

ASEAN Oil and Gas Security

5th APEC Oil and Gas Security Network (OGSN) Forum
10 April 2019, Sendai, Japan

Presented by:
Christopher G. Zamora
ASEAN Centre for Energy



One Community
for Sustainable
Energy

Introduction

About the ASEAN Centre for Energy (ACE)



One Community
for Sustainable
Energy



Think Tank

Identifying and
surfacing innovative
solutions

Policies, Legal &
Regulatory Frameworks
and Technologies



Energy Data and Knowledge Hub

Provide a knowledge
depository for AMS

Policy and Research
Analytics

Energy
Database



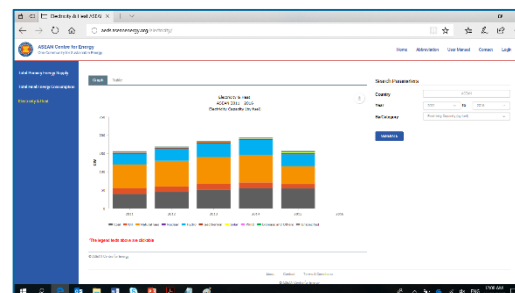
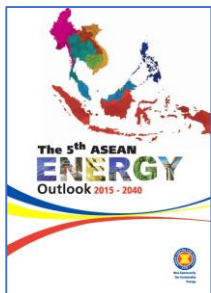
Catalyst

Unify and strengthen
ASEAN Energy Cooperation
and Integration

APAEC Activities,
including with
DPs/IOs

Secretariat

Research, publication, training, capacity building, workshop, policy exchange and recommendations, etc.

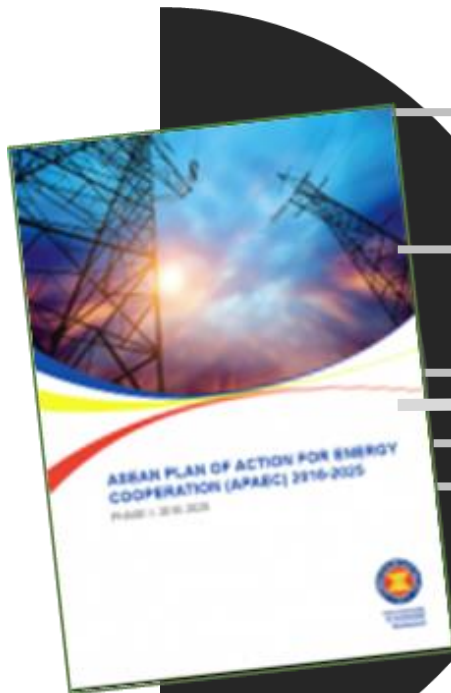


ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025: Phase I 2016 - 2020

“Enhancing Energy Connectivity and Market Integration in ASEAN to Achieve Energy Security, Accessibility, Affordability and Sustainability for All”



One Community
for Sustainable
Energy



ASEAN Power Grid

Trans-ASEAN Gas Pipeline

Clean Coal Technology

Energy Efficiency and Conservation

Renewable Energy

Regional Energy Policy and Planning

Civilian Nuclear Energy

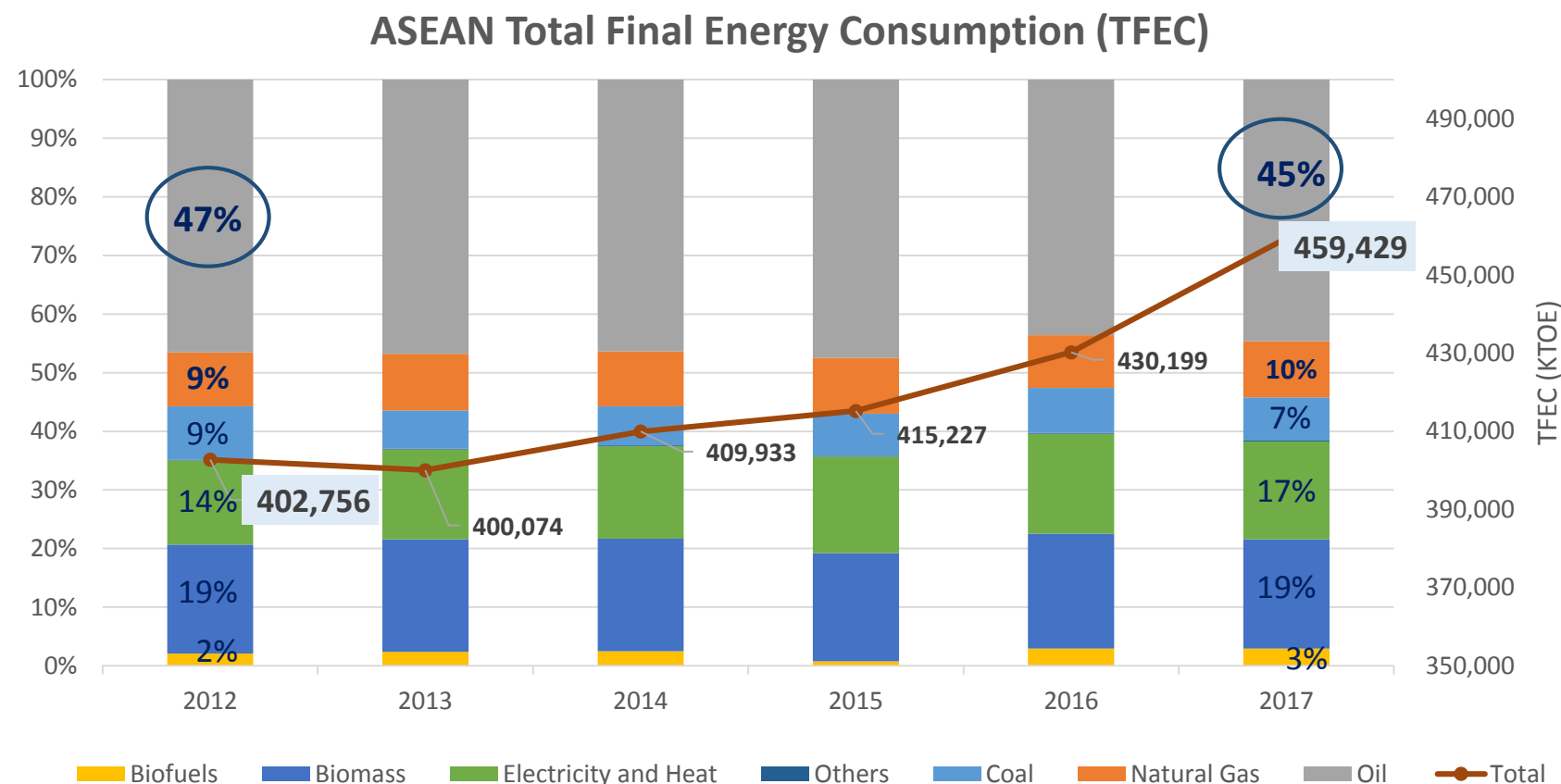


One Community
for Sustainable
Energy

Contents

- 1) Historical Oil & Gas Demand Situation (2012 – 2017)
- 2) Historical Oil & Gas Supply Situation (2012 – 2017)
- 3) Highlight of recent changes in Oil & Gas
- 4) Notable development on oil and gas policies (based on Report on Directives of the 14th AMEM+3)
- 5) Gas Advocacy White Paper & Opportunities in LNG
- 6) ASEAN Oil Stockpiling Status

Historical Oil & Gas Demand Situation (2012 – 2017)



Annual growth rate (CAGR):



1.5%



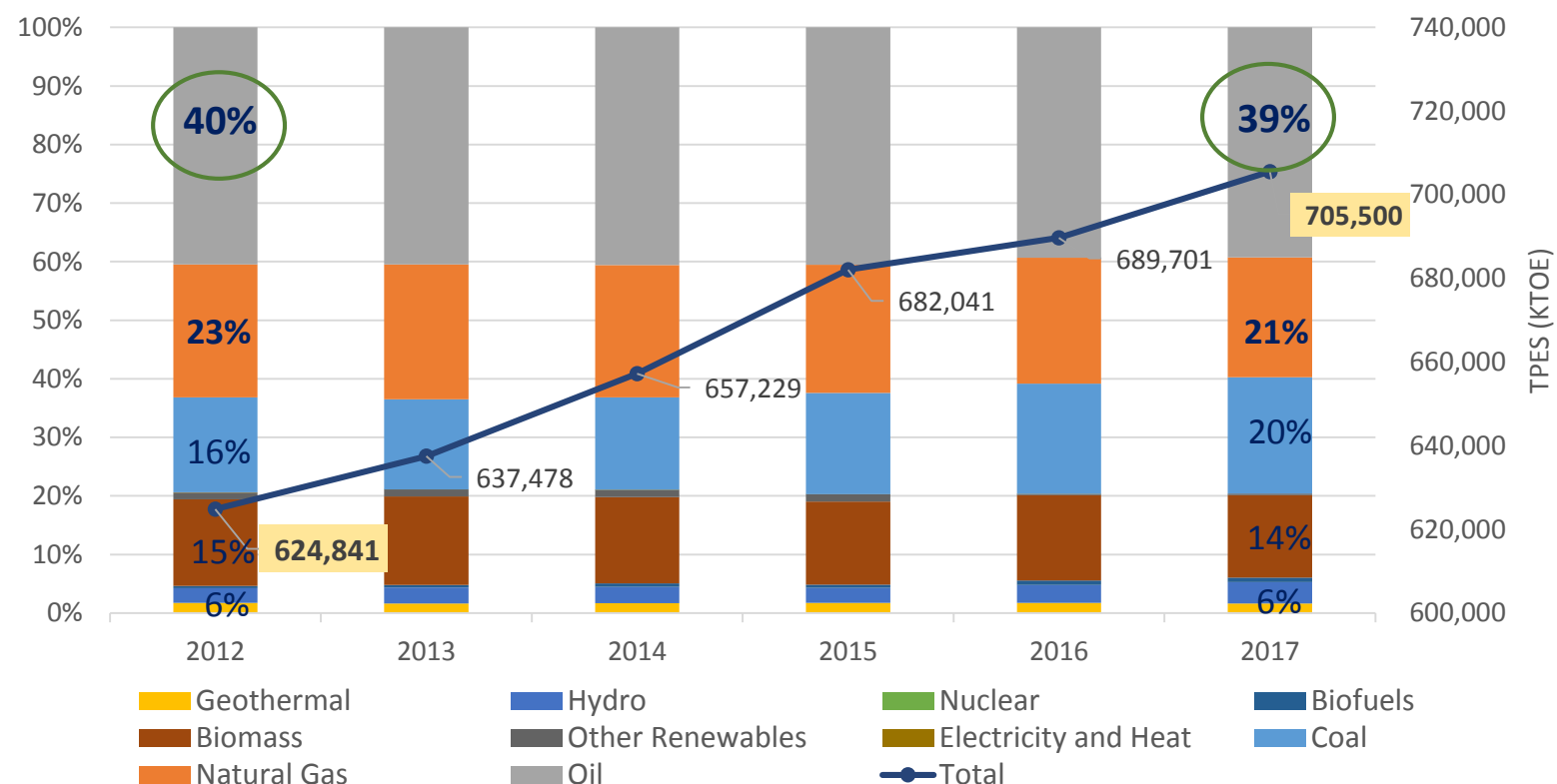
2.9%

TFEC : 2.2%

In ASEAN, oil demand has been increasing slower than gas. This leads to a 1% rise (9% to 10%) on gas demand share in total energy consumption, while oil share decreased 2% from 2012 to 2017. However, almost half of the energy demand still heavily rely on oil.

Historical Oil & Gas Supply Situation (2012 – 2017)

ASEAN Total Primary Energy Supply (TPES)



Annual growth rate (CAGR):



1.5%

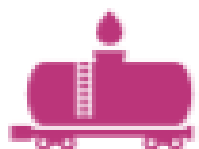


0.3%

TPES : 2.0%

In supply side, gas shown less growth than oil during 2012 – 2017 period. In 2017, both oil and gas shares in TPES dropped 1% and 2% from 2012 level, respectively.

Highlight of Recent Development in Oil & Gas



- self-sufficient in oil; both demand and supply have been rising with similar trend every year.



- Gas supply has been growing much slower than the demand growth during the past 5 years period → may raise energy security issue
- This high and continuous demand on gas is driven by massive gas utilization in industrial sector. There was a 7% increase of gas consumption during 2016 – 2017.



Future scenario?

Gas demand surpasses its supply



Imported gas increases
(potential market for LNG)



Require downstream infrastructure
for natural gas:
LNG terminal, regasification plant

Notable Development on Oil and Gas Policies



MoEn's Action Plans under Gas Plan 2015:

- ✓ G1: Slower natural gas consumption growth
 - Adjust pool pricing
 - Reduce reliance of natural gas under PDP
 - Speed up energy-saving under EEP
- ✓ G2: Maintain Indigenous gas levels
 - Manage concessions expiring in 2022-23
 - New E&P bidding rounds
 - Manage gulf of Thailand gas
- ✓ G3: Strategically manage LNG supply
 - Investigate regulatory LNG approach
 - Secure adequate LNG and allow for competition
- ✓ G4: Prepare infrastructure and competition approach
 - Follow up natural gas infrastructure plan
 - LNG terminal
 - Create gas business competition



- ✓ Domestic Oil Price Structure is considered and approved by two ministries including Ministry of Finance and Ministry of Industry and Commerce
- ✓ Oil market in Lao PDR is going under the open market policy of the government
- ✓ Lao Fuel and Gas Association (LFGA) contributes in maintaining of oil business. All oil companies shall be LFGA's member
- ✓ Lao State Fuel Company (LSFC) as a leading oil company and plays a significant obligation in stabilizing prices and fuel supply
- ✓ Some of Oil refineries are now under construction, covering 40% of oil consumption of the country
- ✓ Trans country Pipeline Viet Nam- Laos is under feasibility study process

Notable development on oil and gas policies



- ✓ National strategy for 2018-2019:
 - Increase Oil and Gas reserves : 10 - 30 million ton/year
 - Oil Production: 11-14 million ton/year
 - Gas Production: 10-14 bbcm/year
- ✓ Priority area development on water-deep and far-from-shore areas:
 - Tu Chinh Vung May
 - MaLay-Tho Chu basin
 - Phu Khanh basin
 - Song Hong basin
- ✓ The MOU between Vietnam and Lao Government: petroleum product pipeline and storage project from Quang Binh - Vietnam to Kham Muon – Lao
- ✓ Plans for 2018 – 2019:
 - Complete preliminary survey across the continental shelf.
 - Promote the studies and international cooperation in basic research and survey to Nonconventional petroleum, CBM (Coalbed methane), Gas hydrate
 - Maintain safe and effective exploitation of mines that have been and will be exploited and strictly control and accelerate the implementation, progress of developing mines; Step up assessment of developing mines and early put such these mines into exploitation.



One Community
for Sustainable
Energy

Report on Directives of the 14th AMEM+3

Destination Free Contract for ASEAN Region

- In LNG destination flexibility, LNG could be delivered to any region.
- In the new concept, AMS are treated as a single market which will have the right to deliver cargoes to LNG terminals within the region.
- LNG buyers in ASEAN could join together with LNG buyers in China, Japan and South Korea as a joint procurement
- The free destination clause requires significant support both from sellers and buyers.

Towards flexible LNG market in Asia: JOGMEC

- Shared the overview of its research projects for flexible LNG market, such as:
 - Process of increasing diversion,
 - Importance for LNG ships and their compatibility,
 - Importance of infrastructures and flexible contracts model

Country updates from AMS+3

- Upstream, downstream, and policy updates

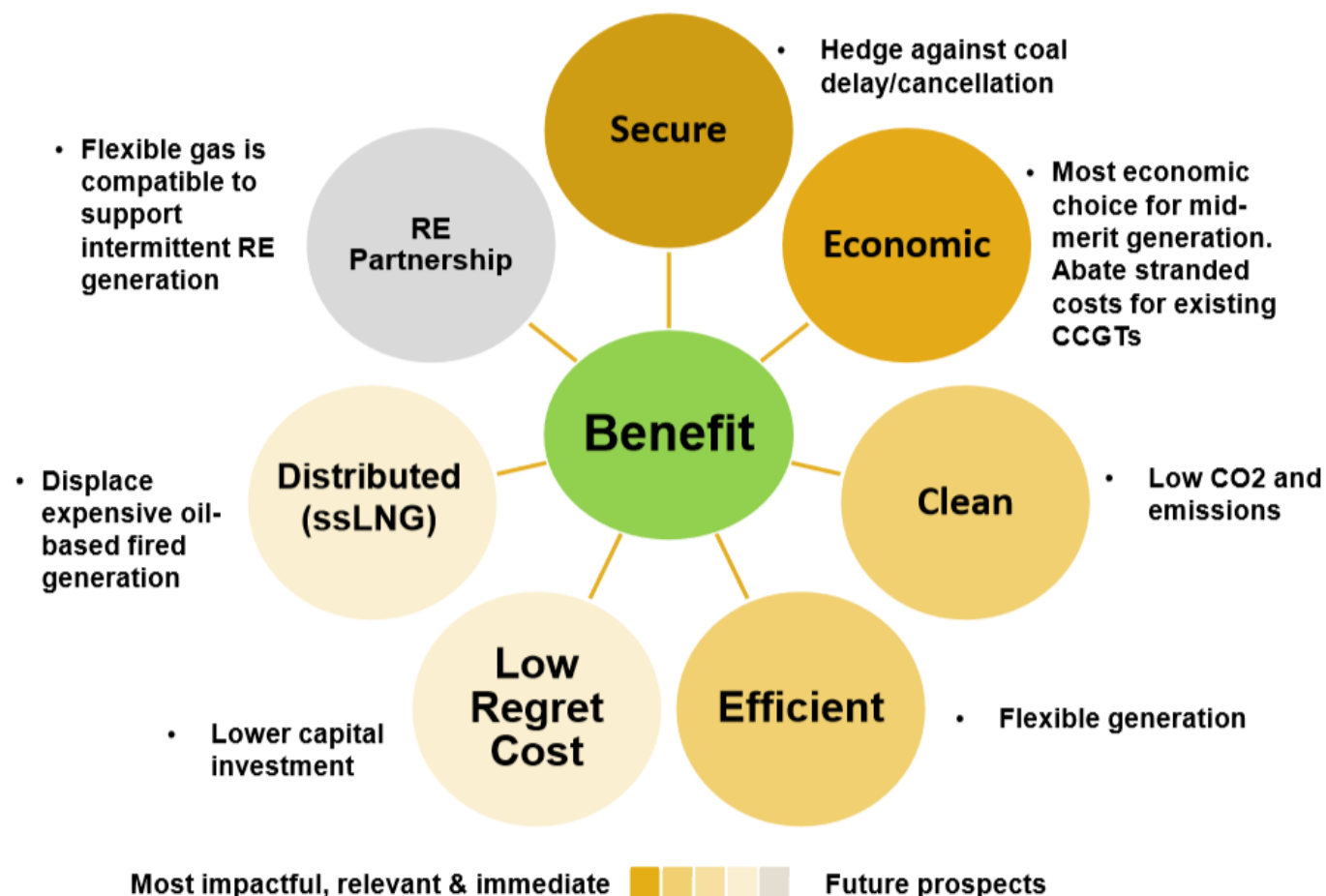
ASEAN member countries, with unique resource endowments and levels of development, are at different stages in their LNG importation readiness

Actions	Brunei	Cambodia	Indonesia	Laos	Malaysia	Myanmar	Philippines	Singapore	Thailand	Vietnam
Appropriate entities, regulations and framework established to facilitate LNG import	N/A			N/A						
Gas / LNG value chain development is coordinated				N/A						
Encourage third-party access	N/A			N/A						
Infrastructure development risks				N/A						

Preparedness Scale 

Common interests and objectives need to be developed among the various gas producing, consuming, exporting, and importing ASEAN member countries

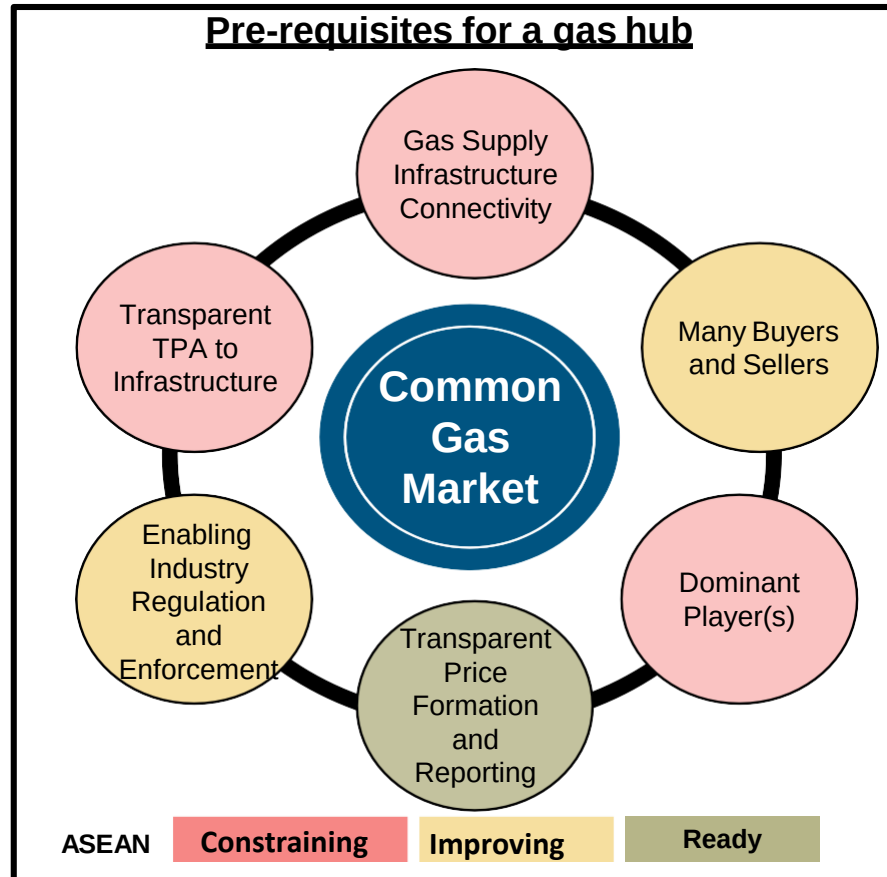
Gas and associated infrastructure can offer considerable benefits to ASEAN member countries by addressing all elements of the energy trilemma



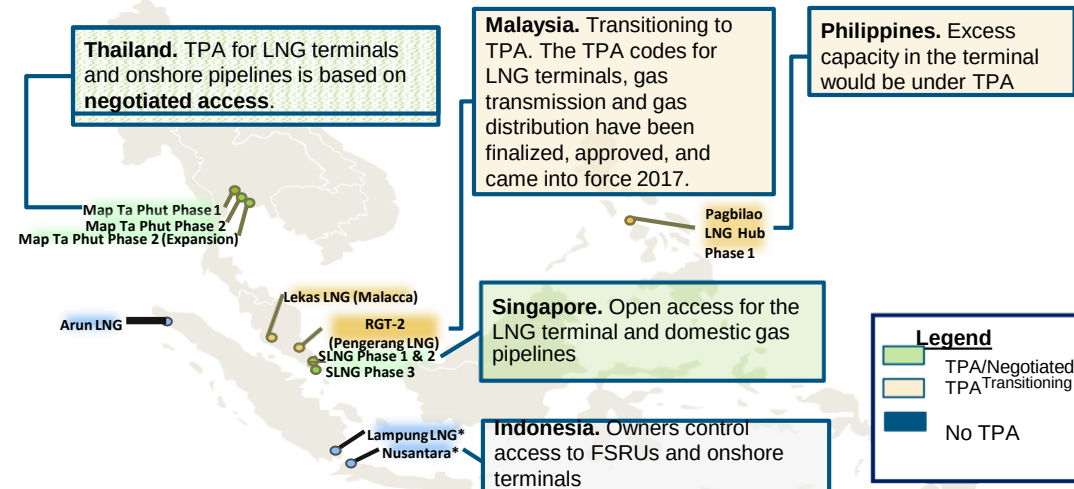
Gas Advocacy White Paper addresses the barriers and challenges that hinder natural gas infrastructure development

	Value of gas	Barriers/challenges	Mitigation measures
Increase Energy Security	Valuable hedge against coal delay	Lack of commercial framework to capture the hedging value	Fiscal or tax incentives for building gas infrastructure/CCGTs
	Valuable access to global gas market sourcing options	Uncertainty on upstream production; Difficulties of signing long-term mid-merit PPA	More clarity on future policies/regulation; Improve PPA framework for gas
Cost effective	Strategic and dispatch Flexibility	Rigid LNG contracts and terminal structure; Infrastructure constraints. Regulatory / commercial constraints Policy misalignments	Capability and capacity building; Less red tapes; regional cooperation etc Policy support Government guarantees
	Economical for mid-merit and peaking option		
Environmentally sustainable	Less carbon and non-carbon emission	No carbon tax and out-dated non-carbon emission regulation.	Tighten the non-carbon emission regulation for new coal; carbon tax
	Good compatibility with solar	Lack of commercial framework to realize this value	Fiscal or tax incentives like those provided for renewables

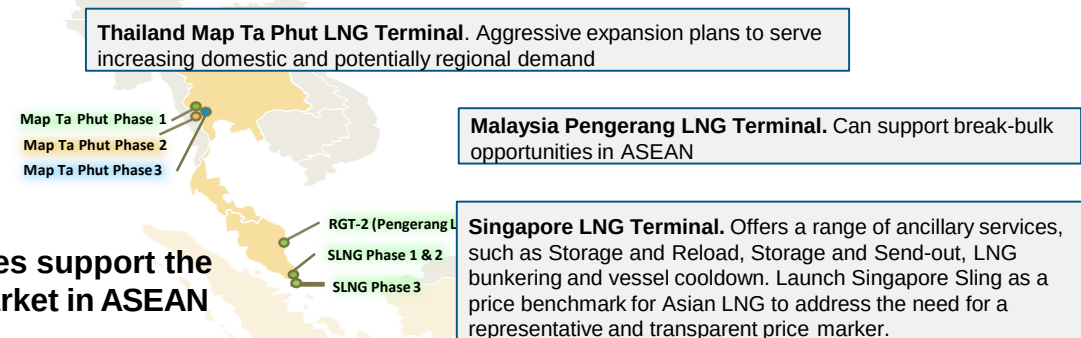
An ASEAN common gas market enable regional co-optimization of commercial and physical trades



Greater access to regional regasification terminals supports the establishment of a functioning common market

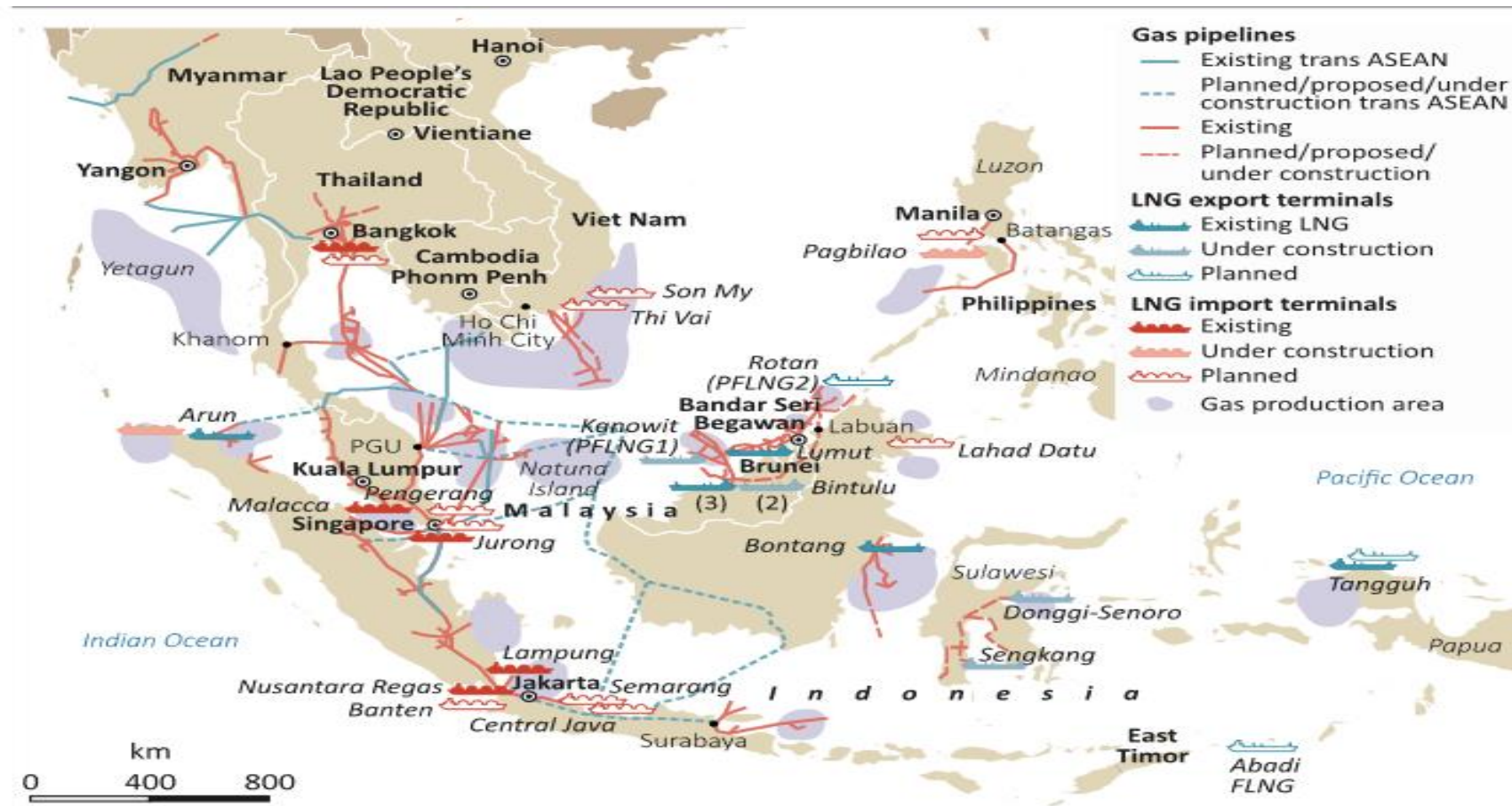


Appropriate ecosystem for gas exchanges, LNG bunkering and small scale LNG is essential for the evolution of ancillary services, trading market, and benchmark prices



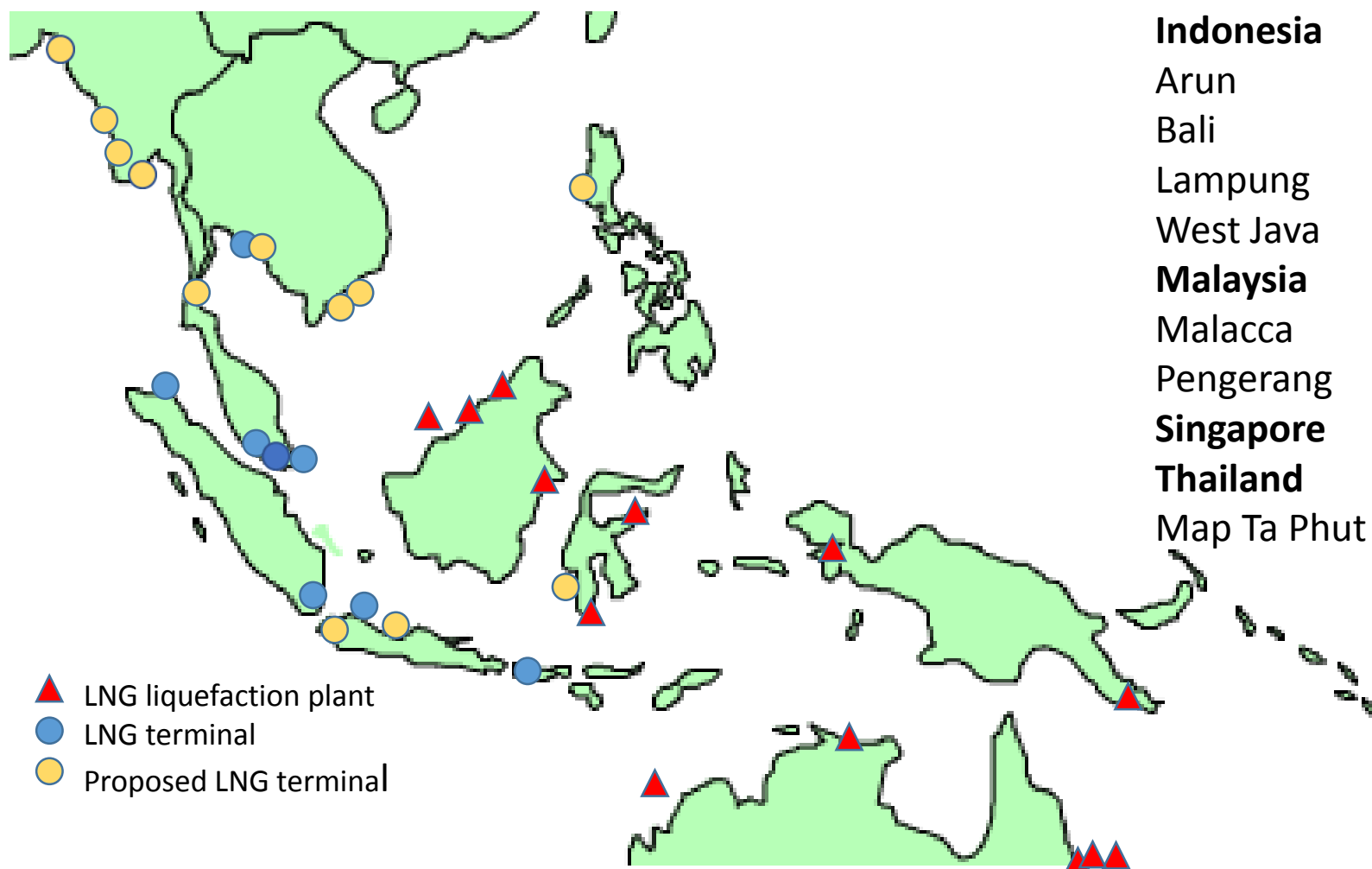
New wave of FSRU developments and gas pipelines support the development of a common gas market in ASEAN

A large increase in gas infrastructure is expected to increase flexibility in ASEAN natural gas markets



This map is without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries, and to the name of any territory, city or area.

SE Asia LNG Infrastructure



LNG terminals

Indonesia

Arun
Bali
Lampung
West Java

Malaysia

Malacca
Pengerang

Singapore

Thailand

Map Ta Phut

Liquefaction plants

Brunei LNG

Malaysia

Bintulu
FLNG Satu

Indonesia

Bontang
Tangguh
Donggi Senoro
Sulawesi

PNG LNG

*Substantial large scale
infrastructure to support
emerging small scale –
many supply hubs.*

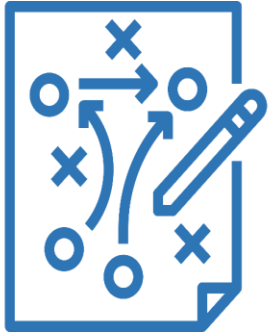


One Community
for Sustainable
Energy

ASEAN Oil Stockpiling Status

Countries										
• Gas and Oil products Stockpiling Policy	Yes	N/A	Yes	Yes	N/A	Yes	Yes	N/A	Yes	Yes
• Current Stock Standard (Days)	31	30	23	21	N/A	15-30	15-30	N/A	21,5	58,5
• Types of Stocks	Products	Products	Products & Crude	Products	N/A	Products	Products	N/A	Products & Crude	Products & Crude

Oil Stockpiling Development Challenges in ASEAN



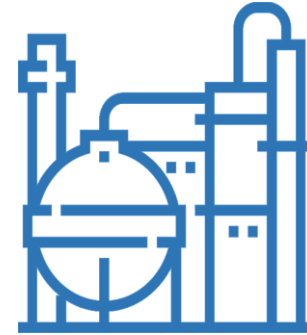
Oil Stockpiling Development Planning

- Policy on National Oil stockpiling
- Oil Stockpiling Plan
- Emergency Plan



Data & Information Collection

- Statistical data on energy supply and demand has not been well developed
- To understand the correct volume and location of inventory



Limited Storage Capacity

- Only Thailand and Singapore has large capacity of refinery and storage.
- Most countries could only cover the operational & commercial refinery.



Securing Financing

- Requires large amount of capital
- Difficulties to identify economic benefit

Thank you!
www.aseanenergy.org



[@aseanenergy](https://www.facebook.com/aseanenergy)



[@ASEAN_energy](https://twitter.com/ASEAN_energy)



**One Community
for Sustainable
Energy**