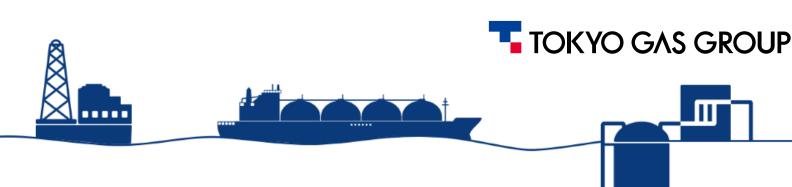


7 April 2025
Yumiko YAO
Tokyo Gas, LNG Business Dept.



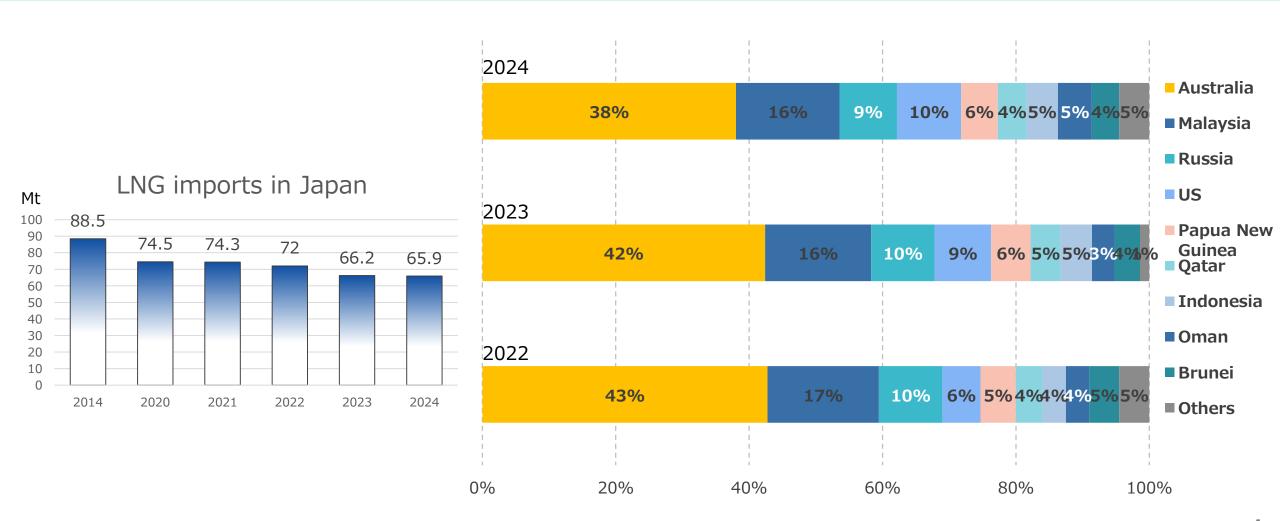




Japan LNG imports



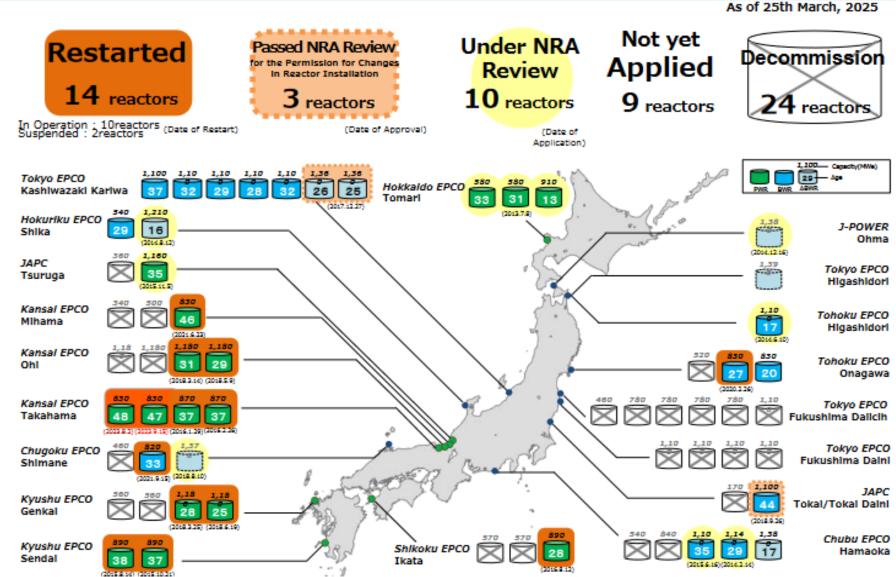
- ■LNG imports in Japan had increased due to the Great East Japan Earthquake in 2011, but have been declining from a peak of 89 million tons in 2014.
- Japan LNG imports volume was 65.9 million tons in 2024.



Nuclear situation



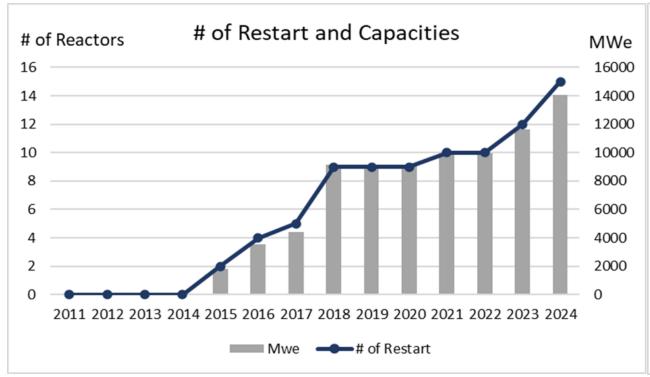
- ◆ The number of restarted nuclear power plants has increased to 14.
- ◆ There is still a high degree of uncertainty about how nuclear power will be utilized.

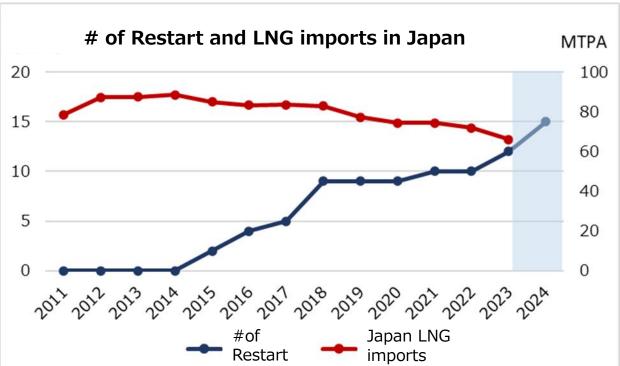


Nuclear situation



◆ The relationship between the restart of nuclear power generation and the volume of LNG imports is shown. LNG imports are decreasing as nuclear power resumption increases.



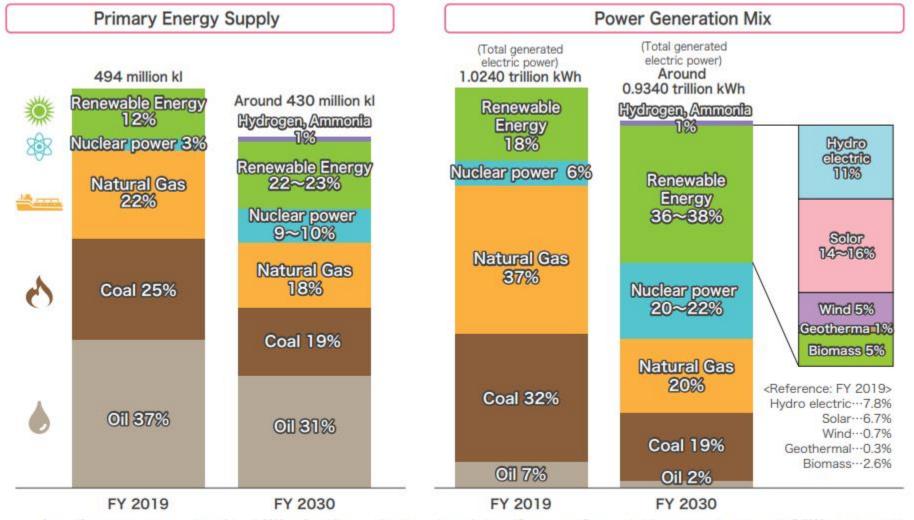


Source: JOGMEC

the 6th Strategic Energy Plan in 2021



◆ The Government of Japan published the 6th Strategic Energy Plan October 2021.



Source: "Comprehensive energy statistics of Japan"; 2019 confirmed figures published by the Agency for Natural Resources and Energy, outlook for energy supply and demand in FY2030 (related materials) * The sum of the values shown may not be 100% in some cases for a reason of round values.

^{*} Renewable energy here, including geothermal power, wind power, and solar power, but not hydroelectric power, includes unused energy.

- In Feb 2025, the Japanese government approved the 7th <u>Strategic Energy Plan</u>, which updates the previous one stated in 2021.
- The plan points out that energy situation surrounding Japan has changed dramatically since 2022;
 - ✓ Russian invasion in Ukraine, Tension in the Middle East
 - ✓ Outlook for electricity demand increase due to DX & GX
 - ✓ The global expand of various and realistic approach to decarbonization, maintaining ambitious climate goals





- ◆ Basic Concept for **Japan's Energy Security**
- ◆ To cope with "uncertainty", Japan should prepare various scenarios.
 - \rightarrow 5 scenarios for energy demand & supply in FY2040.

Scenario1: expansion of <u>innovative renewable energy technology</u>

Scenario2: expansion of <u>next generation energy</u>(hydrogen, ammonia, synthetic methane, etc···)

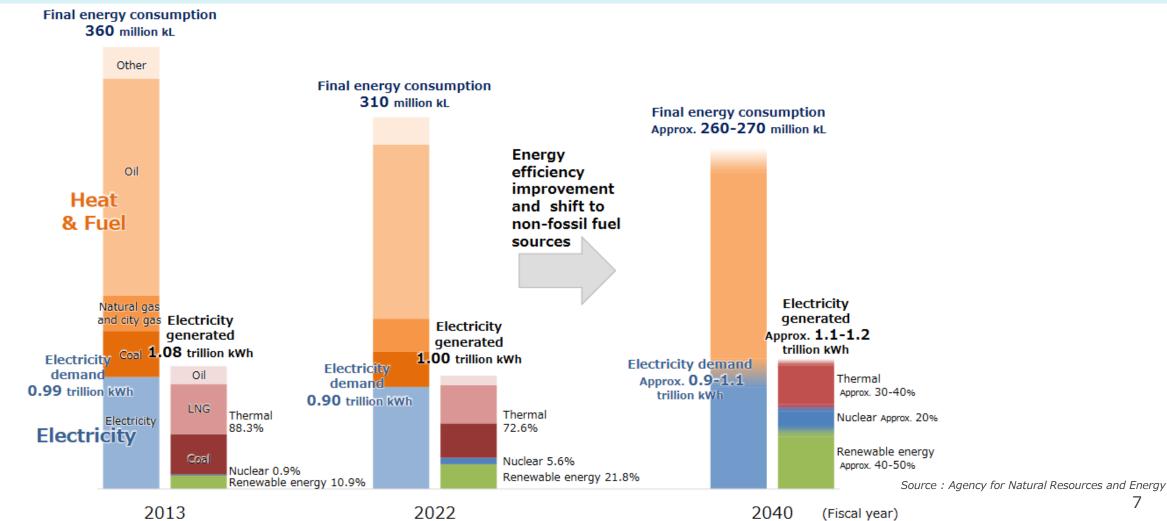
Scenario3:expansion of <u>CCS</u>

Scenario4: wide expansion and utilization of innovative technology (above scenario1,2,3)

★Scenario5:not enough cost reduction of innovative technology/expansion and progress of current technology

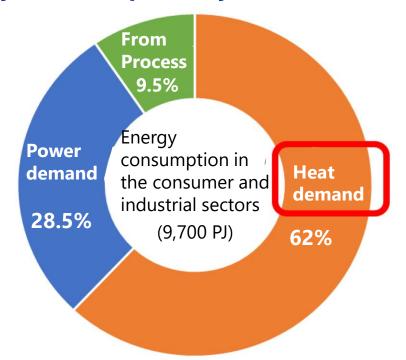
- ◆ Natural Gas is clearly stated as an "important energy source even after achieving carbon neutrality"
 - →This point is referred in G7&AZEC* statements. It is also aligned with **the GIIGNL Hiroshima Declaration in 2024.**

XAsia Zero Emission Community



- ◆ It is mentioned in the 7th Strategic Energy Plan that E-methane will contribute to assist carbon neutrality.
 - ✓ **Decarbonize thermal energy** which accounts for 60% of the energy consumed in Japan.
 - ✓ Utilize existing gas infrastructure Saving enormous replacing/ modification cost
 - ✓ Scalable solution Other LNG exporting and importing countries including Asia and Europe.
 - ✓ E-methane recognized in key international forums*.
 - *G7 Climate, Energy and Environment Ministers' Communiqué on April 15-16, 2023.
 - *Japan-U.S. Energy Security Dialogue on December 12, 2024

Energy Consumption by Sectors in Japan



Utilize Existing Gas Infrastructure

(cost saving & prevention of stranded assets)



- 35 of LNG import terminals in JPN



Over 270k km of existing gas pipeline in JPN
 *Replacement cost for H2 PL JPY 20 trillion



Approx. 600 LNG vessels (Global)

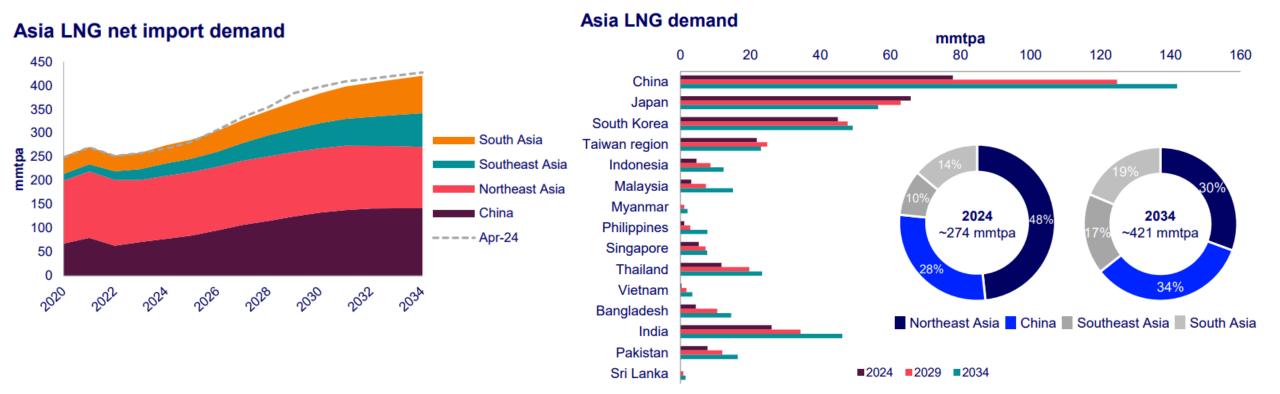


27mil of user's gas appliances in JPN

Asia is driving the expansion of LNG demand



- ◆ Asia's LNG demand growth is expected to be robust driven by strong economic and population growth mainly in emerging countries.
- ◆ Although the outlook is bright, many initiatives will be needed including business operators' efforts to dig out a potential demand, stable gas prices, and policy support.





- Asia Zero Emission Community(AZEC):2023~
 - ✓ Platform for cooperation towards carbon neutrality/net-zero emissions in the Asia region
 - √ 11 nations join
 - ✓ The importance of "various pathways" toward net-zero
- AZEC Leader's Joint Statement Action Plan for the Next Decade(October, 2024)
 - ✓ depending on national circumstances, the important role that natural gas and LNG will play as transition fuels, as part of wider efforts to deliver the goals of the Paris Agreement.



Source : The Institute of Energy Economics, Japan(IEEJ)
Ministry of Foreign Affairs of Japan

Developing Projects in Southeast Asia

- ◆ In the 7th Strategic Energy Plan issued by METI, Japan aims to realize international collaboration with Asian countries utilizing the framework of AZEC.
- ◆ Tokyo Gas is now expanding LNG Infrastructure business such as FSRU in Philippines and LNG to Power in Vietnam utilizing the capability of LNG handling and technology.

FGEN LNG (Philippines)

This is Tokyo Gas's first investment in overseas LNG receiving terminal project that has reached commercial operation.

Shareholders	FGEN LNG Holdings and Tokyo Gas
Project Scope	Own onshore facility and Operation of FSRU (Floating Storage and Regasification Unit)
Share participation timing	February 2025



Receiving the commissioning Cargo

Quang Ninh LNG to Power (Vietnam)

This is Tokyo Gas's first LNG to Power developing project overseas and Tokyo Gas is now developing two LNG to Power projects in Vietnam.

Shareholders	PV Power, COLAVI, Marubeni, and Tokyo Gas
Project Scope	LNG procurement, Construction /Operation of the power plant and onshore terminal
Capacity	Power: 1,500MW (2 x 750MW)
COD timing	2029 (target)

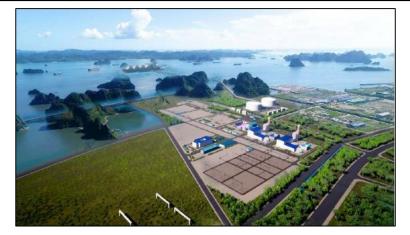


Illustration image of Quang Ninh Project

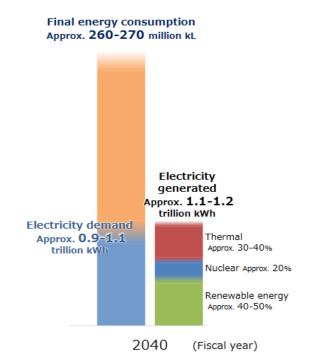
Summary: Japan's mid- to long-term energy policy



In Feb 2025, the Japanese government approved the 7th Strategic Energy Plan.

Key Point

- ✓ While maintaining the principle of S+3E*, which is the essence of energy policy, the government should cope with the uncertainty risks associated with energy transition and the progress of decarbonization.
- ✓ LNG keep playing an important role as an "important energy source even after achieving carbon neutrality".
- ✓ Cooperating with AZEC for pursing CN by various pathways.
- *S+3E: Safety, Energy Security, Economic Efficiency, and Environment





Thank you

