



# **“Thai’s Perspective on Power Import from Myanmar”**

by

**Dr. Jiraporn Sirikum**

**Assistant Director, System Planning Division – Generation**

**System Planning Division**

**Electricity Generating Authority of Thailand (EGAT)**



**ERI-PARI Joint Workshop**

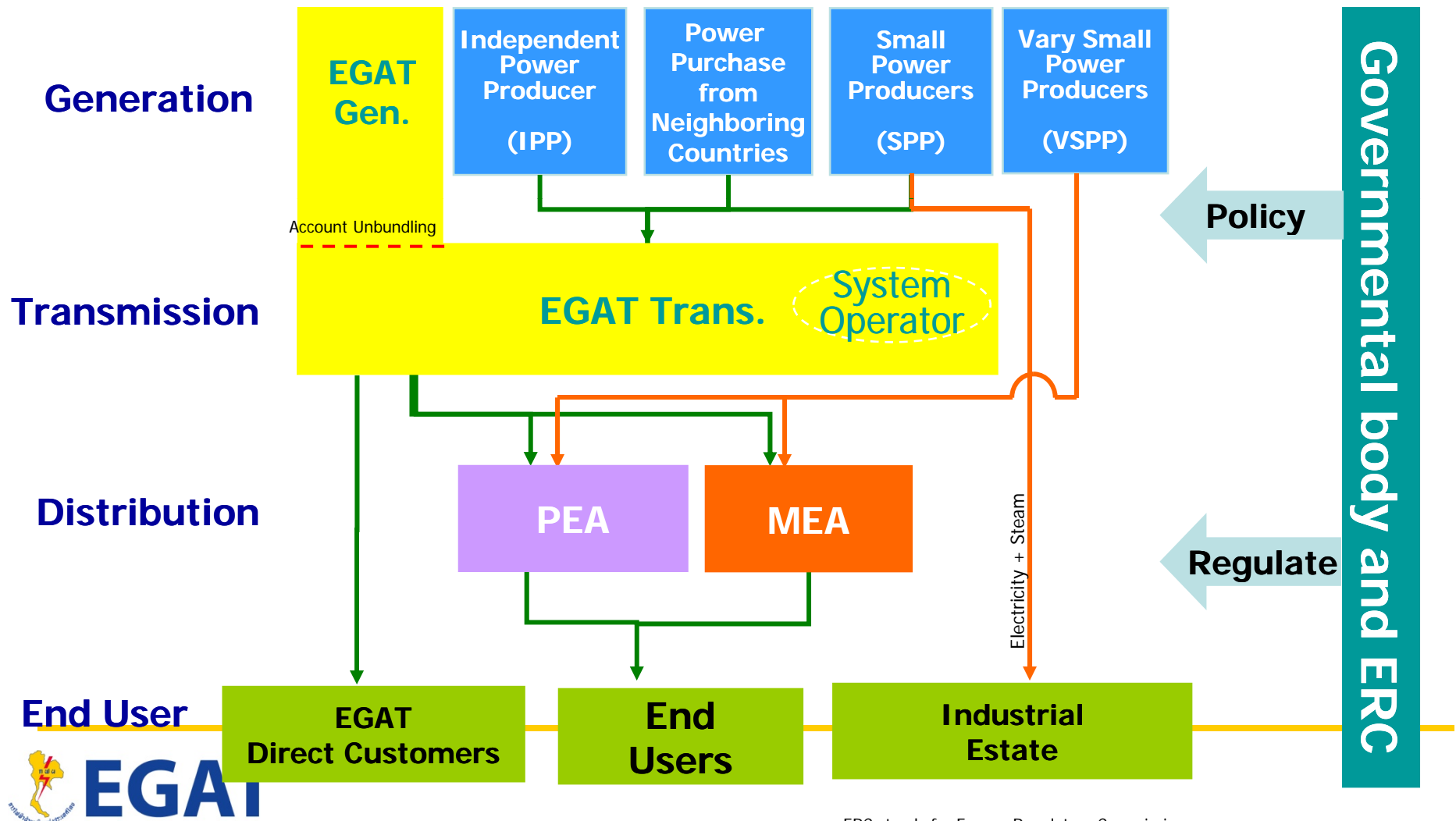
**The Evolving Energy Relationship between Thailand and Myanmar: A View of Thailand**

**Energy Research Institute, Chulalongkorn University**

**16 December 2013**

# Thailand Electricity Supply Industry (ESI) Structure

## Enhanced Single Buyer (ESB) Model



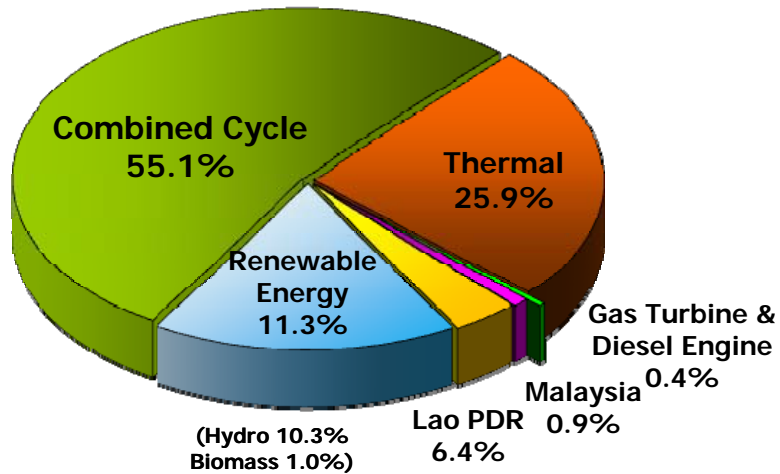
ERC stands for Energy Regulatory Commission

# Current Situation of EGAT Power System

# Current Status of EGAT's System

(as of 30 June 2013)

## Contract Capacity



Peak Demand  
(16 May 2013)

26,598.1 MW

Contract Capacity  
(30 June 2013)

33,237.0 MW

Energy Production & Purchase

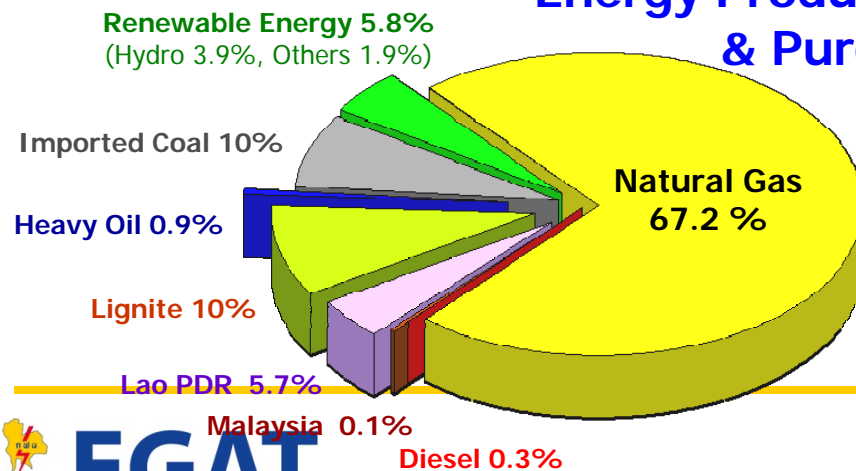
88,367 GWh \*

Energy Consumption

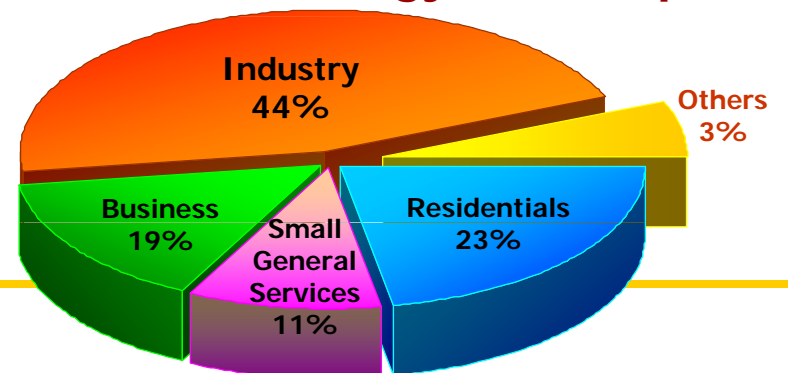
83,012 GWh \*

\* Preliminary Figure: 1 January - 30 June 2013

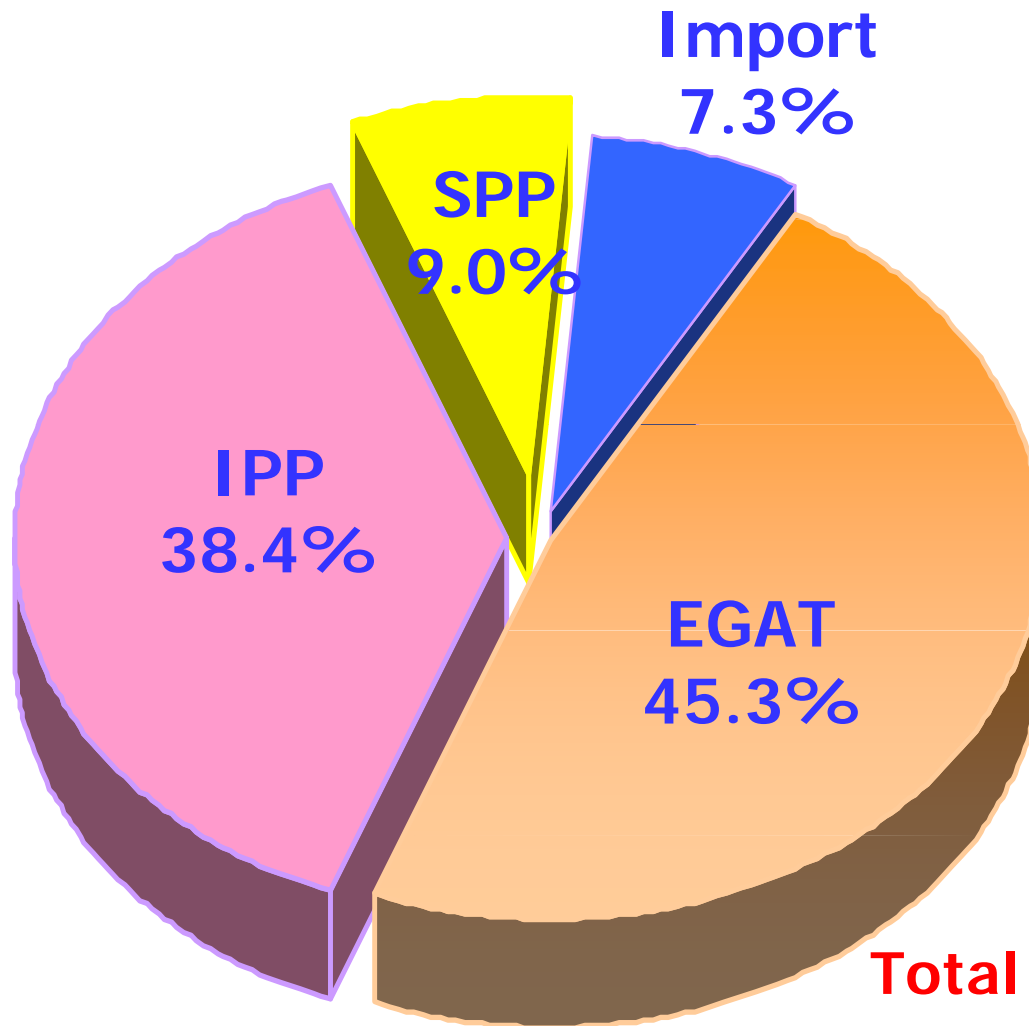
## Energy Production & Purchase



## Energy Consumption



# Generating Capacity (by owner)



**Total Contract Capacity**  
**33,141\* MW**

Remarks: \* As of 30 June 2013

# Thailand Power Development Plan 2012 – 2030 (PDP2010: Revision 3)

# Key Assumptions

## Load Forecast

- ✓ New load forecast model
- ✓ Long-term Thailand GDP projected by the NESDB.

## Energy Efficiency Plan (2011- 2030)

- ✓ Revised 20-years EEDP and incorporated in load forecasting

## Alternative Energy Development Plan (AEDP) 2012-2021

- ✓ New 10-years AEDP (2012-2021) of the DEDE

## Clean Energy and Efficient Utilization

- ✓ Greener PDP (Greenhouse Gas Emission – CO<sub>2</sub> Reduction)
- ✓ Energy Efficiency Promotion
- ✓ Power Generation from Renewable Energy

## Fuel Diversification

- ✓ Coal-fired power plants
- ✓ Nuclear power plants
- ✓ Power import from neighboring countries with proper share

# SUMMARY of PDP2010: Revision 3

(During 2012 - 2030)

Unit: MW

## Capacity During 2012 - 2030

PDP2010  
Rev3

Total Capacity as of December 2011	32,395
Total Added Capacity	55,130
Total Retired Capacity	-16,839
Grand Total Capacity at the End of 2030	<u>70,686</u>

## Numbers of Added Power Plants During 2012 - 2030

Coal-fired Power Plant (Clean coal Technology)	4,400 ( 6 Units)
Gas-fired Power Plant	25,451 (29 Units)
Nuclear Power Plant	2,000 ( 2 Units)
Gas Turbine Power Plant	750 ( 3 Units)
Cogeneration (SPP / VSPP)	6,374 / 102
Renewable Energy (SPP, VSPP, EGAT)	9,481
Power Purchase from Neighboring Countries	6,572



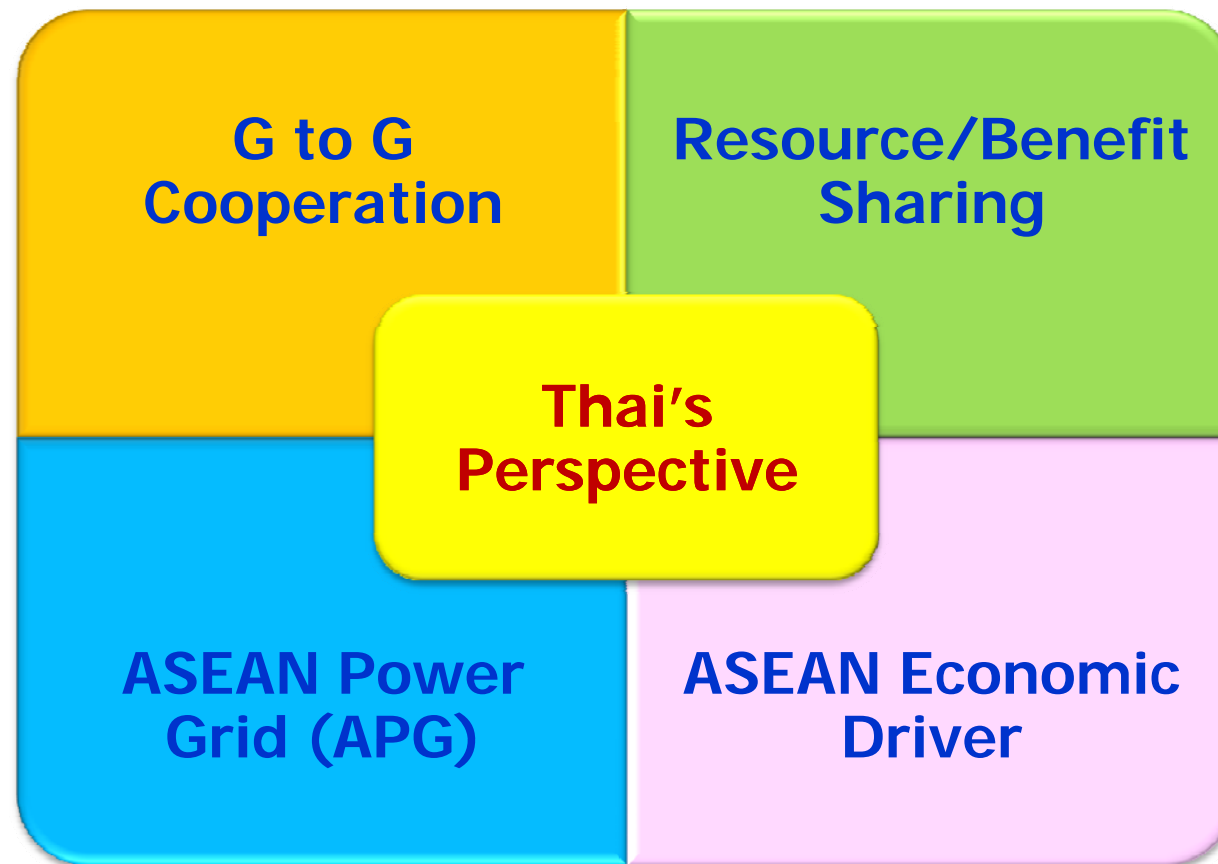
# Challenges of Thailand Power Development

# The Challenges

- *Power Demand*
- *Power System Security*
- *Diversification of Fuel Types and Fuel Sources*
- *Energy Efficiency and Energy Conservation*
- *Renewable Energy Development*
- *Moving towards Low-Carbon Society*
- *Resistance to New Power Plant Development*

# Thai's Perspective on Power Import from Neighbouring Countries

# Thai's Perspective on Power Imports



# Power Purchase from Neighboring Countries Status (2012 – 2019)

List of Projects	Capacity (MW)	SCOD	
<b>1. Completed Projects</b>			
1.1 Theun-Hinboun	220	Mar. 1998	} 2,110.6 MW
1.2 Houay Ho	126	Sep. 1999	
1.3 Nam Thuan 2	948	Apr. 2010	
1.4 Nam Ngum 2	596.6	Mar. 2011	
1.5 Theun-Hinboun - Expansion	220	Dec. 2012	
<b>2. PPA Signed Projects and under Construction</b>			
2.1 Hong Sa	1,473	Jun., Nov. 2015 - Mar. 2016	} 3,316 MW
2.2 Xe-Pian Xe-Namnoy	354	Feb. 2019	
2.3 Xayaburi	1,220	Oct. 2019	
2.4 Nam Ngiap 1	269	Jul. 2019	
<u>Total</u>	<u>5,426.6</u>		

# Power Cooperation (MOU) with Neighboring Countries

## Myanmar

MOU 4 July 1977

: **1,500 MW**

Potential : 39,720 MW

Source: Ministry of Power, India

\* MOU expired in 2010,  
Currently, the new  
MOU of 10,000 MW is  
under consideration.

## China

MOU 12 November 1998 : **3,000 MW**

Potential : 694,000 MW

source : wikipedia.org

## Lao PDR

MOU 22 December 2550 : **7,000 MW**

PPA signed : 2,693 MW

COD : 2,111 MW

Potential : 26,000 MW

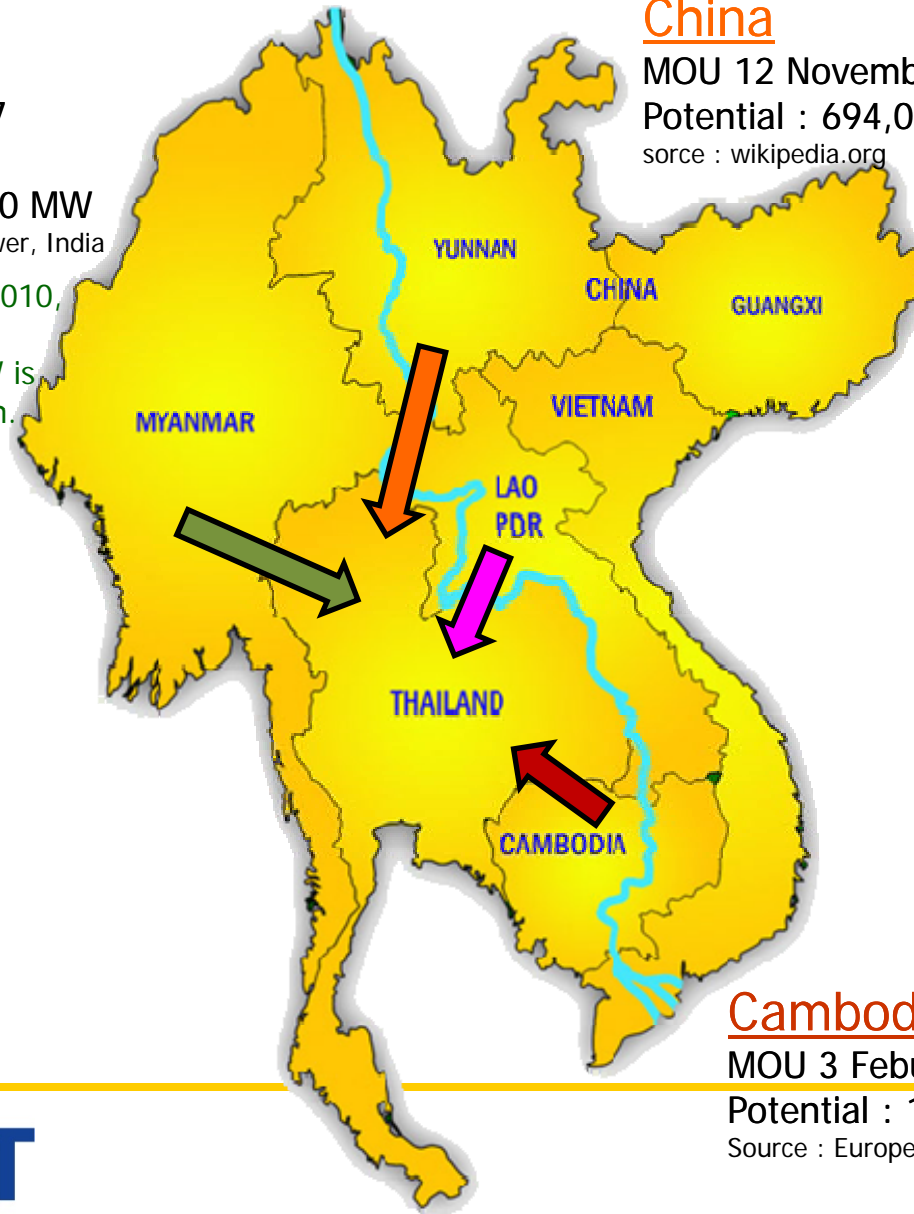
Source : United Nations

## Cambodia


MOU 3 February 2,000 : **N/A**

Potential : 10,000 MW

Source : European Commission



# Myanmar - Power Project Potential

Projects	Plant Type	Capacity (MW)
<b>Myanmar</b> 		
1. Hutgi	Hydro	1,190
2. Mai Khot	Thermal	390
3. Mong Ton	Hydro	6,300
4. Dawei	Thermal	1,800

# Long Term Planning on Thai's Power Imports

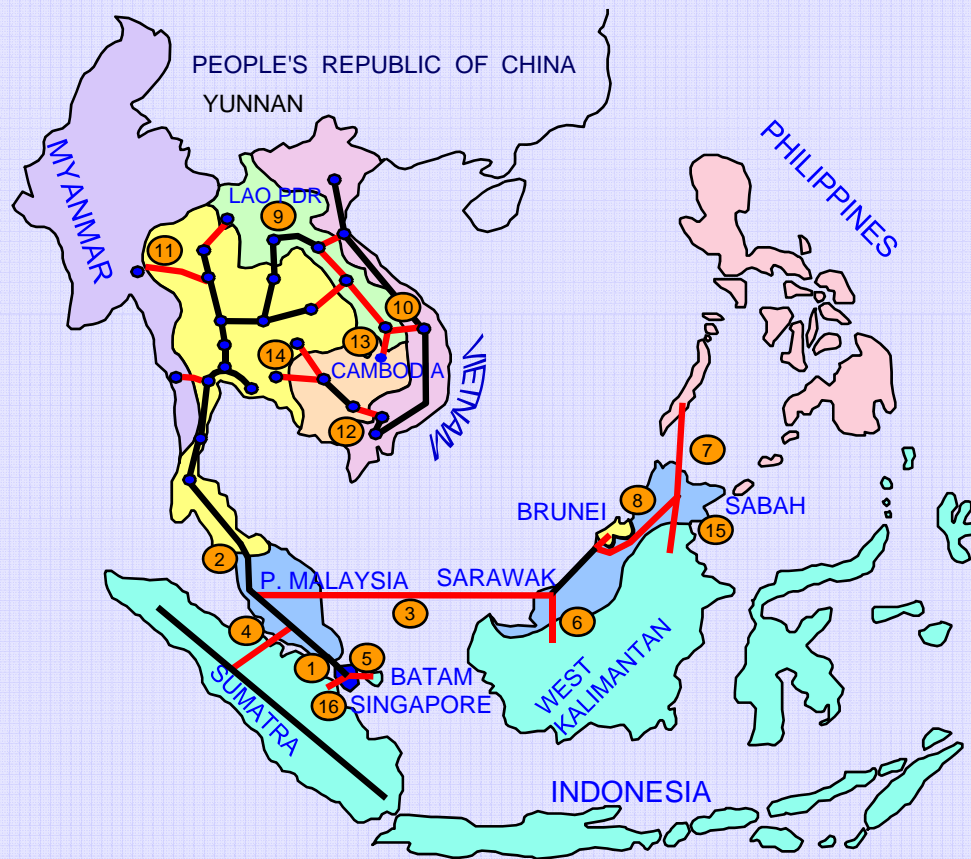
- Thai's Power import policy: 15% - 25% of total contract capacity with the ceiling of MOU signed with the Thai's neighbors.

Thai's Power Imports	Capacity (MW)
Existing (2012)	2,411
Planned * (2013 – 2030)	
2013 – 2020	3,352
2021 – 2030	3,000
<b>Total</b>	<b>8,763</b>

- \* This plan is done in accordance with the Thai's power import policy which is not greater than 15% of total capacity annually.



# Progress on ASEAN Interconnection Projects



Updated in Aug 2013

	<u>Earliest SCOD</u>
1) P.Malaysia - Singapore (New)	2018
2) Thailand - P.Malaysia	
• Sadao - Bukit Keteri	Existing
• Khlong Ngae - Gurun	Existing
• Su Ngai Kolok - Rantau Panjang	2015
• Khlong Ngae - Gurun (2 <sup>nd</sup> Phase, 300MW)	2016
3) Sarawak - P. Malaysia	2015-2021
4) P.Malaysia - Sumatra	2018
5) Batam - Singapore	2020
6) Sarawak - West Kalimantan	2015
7) Philippines - Sabah	2020
8) Sarawak - Sabah - Brunei	
• Sarawak - Sabah	2020
• Sarawak - Brunei	2012-2016
9) Thailand - Lao PDR	
• Roi Et 2 - Nam Theun 2	Existing
• Nakhon Phanom 2 - Thakhek - Theun Hinboun (Expansion)	Existing
• Mae Moh 3 - Nan 2 - Hong Sa	2015
• Udon Thani 3 - Nabong - Future Project	2019
• Ubon Ratchathani 3 - Pakse - Future Project	2018
• Khon Kaen 4 - Loei 2 - Xayaburi	2019
• Thailand - Lao PDR (New)	2015-2023
10) Lao PDR - Vietnam	2016-2020
• Xekaman 3 - Tranhmy	Existing
• Lao PDR - Vietnam (Ongoing)	2016-2020
<b>11) Thailand - Myanmar</b>	<b>2016-2025</b>
12) Vietnam - Cambodia	
• Chau Doc - Takeo - Phnom Penh	Existing
13) Lao PDR - Cambodia	2016
14) Thailand - Cambodia (New)	2015-2020
15) East Sabah - East Kalimantan	2020
16) Singapore - Sumatra	2020



**EGAT**

Power for Thai Happiness