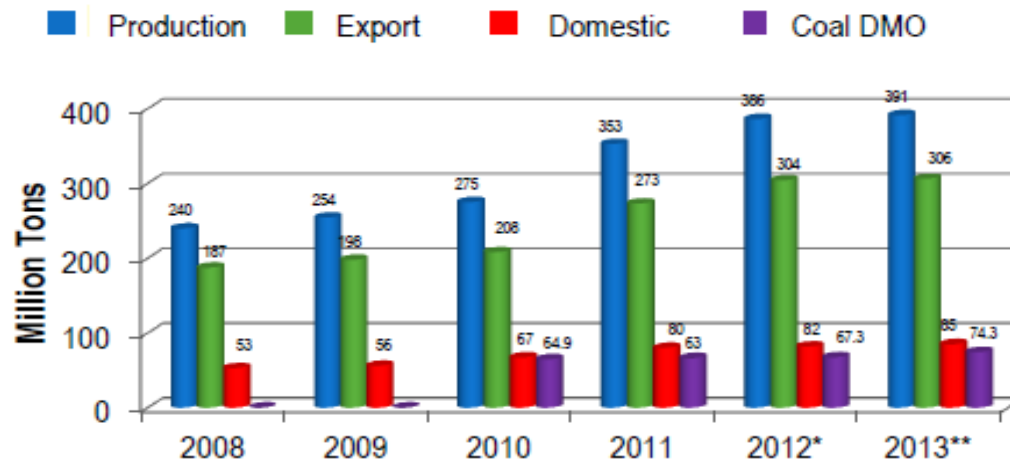


**Energy and Mineral Resources for the People's Welfare**

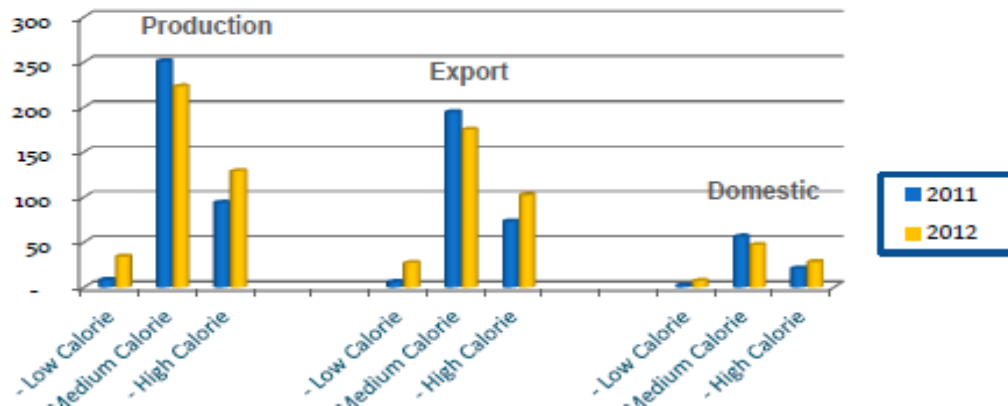
# COAL POTENCY



# PRODUCTION, EXPORT AND DOMESTIC



COAL PRODUCTION (2011-2012) BASED ON CALORIFIC VALUE



1. The percentage of domestic demand of coal is lower when compared with export

2. The coal is still treated as commodity to achieve state income target

# COAL PRODUCERS AND EXPORTERS

Major Coal Producers		
Country	Production - Mt	Prod'n %
China	3,050	44
USA	973	14
India	521	8
Australia	409	6
Russia	298	4
Indonesia	333	5
South Africa	330	5
Germany	184	3
Poland	135	2
Kazakhstan	102	1
Colombia	72	1
Canada	63	1
<b>World</b>	<b>6,941</b>	

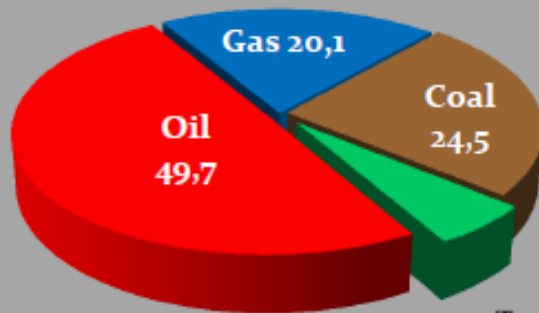
6<sup>th</sup> coal producer

Major Seaborne Exporters		
Country	Exports- Mt	Export %
China	21	2
USA	50	6
Australia	299	33
Russia	93	10
Indonesia	275	30
South Africa	69	8
Colombia + Ven	76	8
Canada	27	3
<b>World</b>	<b>910</b>	<b>100</b>

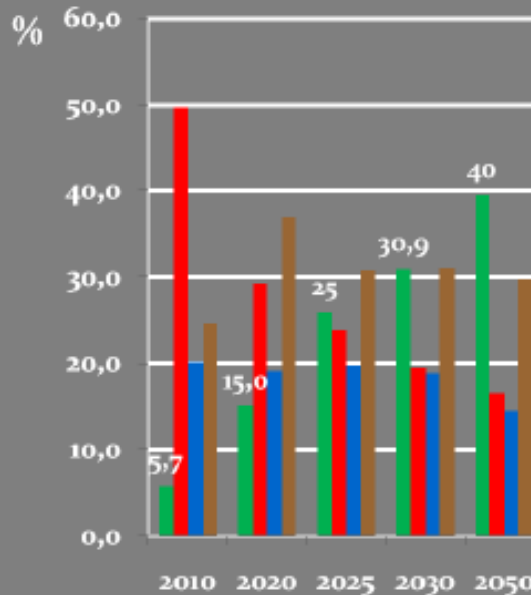
2<sup>nd</sup> coal exporter

# NATIONAL ENERGY MIX PLANNING

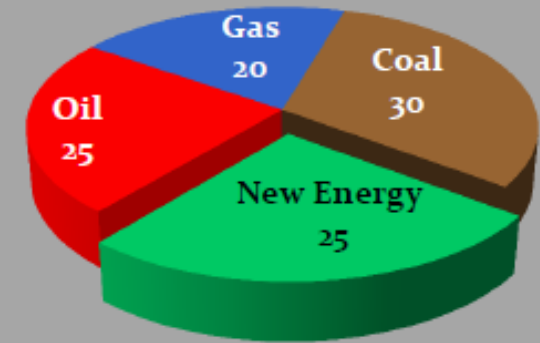
2010



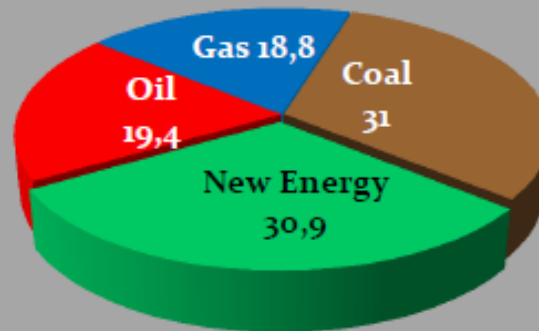
Oil (Red) Coal (Brown)  
Gas (Blue) New Energy (Green)



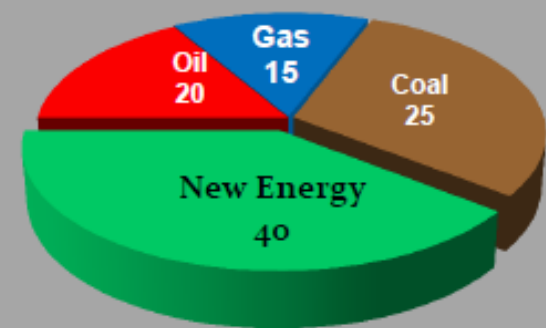
2025



2030



2050



Note:  
New Energy:  
(water, geothermal, biomass,  
waste, biofuel, solar, wind,  
nuclear)

**Constitution**

**UUD**

**Legislation**

**LAW**

Article 33 of the Indonesia's 1945 Constitution



Law No. 4/2009 Regarding Mineral and Coal Mining  
(to replace Law No. 11/1967)



**REGULATION (FRAMEWORK)**

**GOVERNMENT  
REGULATION**

1. Government Regulation No 22/2010 Regarding Mining Zone
2. Government Regulation No 23/2010 Regarding Mineral and Coal Enterprises Activity
3. Government Regulation No 55/2010 Regarding Supervising and Controlling Mining Activity
4. Government Regulation No 78/2010 Regarding Reclamation and Post mining

**PRESIDENT  
REGULATION**

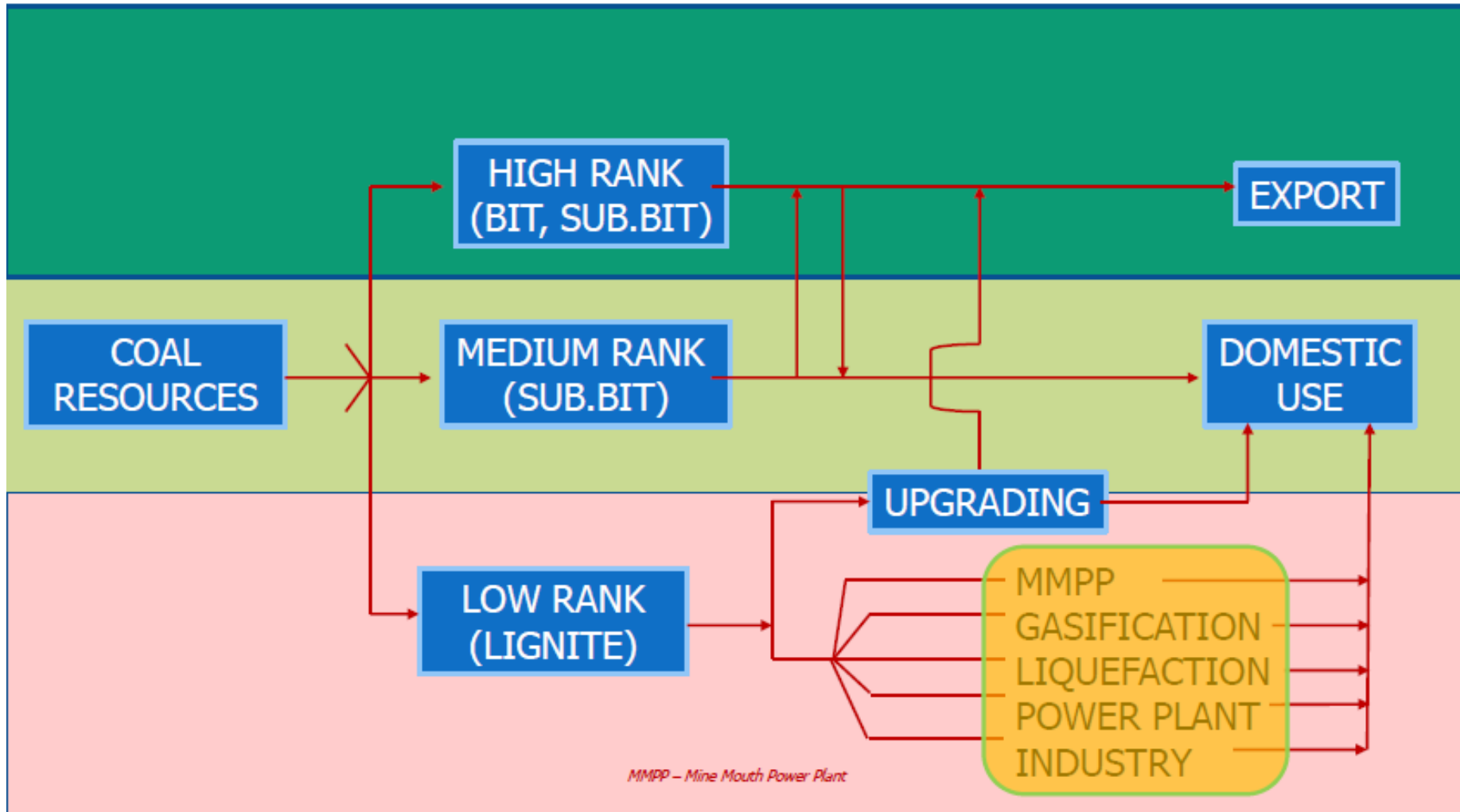
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**MINISTER  
REGULATION**

1. Minister Regulation No 28/2009 Regarding Service Mining Company
2. Minister Regulation No 34/2009 Regarding DMO Obligation for Mineral and Coal
3. Minister Regulation No. 17/2010 Regarding Mineral and Coal Price and Sales
4. Ministry Regulation No. 12/2011 Regarding Procedure of Determination Mining Business Area and Mining Area Information System
5. Mnister Decree No.0617.K/32/MEM/2011 regarding Coal Pricing for PLN's Power Plants Operation
6. Minister Decree No.1991.K/30/MEM/2011 regarding Determination of Domestic Coal Demand and Minimum Procentage of Domestic Coal Sales Year 2012
7. Minister Regulation No. 7/2012 amanded by No. 11/2012 regarding Mineral Value Added through Mineral Processing and Refining



# POLICY STRATEGY OF COAL



# Plans and Programs on CCT

- ❑ Utilization of low rank coal (LRC) :
  - Coal to Liquid
  - Coal gasification
  - Mine-mouth power plant
  - Upgrading Brown Coal (UBC)
  - Coal Water Mixture (CWM)
- ❑ Study on Integration of Lignite Gasifier into Fertilizer Plant using TIGAR Technology has been carried out and it was feasible to integrate lignite gasifier into existing fertilizer plant in PT Pupuk Kujang, Cikampek.
- ❑ Develop Coal to liquid in Bontang, East Kalimantan (FS Stage), coal to ethanol, coal to gas in Pendopo, South Sumatera (FS Stage), Coal Up Grading in Pendopo, South Sumatera (commercial plant).

## CCT Technology for Coal Fired Power Plants \*)

### USC

#### Matured technology to achieve low electricity costs & low GHG emissions

- Proven and already commercialized technology
- Introduced all around the world
- Can utilize low rank coal with above average ash melting point
- Economic superiority to SC
- Lower GHG emission compared to SC

### IGCC

#### Promising technology to achieve low electricity cost, lower GHG emissions & LRC utilization

- Technology yet to be commercialized
- Will be introduced at the beginning of 2020s in commercial base in the world
- Promising technology for low rank coal with low ash melting point
- Economic superiority to SC and USC
- Lower GHG emission compared to SC & USC

### Target for introduction of USC and IGCC in Indonesia

- USC should be introduced for next new coal fired power plant project (2016)
- IGCC will be introduced around 2025, considering the development situation in the world

\*)Studied by JICA: 2011



# Thank you

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