

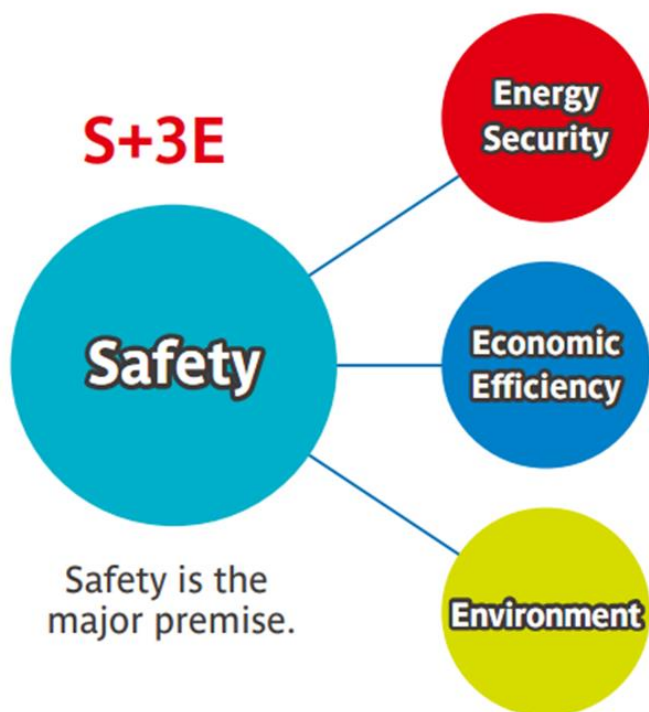
Japan's Energy Transition

September 2026

**Agency for Natural Resources and Energy
Ministry of Economy, Trade and Industry**

Fundamental Perspectives on Energy Policy

- Maintaining **the principle of S+3E** (**Safety**, **Energy Security**, **Economic Efficiency**, and **Environment**), the cornerstone of Japan's energy policy.
- **Based on the major premise of safety**, we aim to **ensure a stable energy supply**, **improve economic efficiency**, and **enhance environmental compatibility**.



Energy Security

- The energy self-sufficiency rate is projected to rise to around 30-40% by FY2040
- FY2023: 15.3%

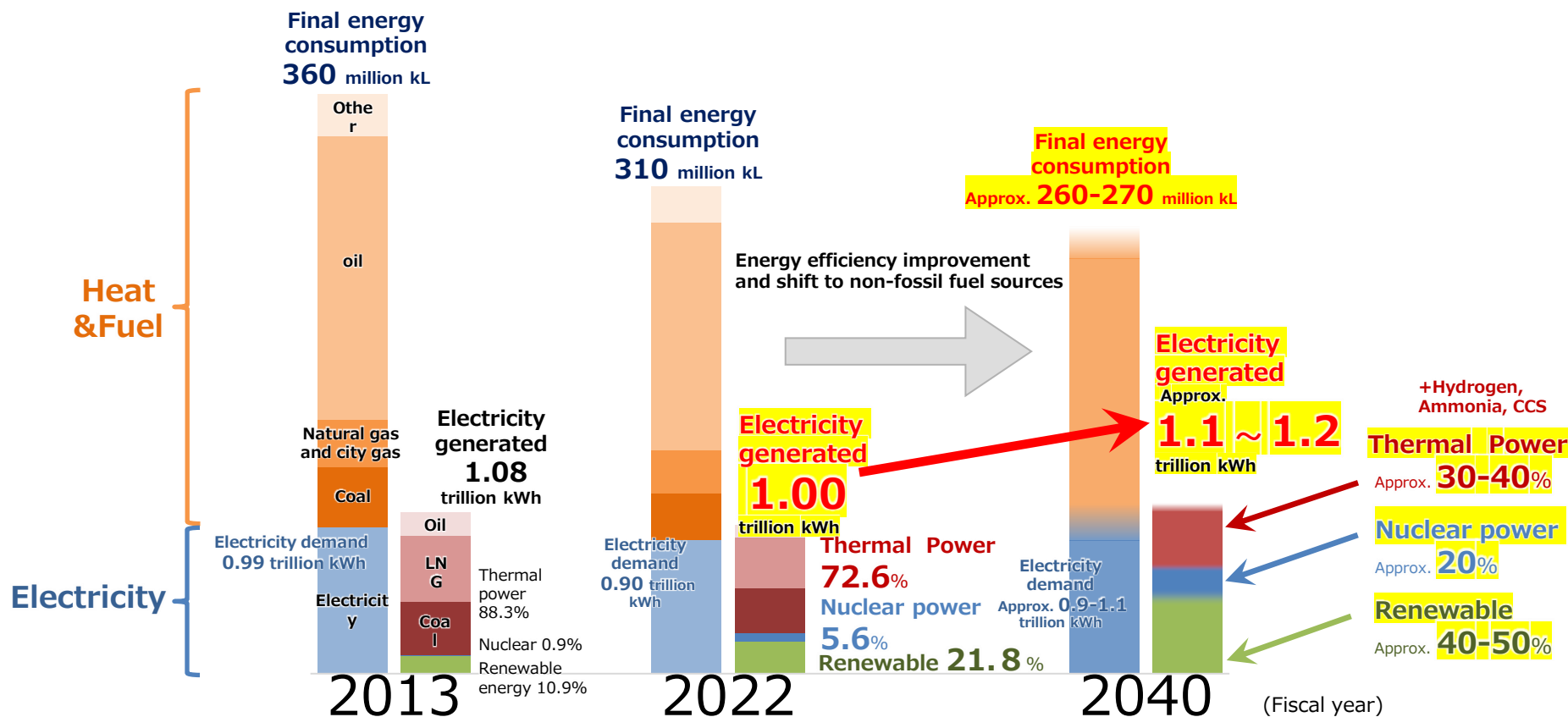
Economic Efficiency

- Supplying energy at internationally competitive prices is essential
- Industrial electricity prices in FY2022 (per kWh)
Japan: ¥23.4 | US: ¥10.9 | UK: ¥30.0 | France: ¥18.0 | Germany: ¥26.8

Environment

- Ambitious GHG reduction target aligned with the 1.5°C pathway
- Reduction targets: 46% by FY2030, 60% by FY2035, and 73% by FY2040 from FY2013 levels

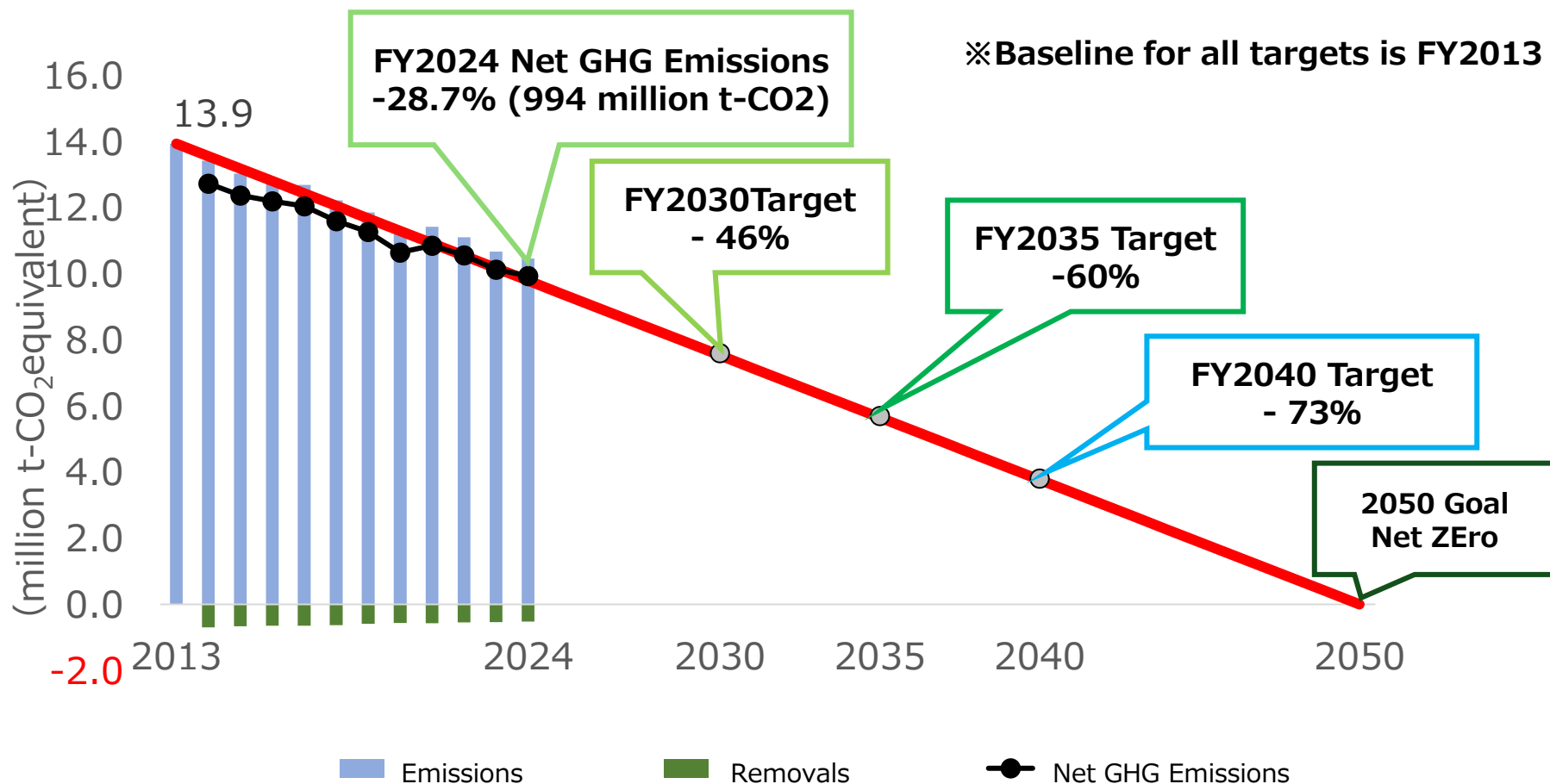
Energy Supply and Demand Outlook (FY2040)



- The left bar chart illustrates final energy consumption, while the right chart displays electricity generation.
- Electricity demand is calculated by subtracting transmission and distribution losses, as well as on-site electricity consumption, from the total electricity generated.

Progress toward Net Zero in 2050

- Japan's net GHG emissions for FY2024 were 994 million t-CO₂. This is a 1.9% decrease compared to FY2023, and a 28.7% decrease compared to FY2013.
- The general decreasing trend has continued, with 2024 being the lowest emissions since 2013, the first time recorded to be below 1000 million t-CO₂.



AZEC (Asia Zero Emission Community)

- **Proposed by PM Kishida, 2022**
- **11 partner countries:** ASEAN, Australia and Japan
- **AZEC Leaders Meetings:** Tokyo (2023), Vientiane (2024), Kuala Lumpur (2025)
- **Goal:** To share a common objective of carbon neutrality and collaborate on a realistic transition through various pathways.
- **Team Japan:** The Japanese government, JBIC, NEXI, NEDO, and private companies, provide tailored support in policy, technology, finance, human capacity development.



(Photo: Cabinet Public Affairs Office)



Australia



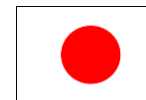
Brunei
Darussalam



Cambodia



Indonesia



Japan



Lao PDR



Malaysia



Philippines



Singapore



Thailand



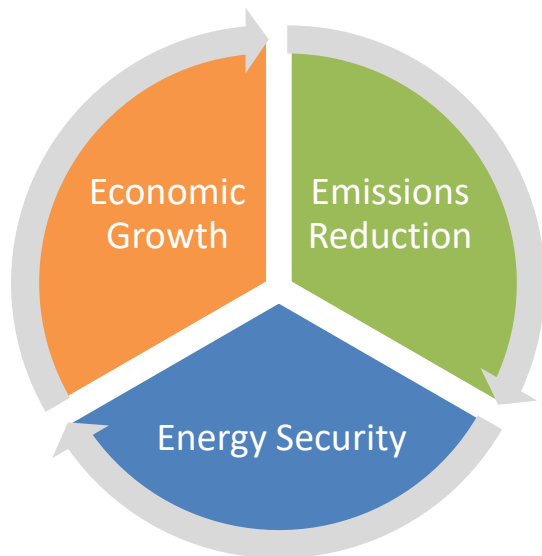
Viet Nam

AZEC Principles

Triple breakthrough

Japan aims to simultaneously achieve:

- Emissions Reduction
- Economic Growth
- Energy Security



One goal, various pathways

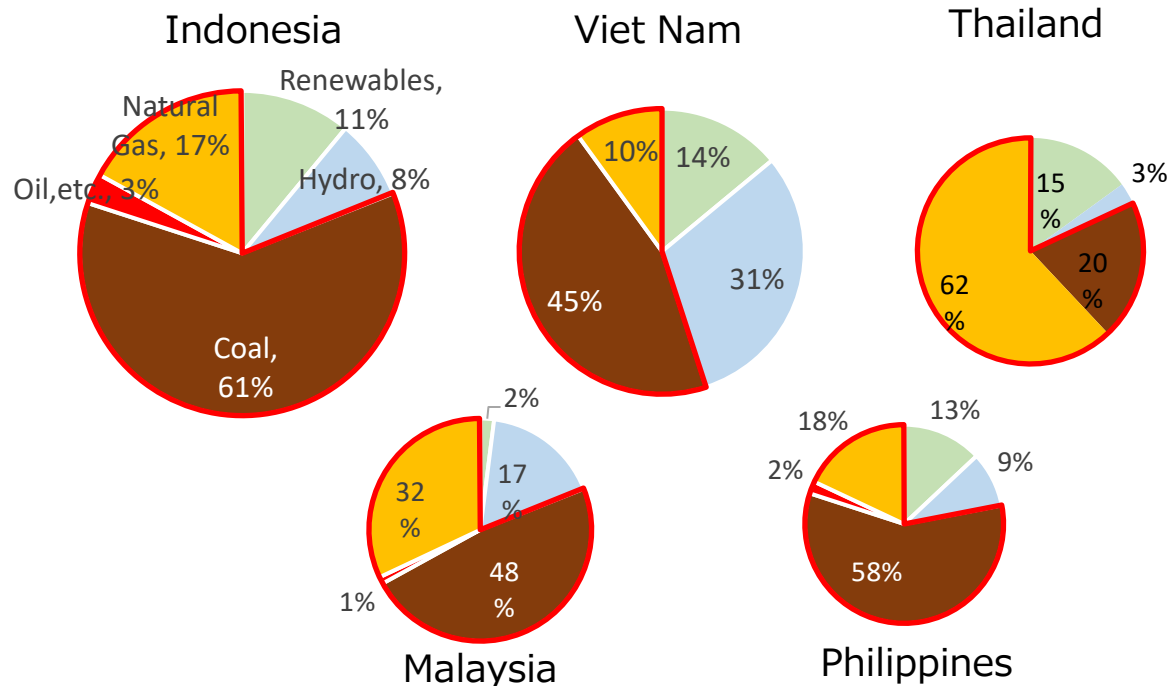
Toward our common goal of achieving net zero, we will make practical energy transitions through various pathways depending on the circumstances of each country.



Asian Transition

- Although many ASEAN countries have announced their intentions to achieve carbon neutrality, a significant number still heavily depend on coal- and natural gas-fired power generation.
- As the demand for electricity continues to rise alongside economic growth, it is essential to promote decarbonization steadily and practically. To this end, cooperation through Japanese technology, finance, and experience under the AZEC platform is also important.

*The amount of electricity consumed in ASEAN has doubled over the past decade and is projected to triple in the next three decades.



(Reference) China: Coal 64%, Natural Gas 3%, India: Coal 72%, Natural Gas 4%

Source : IEA

※ The area of the pie chart is proportional to the amount of electricity generated in each country. However, the representations for Cambodia and Brunei are approximately four times larger than their actual areas.

CN goals set by Southeast Asian countries

Country	CN Target
Indonesia	CN by 2060
Viet Nam	CN by 2050
Thailand	CN by 2065 ※By 2050 for CO2 only.
Malaysia	CN by 2050
Philippines	—
Singapore	CN by 2050
Lao PDR	CN by 2050
Cambodia	CN by 2050
Brunei Darussalam	—
Myanmar	CN by 2050

Source : NDCs submitted by each country, etc.

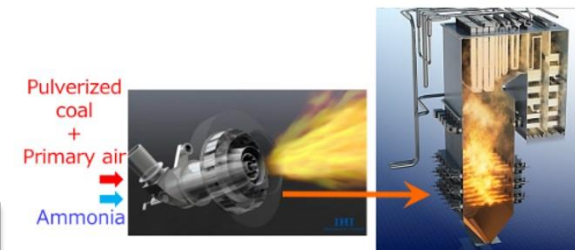
Use Cases in Japan : Ammonia Power Generation

- As Japan's original technology, stable combustion and reduced NOx emissions with 20% ammonia co-firing have been already achieved. A demonstration project with actual large-scale equipment (a 1 GW power plant) was successfully completed at JERA Hekinan Thermal Power Station in 2024.
- Further development is underway for 50% and more ammonia co-firing or mono-firing toward the social implementation.

Ammonia Storage Tank



Ammonia Co-firing (image)



AZEC Projects Ammonia: Commercialization of Ammonia-powered Gas Turbine

Area: **Malaysia**

Companies:

Japan: IHI

Malaysia: Gentari Sdn Bhd (PETRONAS' clean energy arm)

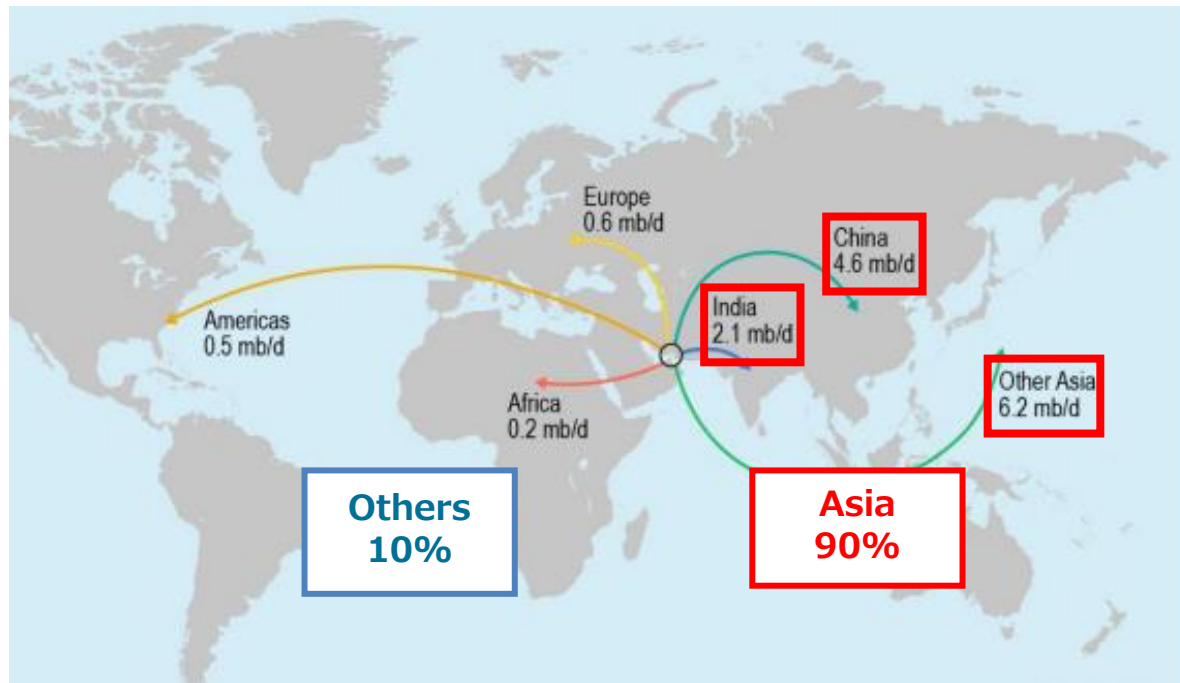
Overview: Utilizing the results of the Green Innovation Fund project implemented by IHI until fiscal year 2025, an ammonia combustion gas turbine will be installed at Petronas's ammonia production facility, with plans to supply decarbonized electricity. This project aims to be the world's first implementation case to decarbonize all fuel, targeting the start of commercial operations within FY2027.



Impact of a Closure of the Strait of Hormuz on AZEC Partner

- Around **90% of the crude oil passing through the Strait of Hormuz**—approximately 13 million barrels per day—**is destined for Asia**.

Destinations of Crude Oil Shipped via the Strait of Hormuz



(Source) IEA

Asia's Dependence on Hormuz for Crude Oil Imports

	Dependence on Hormuz	Stockpile measured in days of supply
Philippines	94%	<u>45 days</u>
Vietnam	81%	<u>30 days</u>
Singapore	69%	Not disclosed
Thailand	61%	<u>60 days</u>
Malaysia	47%	Not disclosed
Indonesia	21%	<u>25 days</u>
Japan	92%	<u>201 days</u> ※

As of April 2026

※Japan data as of August 2026

Japan/IEA Reaction to the Closure of the Strait of Hormuz

(Oil Stockpile Releases)

- On March 11, ahead of the IEA announcement, Japan declared the release of oil stockpiles equivalent to 45 days' worth of national consumption.
- Later that same day, the IEA announced that its member countries had agreed to undertake a coordinated release of 400 million barrels of oil stockpiles.
- The total volume amounted to 412 million barrels, marking the largest release in IEA history and surpassing the 180 million barrels released in response to Russia's invasion of Ukraine.
- METI, based on Article 31 of the Oil Stockpiling Act, decided to release national crude oil stockpiles equivalent to one month's supply on March 24, with the release beginning on March 26. And on April 15, METI decided to release an additional amount equivalent to 20 days of supply as a second phase of releases starting on May 1.

(Procurement of crude oil and other resources)

- In light of the situation in the Strait of Hormuz, measures are being taken to increase imports of U.S. crude oil and secure alternative procurement routes to the Middle East.

AZEC Plus Online Summit on Energy Resilience

- On April 15, 2026, Prime Minister Takaichi announced the launch of the “**Partnership On Wide Energy and Resources Resilience (POWERR Asia)**,” a new cooperation framework encompassing both emergency responses and structural measures with mid- to long-term perspectives, supported by \$10 billion in financial cooperation.



(Photo: Cabinet Public Affairs Office)

- The countries most affected by disruptions in the supply of energy and resources passing through the Strait of Hormuz are those in Asia.
- It is necessary for Asian countries to work together to address the challenge, as these impacts extend to all countries closely connected through supply chains.

Overview of POWERR Asia (Partnership on Wide Energy and Resources Resilience Asia)

Financial support etc., totaling approx. ¥1.5 trillion (US\$10 billion) .

- In response to fuel supply shortages and supply-chain disruptions in Asia, **Japan will provide financial cooperation to Asian countries**, including:
 - ① **Cooperation on emergency responses** such as loans to procure crude oil and petroleum products and to maintain supply chains
 - ② **Cooperation on increasing crude oil stockpiling capacity in Asia**, including establishing stockpiling and release schemes, and supporting the construction and use of storage tanks.



【Emergency Response】

Supply procurement and supply-chain maintenance

- ① Financial support for local companies
- ② Fiscal support for Asian governments
- ③ Strengthening collaboration with international organizations



【Structural Response】

Asia Economic and Energy Resilience Initiative

- ① Strengthening energy supply systems
- ② Diversifying energy sources
- ③ Upgrading industry

POWER GX; Policy Package for Wide Energy and Resources Resilience through GX

- On August 26, 2026, **Prime Minister Takaichi** held the **17th meeting of the GX (Green Transformation) Implementation Council** at the Prime Minister's Office.
- At the meeting, the participants **discussed the supply situation of critical goods affected by the situation in the Middle East and the acceleration of Japan's GX initiatives toward enhancing the resilience of the energy supply-demand structure.**
- Prime Minister Takaichi stated that we will further strengthen the GX initiatives that Japan has pioneered ahead of the rest of the world from the perspective of two dimensions of resilience and we will vigorously **advance this enhanced approach as the Takaichi Cabinet's "POWER GX" and thereby contribute to realizing a strong economy.**

The concept of "POWER GX" is as shown below.

Diversifying fossil fuel procurement sources and Reducing associated risks

1. Diversifying fossil fuel procurement sources and reducing associated risks

(1) Diversity oil procurement sources

(2) Strengthening the supply system for petroleum-related products, including naphtha and intermediate products

Energy transition, strengthening of supply, and efficiency improvements through expanded investment

2. Reduce dependence on fossil fuels [Improving the energy self-sufficiency rate]

3. Stabilization of electricity demand in the AI era

4. The resilience of the energy by POWER Asia

- The resilience of the energy supply-demand structure by importing country

