



# Natural Gas Outlook and Policy: A Perspective from **ASEAN Energy Transition**

UN ESCAP's Asia-Pacific Energy Week 2023: Policy Dialogue on the Role of Natural Gas in the Energy Transition in Asia-Pacific  
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**One Community  
for Sustainable  
Energy**



# Introduction

Established on 1 January 1999, the ASEAN Centre for Energy (ACE) is an intergovernmental organisation within the Association of Southeast Asian Nations' (ASEAN) structure that represents the 10 ASEAN Member States' (AMS) interests in the energy sector.



ACE shall accelerate the integration of **energy strategies** within ASEAN by providing relevant information and expertise to ensure the necessary energy policies and programmes are in **harmony** with the **economic growth** and the **environmental sustainability** for the region.



## Catalyst

To unify and strengthen ASEAN Energy Cooperation by providing:

- Platform for Sharing
- Policy Advisory
- Best Practices
- Capacity Building



## Knowledge Hub

To provide a knowledge repository for ASEAN Member States (AMS) and services through:

- Data Management
- Publication
- Dissemination



## Think tank

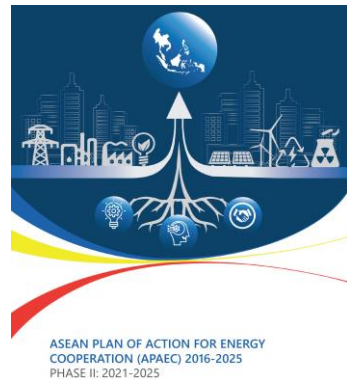
To assist AMS on research and identifying practical & specific solution on:








- Policies
- Legal & Regulatory Frameworks
- Technologies
- Innovative Solutions

# Regional blueprint for the energy cooperation in the ASEAN

## ASEAN Plan of Action for Energy Cooperation (APAEC) 2016-2025 Phase 2: 2021-2025

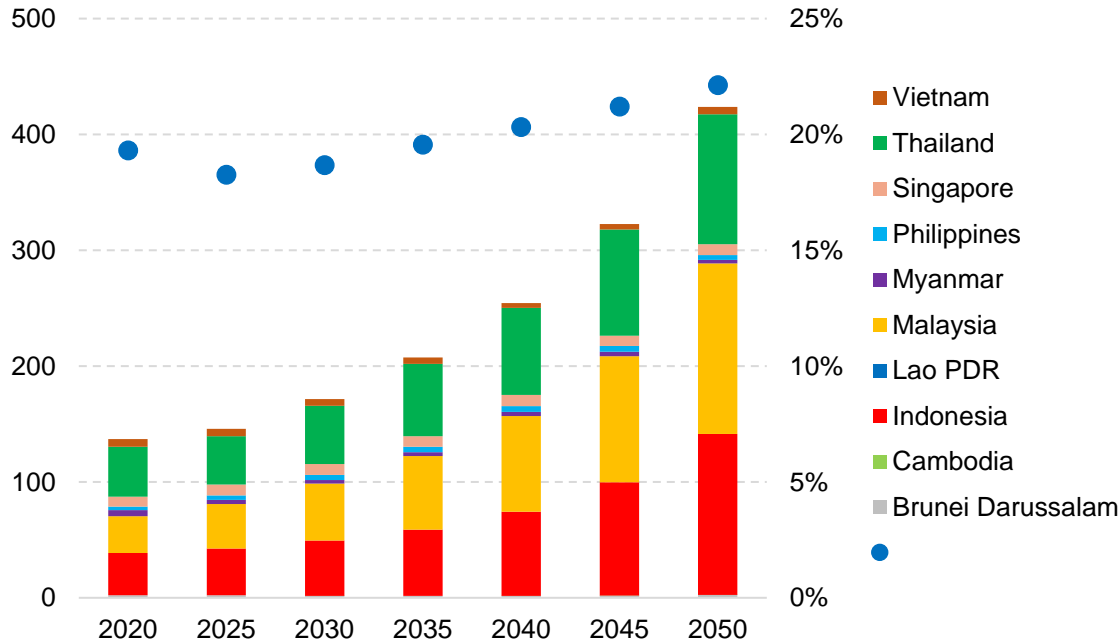
- Theme: “Enhancing Energy Connectivity and Market Integration in ASEAN to Achieve Energy Security, Accessibility, Affordability and Sustainability for All”.
- Sub-theme: “Accelerating Energy Transition and Strengthening Energy Resilience through Greater Innovation and Cooperation.”



 <p><b>ASEAN Power Grid</b></p>	<p>To expand regional multilateral electricity trading, strengthen grid resilience and modernisation, and promote clean and renewable energy integration.</p>	 <p><b>Energy Efficiency and Conservation</b></p>	<p>To reduce energy intensity by 32% in 2025 based on 2005 levels and encourage further energy efficiency and conservation efforts, especially in transport and industry sectors.</p>
 <p><b>Trans-ASEAN Gas Pipeline</b></p>	<p>To pursue the development of a common gas market for ASEAN by enhancing gas and LNG connectivity and accessibility.</p>	 <p><b>Renewable Energy</b></p>	<p>To achieve aspirational target for increasing the component of renewable energy to 23% by 2025 in the ASEAN energy mix, including through increasing the share of RE in installed power capacity to 35% by 2025.</p>
 <p><b>Coal and Clean Coal Technology</b></p>	<p>To optimise the role of clean coal technology in facilitating the transition towards sustainable and lower emission development.</p>	 <p><b>Regional Energy Policy and Planning</b></p>	<p>To advance energy policy and planning to accelerate the region’s energy transition and resilience.</p>
		 <p><b>Civilian Nuclear Energy</b></p>	<p>To build human resource capabilities on nuclear science and technology for power generation.</p>

# Natural gas domestic demand in ASEAN is projected to grow, magnifying import dependence as indigenous production declines

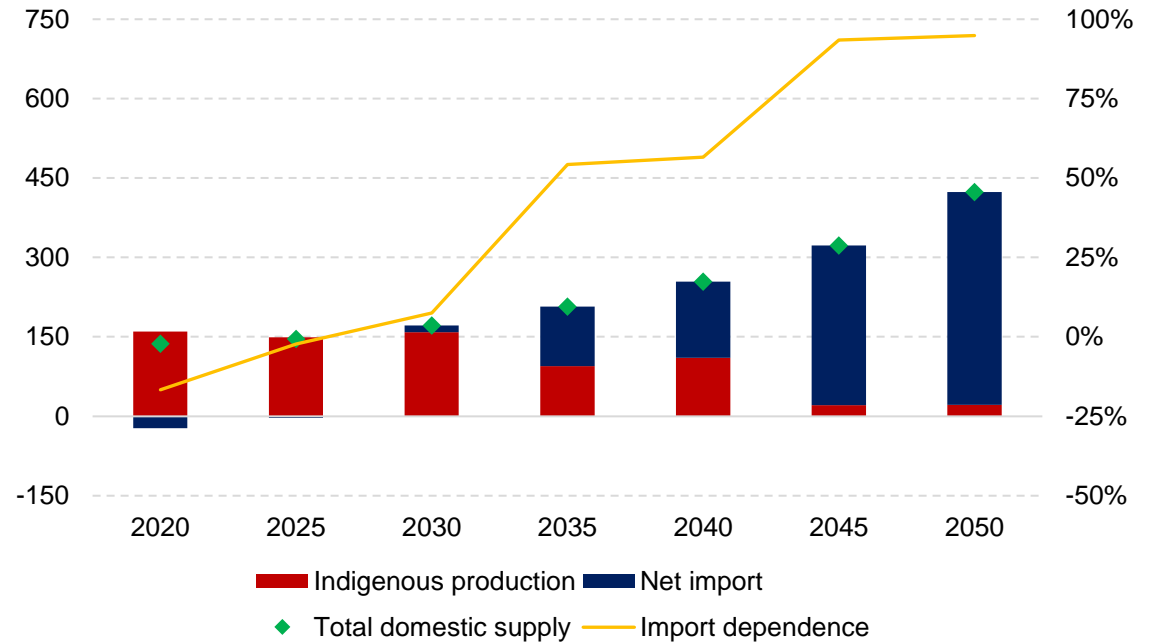
Projected natural gas demand (Mtoe) and gas dependence (%)



Data source: ASEAN Centre for Energy – 7<sup>th</sup> ASEAN Energy Outlook (AEQ7)

The APS scenario of the 7<sup>th</sup> ASEAN Energy Outlook report projected an increase of natural gas demand in Southeast Asia by 25% in 2030 and 209% in 2050 compared to the 2020 level. Demand for natural gas in Indonesia and Malaysia will grow faster than other AMS (4.5% and 5.2% annually, respectively). Overall, the relative contribution of natural gas to meeting energy needs will account for more than one-fifth (22%) of the total energy demand in 2050.

Natural gas domestic supply (Mtoe) and import dependence (%)

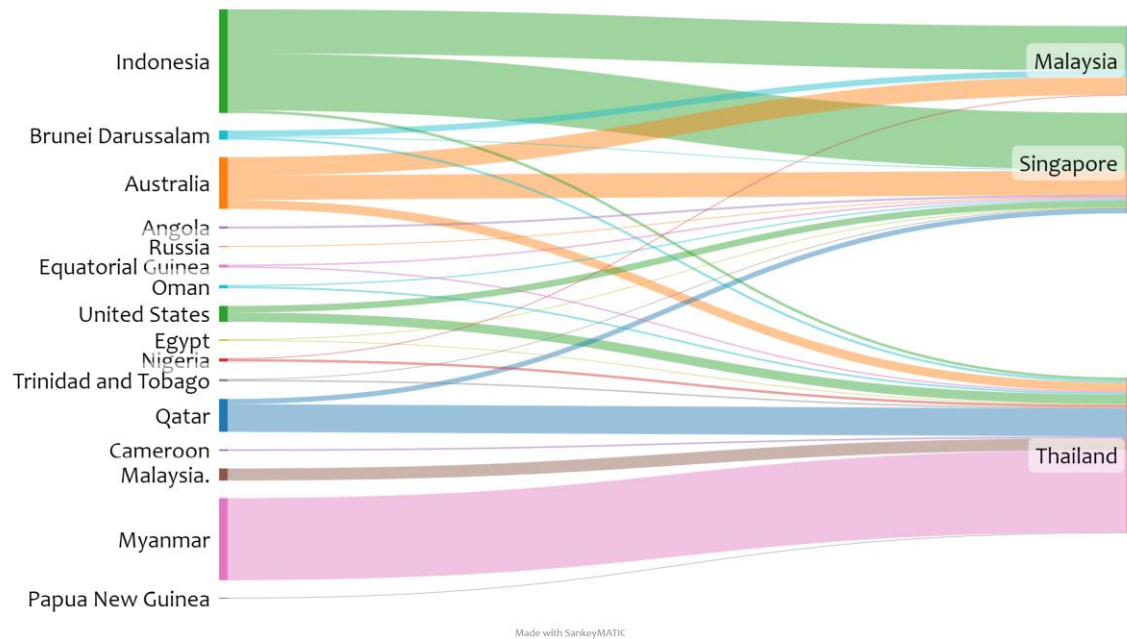


Data source: ASEAN Centre for Energy – 7<sup>th</sup> ASEAN Energy Outlook (AEQ7)

The growing demand for natural gas is followed by a persistent decline in domestic production. Consequently, Southeast Asia is projected to become a net importer of natural gas by 2025 under the APS scenario. By 2045, the import dependence on natural gas will shoot to 93%, potentially risking the ASEAN member states supply security issues of natural gas.

# Dependence on natural gas drives AMS to search of new sources of natural gas supply by building more LNG import terminals

Flows of natural gas imports by Southeast Asian countries in 2021

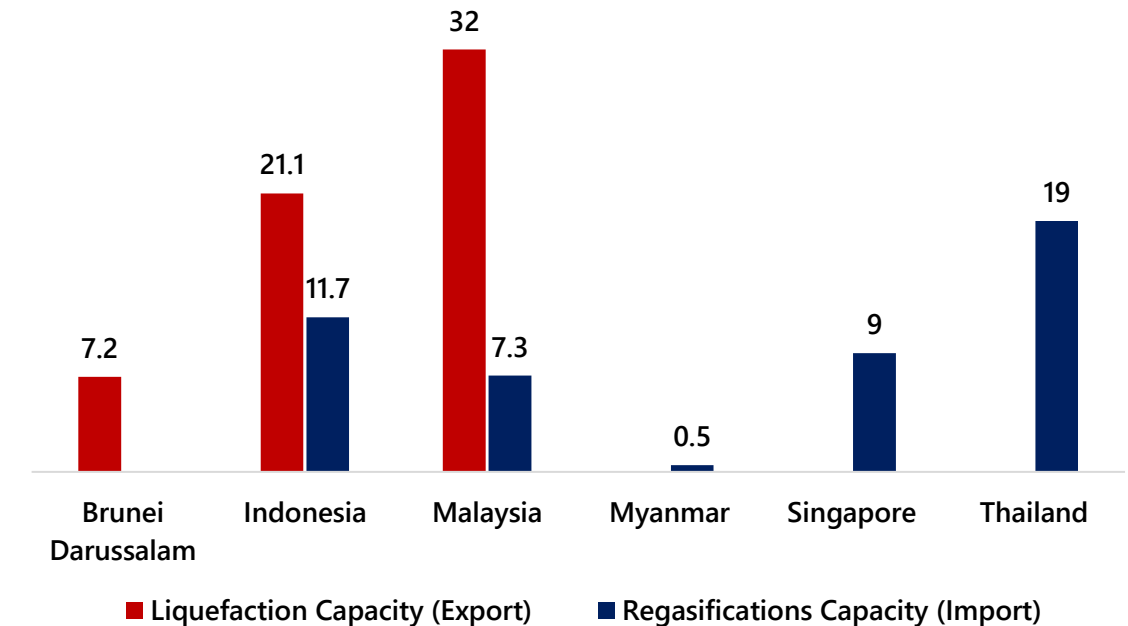


Data source: International Energy Agency (IEA)

Most imports by Malaysia and Singapore comes from **Indonesia** through pipelines. Meanwhile, Thailand sources its natural gas imports from **Myanmar** through the same means. However, with the **declining natural gas production** in Indonesia and Myanmar, these importers are increasingly looking for **diversifying their import sources**, with LNG exporters such as **Australia, Qatar, and the US** starting to expand their market shares in Southeast Asia.

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Installed capacity of liquefaction and regasification facilities by 2022 (Mtpa)

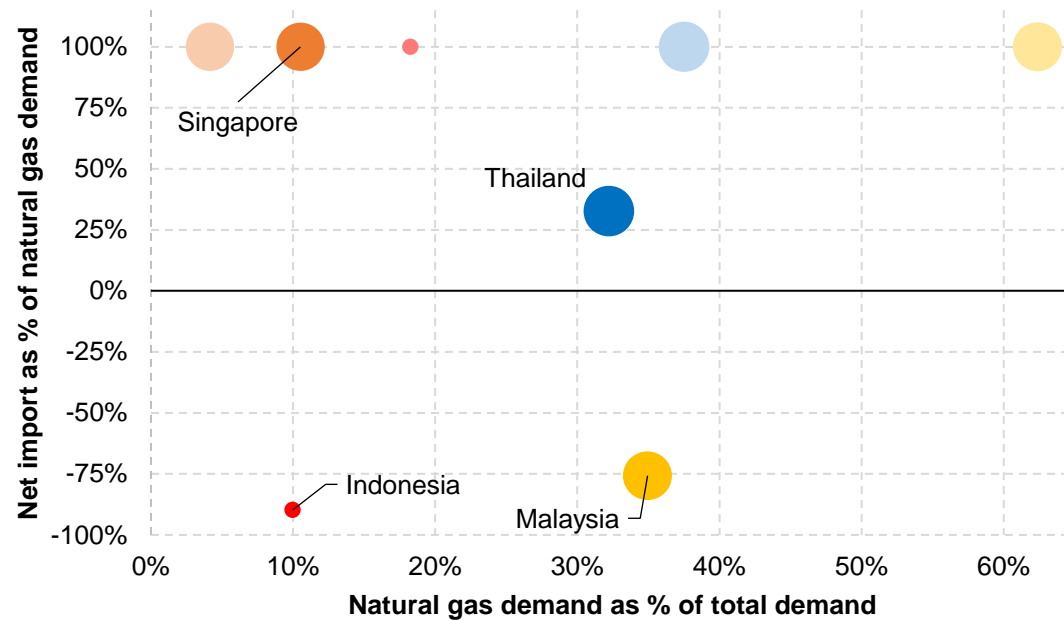


Data source: Groupe International des Importateurs de Gaz Naturel Liquéfié (GIIGNL)

LNG emerged as one of the key commodities in the Southeast Asian energy sector as AMS are **eying wider options for natural gas sources**. Brunei Darussalam, Indonesia, and Malaysia are the three countries in Southeast Asia that export LNG, primarily to Asia Pacific countries. As a net importer, **Thailand is poised to build more regasification terminals** to compensate for its domestic shortfall, with a 7.5 Mtpa facility in Nong Fab being the latest addition in 2022.

# The **vulnerability** of AMS to global natural gas supply shocks may intensify as they are increasingly **connected to the global LNG markets**

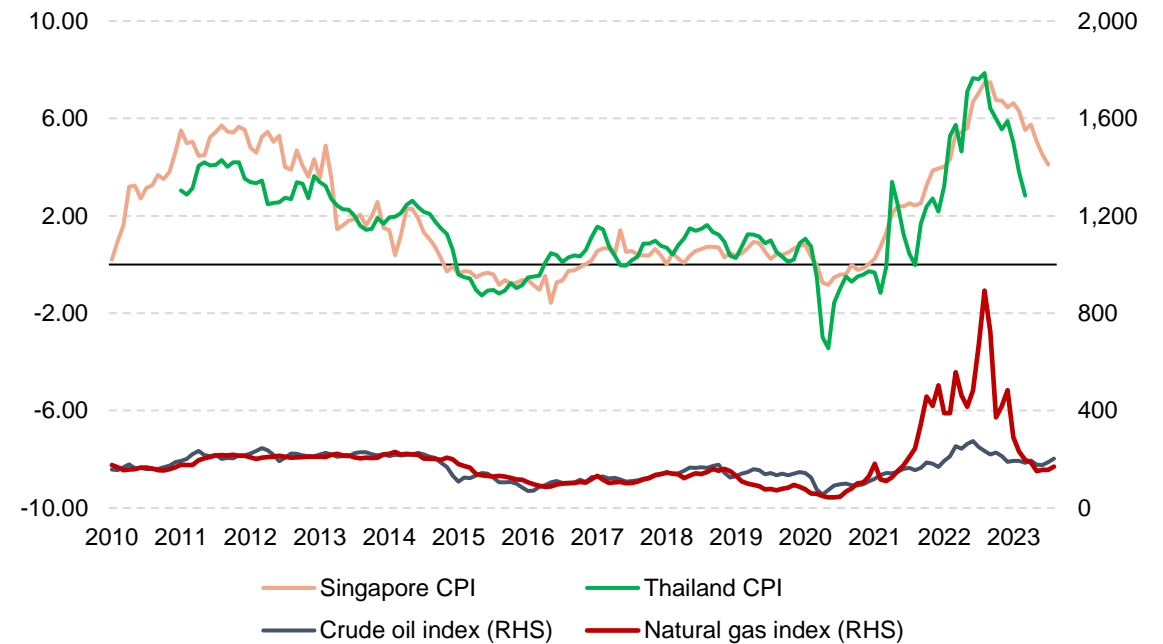
Gas dependence, gas import dependence, and import concentration index



Data source: International Energy Agency (IEA), ASEAN Centre for Energy – 7<sup>th</sup> ASEAN Energy Outlook (AEO7)

Natural gas demand in **Singapore** is fully met through imports, even though their dependency is projected to gradually diminish. In contrast, dependency on natural gas is expected to grow in **Thailand**, so is their import dependence as **indigenous production is falling**. **Indonesia** and **Malaysia** will also follow a similar trajectory, becoming net importers in the 2040s and 2030s, respectively, as **domestic production could no longer meet their national demands**.

Consumer Price Index (% y-o-y), Crude Oil Index, and Natural Gas Index



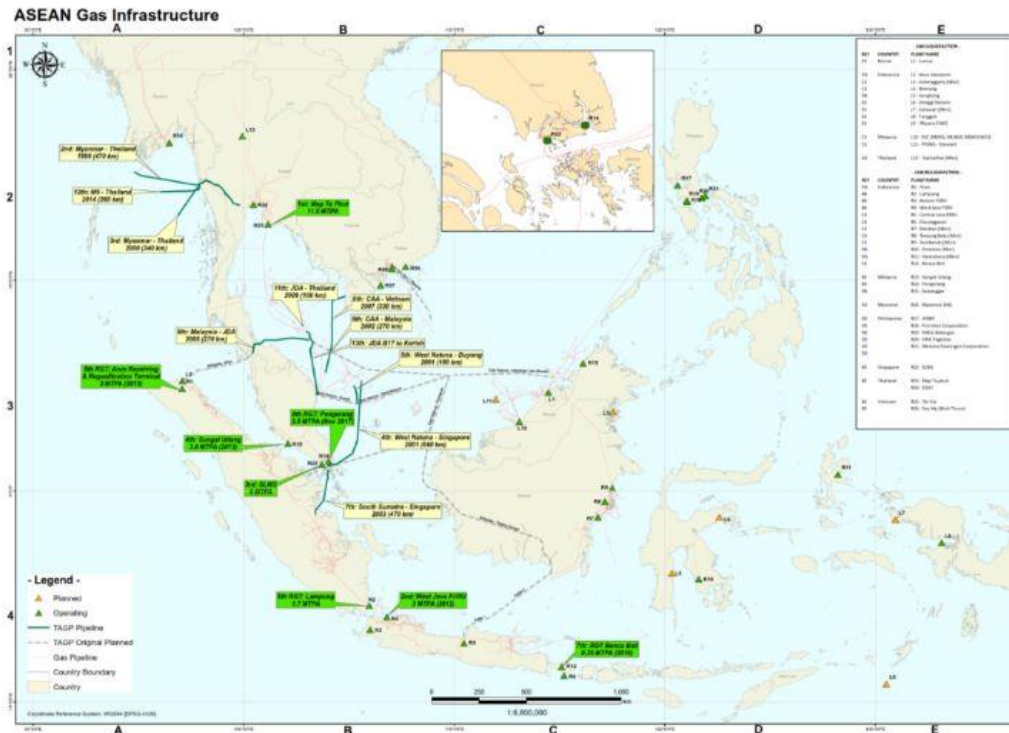
Data source: IMF World Economic Outlook Database, IMF Primary Commodity Prices

**Consumer price index (CPI)** of the natural gas net importers (Thailand and Singapore) is **increasingly correlated with the global natural gas prices**. When the natural gas price started to climb in mid-2021, the CPI in these countries also showed similar trends with stronger correlations than those before 2020. While a deeper study must be conducted to isolate the impact of natural gas prices on the economy, it provides an **initial hint to prepare for some necessary precautionary**.

# Trans-ASEAN Gas Pipeline (TAGP) for Regional Connectivity and Security in the Energy Transition



## 1. TAGP - Status Update



Note: TAGP Map Update in Progress

• Cross border pipelines:  
13 bilateral pipelines with total length of **3,631 km** connecting 6 countries: Singapore, Malaysia, Myanmar, Thailand, Vietnam, Indonesia.

• LNG Terminals:  
11 LNG Regasification terminals with a combine total capacity of **48.5 MTPA** in 5 countries: Indonesia, Malaysia, Singapore and Thailand, Myanmar (an addition of 2 LNG Regasification terminals and 9.75 MTPA reported in 2022).

RGT	Mtpa
Thailand – Map ta Phut (11.5), Nong Fab (7.5)*	19
Indonesia – West Java FSRU (3), RGT Arun (3), RGT Lampung (1.7), RGT Benoa Bali (0.35), Jawa-1 FSRU (2.25)*	10.3
Singapore – SLNG	11
Malaysia – Sungai Udang Melaka, Pengerang	7.3
Myanmar – Thilawa	0.9
<b>TOTAL CAPACITY</b>	<b>48.5</b>



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