



# **Developments in the ASEAN Energy Landscape**

**GCCIA 3<sup>rd</sup> Regional  
Power Trade Forum**

**Abu Dhabi**

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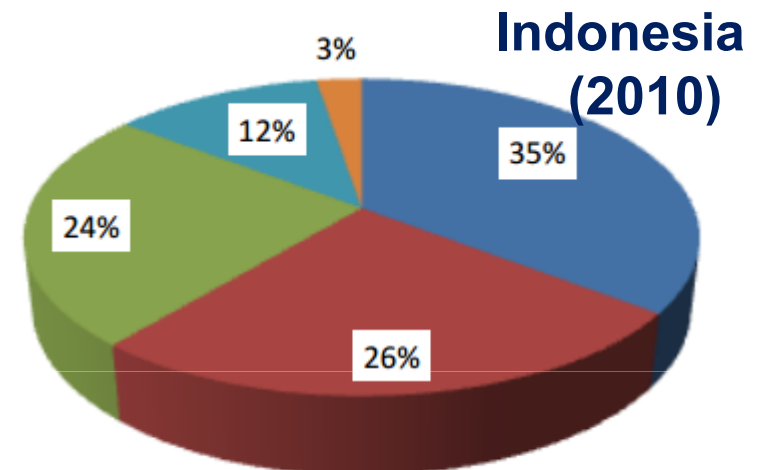
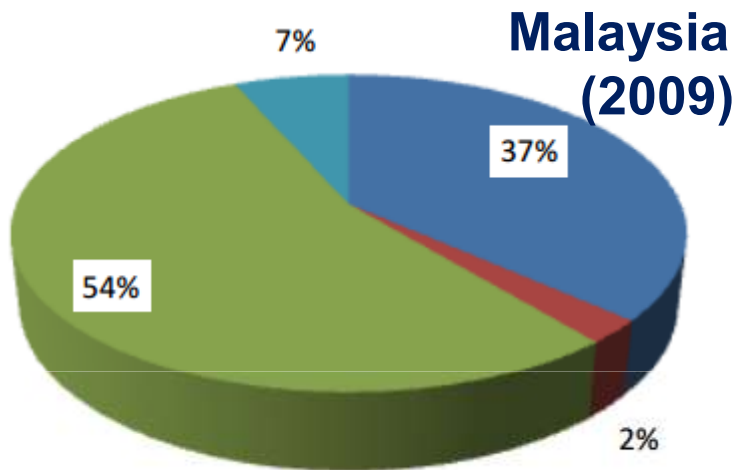
# Association of Southeast Asian Nations (ASEAN)

## ASEAN Member Countries

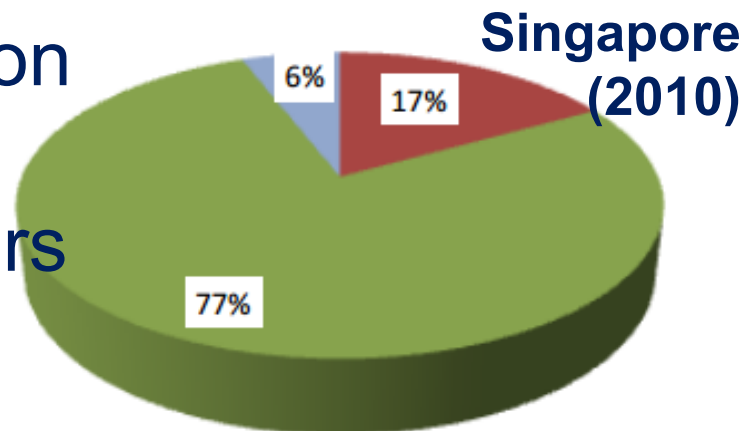


- 10 member nations
- 580 million people
- 8.7% of worlds population
- 28% without access to electricity
- Electricity demand increased from 323TWh in 2000 to 670TWh in 2012

# Generation Fuel Mix

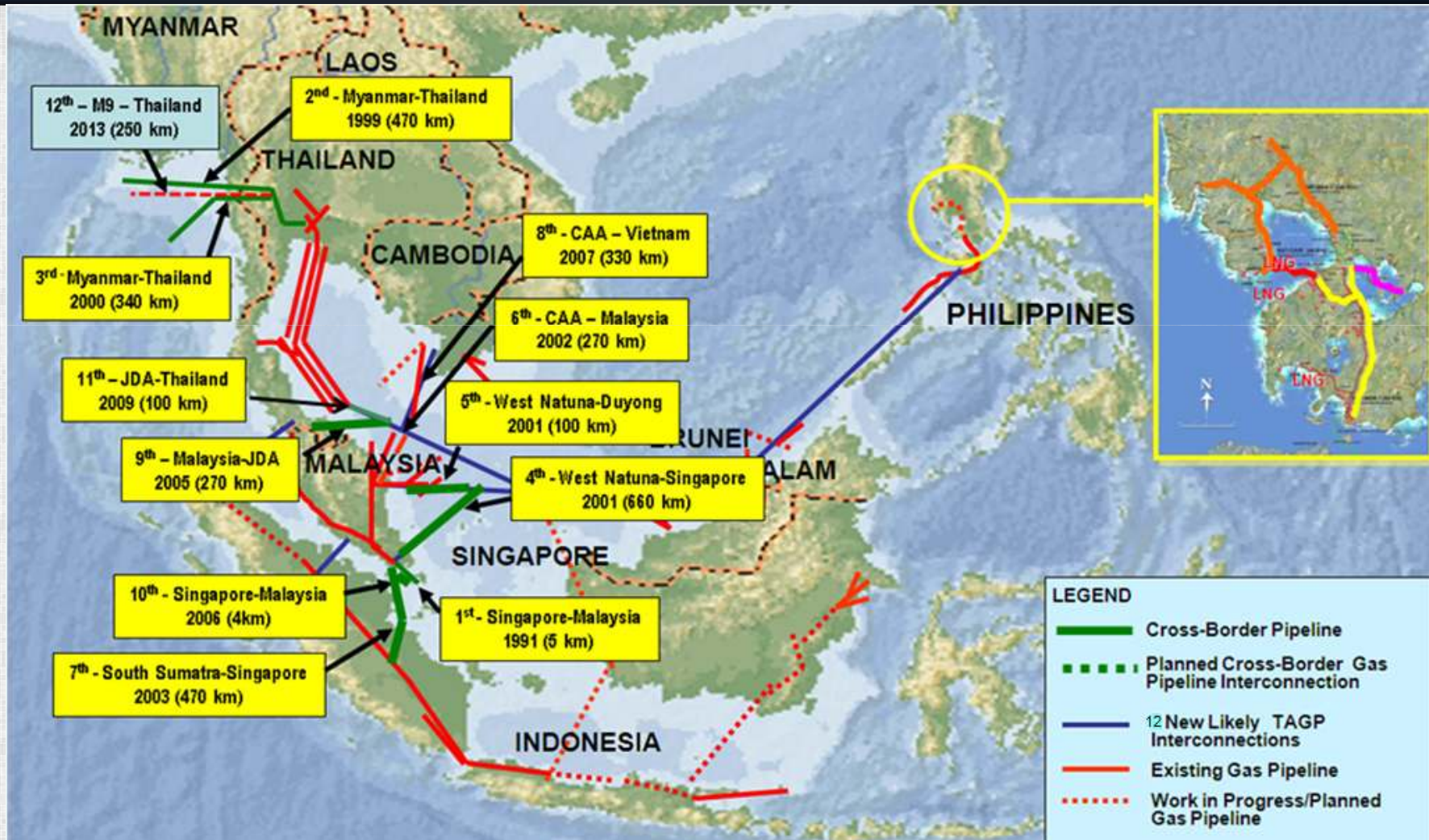


Varied generation fuel mix across ASEAN members



- Coal
- Oil
- Natural gas
- Nuclear
- Hydro
- Geothermal
- Others

# Trans-Asean Gas Pipeline Project



# ASEAN Power Grid (APG)

**MoU on 27 August 2007**

## **OBJECTIVE**

...(to develop) a common ASEAN policy on **power interconnection and trade**, and ultimately towards the realisation of the ASEAN Power Grid to help ensure greater regional energy security and sustainability on the basis of mutual benefit.

# APG Objectives

“Not only technical and economic aspects, but also cooperation and good relationship among the member countries”

- To promote more **efficient, economic, and secure** operation of power systems
- To **optimize the use of energy resources** in the region by sharing the benefits
- To **reduce capital** required for generation capacity expansion
- To **share experiences** among member countries

# APG Drivers

**Growing demand for energy** – forecasted to double every 15 years with population and economic growth

**Shrinking resources** – need to reduce dependency on fuel imports from non-ASEA countries

**Optimise energy resources and infrastructure** – potential for cost savings require high capital investments

Focus on meeting demand rather than efficient or renewable energy usage

# APG Benefits

## ASEAN Electricity Demand and Supply in 2025

### Total Generation Capacity

Individual Scenario	254,992 MW
Interconnection Scenario	252,979 MW
<b>Reduction</b>	<b>2,013 MW</b>
<b>Economic Exchange Capacity</b>	<b>3,000 MW</b>

### Cost/Benefit

Savings on Generation Costs	4,475 MUSD
Required Investments	3,687 MUSD
<b>Net Savings</b>	<b>788 MUSD</b>

Simulations by the EGAT (Electricity Generating authority of Thailand)



# Upcoming Challenges

- Harmonization of **technical standards** on Planning, Design, System Operation and Maintenance
- Setting up **legal and regulatory framework** for bilateral and cross-border power trade
- Sharing of functional area **knowledge and skills**
- Addressing differences:
  - **Fuel subsidies** – reducing and accounting for them in cross-border trades
  - **Uneven economic development** – different funding abilities and models

# Range of Market Developments

Country	Development
Singapore	Full Nodal Market
Philippines	Full Nodal Market
Vietnam	Generation-based bidding
Malaysia	Cost-based dispatch with competitive Independent Power Producers (IPPs) and state-owned gencos
Thailand	Enhanced single buyer model with EGAT (Electricity Generating Authority of Thailand) as largest generator and sole buyer

# First Bilateral Export

- April 2011 – Malaysia (Tenaga) approached Singapore to buy electricity to tide over capacity shortages due to gas feedstock supply issues
- Commercial deal struck with YTL Powerseraya to provide electricity for the month of May
- Electricity **not supplied from most efficient plants**, to minimise pricing impact on Singapore
- CEO John Ng noted “we hope it opens the doors for future exports and imports of electricity between the two countries on a longer-term basis”

# Import Consultation

Singapore Energy regulator held consultation in 2012 to import up to **600MW** per source country

Identified benefits:

- **Diversification** of fuel type and supply sources
- Access energy options **not available** to Singapore
- **Reduce land** to build power plants
- **Spur competition** and reduce electricity prices
- Contribute to the **ASEAN Power Grid vision**

No decision made at this juncture



**Thank you**