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Nuclear Energy Policy and Challenges in Japan

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60th Anniversary

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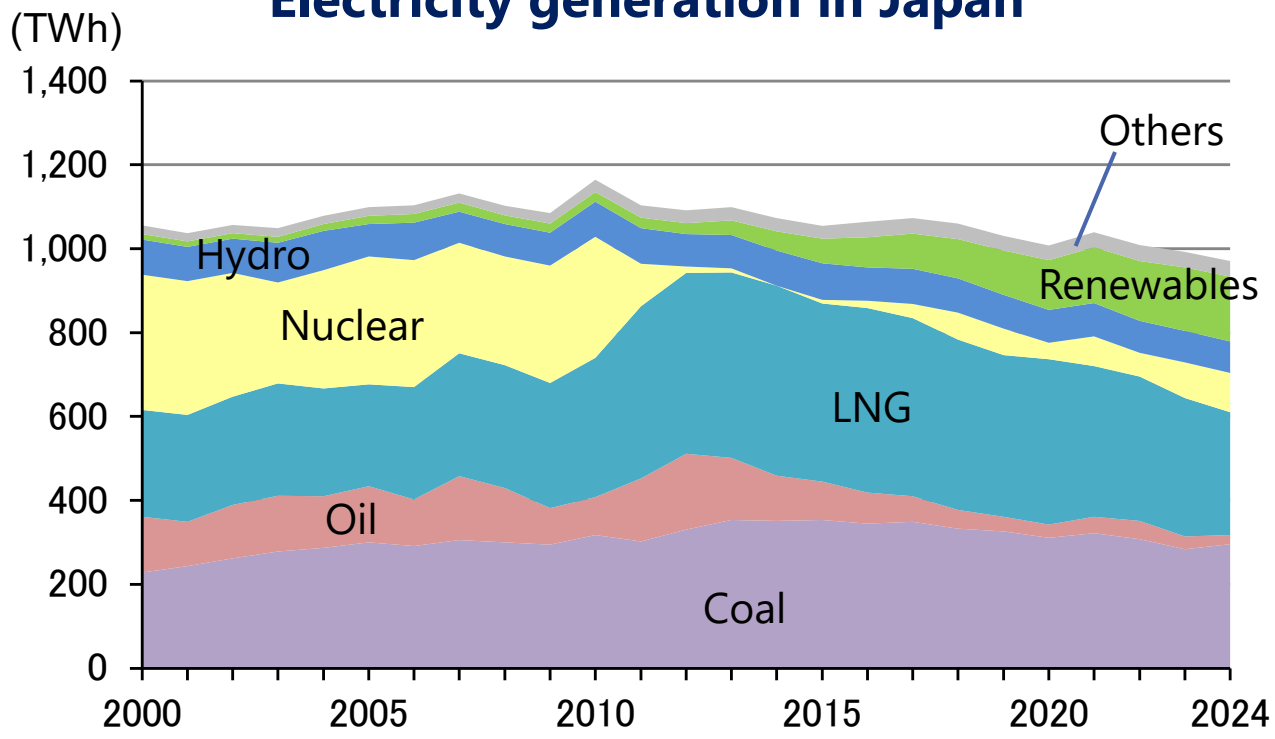
Power Supply in Japan

- ✓ Electricity generation mix in Japan
  - After the Fukushima accident, imported LNG covers the deficit.
  - Fossil fuels supply around 60% of electricity.
  - Energy self-sufficiency rate of Japan is the lowest-level in the world.

Electricity generation in Japan



Energy self-sufficiency of G7 countries (2024)

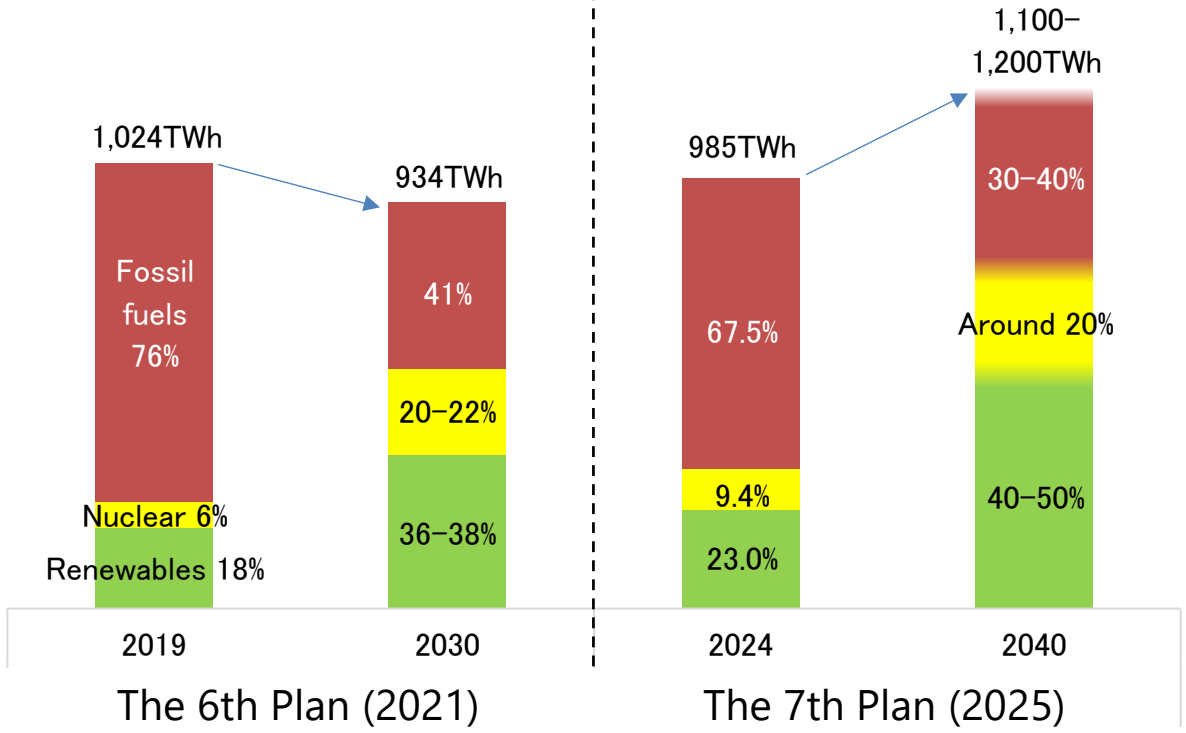
Canada	196%
US	112%
UK	61%
France	60%
Germany	33%
Italy	26%
Japan	16%

Source: Prepared by the author based on IEA data.

Japanese Energy Policy

- ✓ The 7th Strategic Energy Plan and GX vision 2040 were determined in February 2025.
- ✓ Unchanged principle "S+3E": **S**afety, **E**nergy Security, **E**conomic Efficiency and **E**nvironment
- ✓ And it reflects the latest situations of energy supply and international relations.

Outlook of power generation mix estimated in the 6th & 7th Plan



Situations and challenges facing Japan

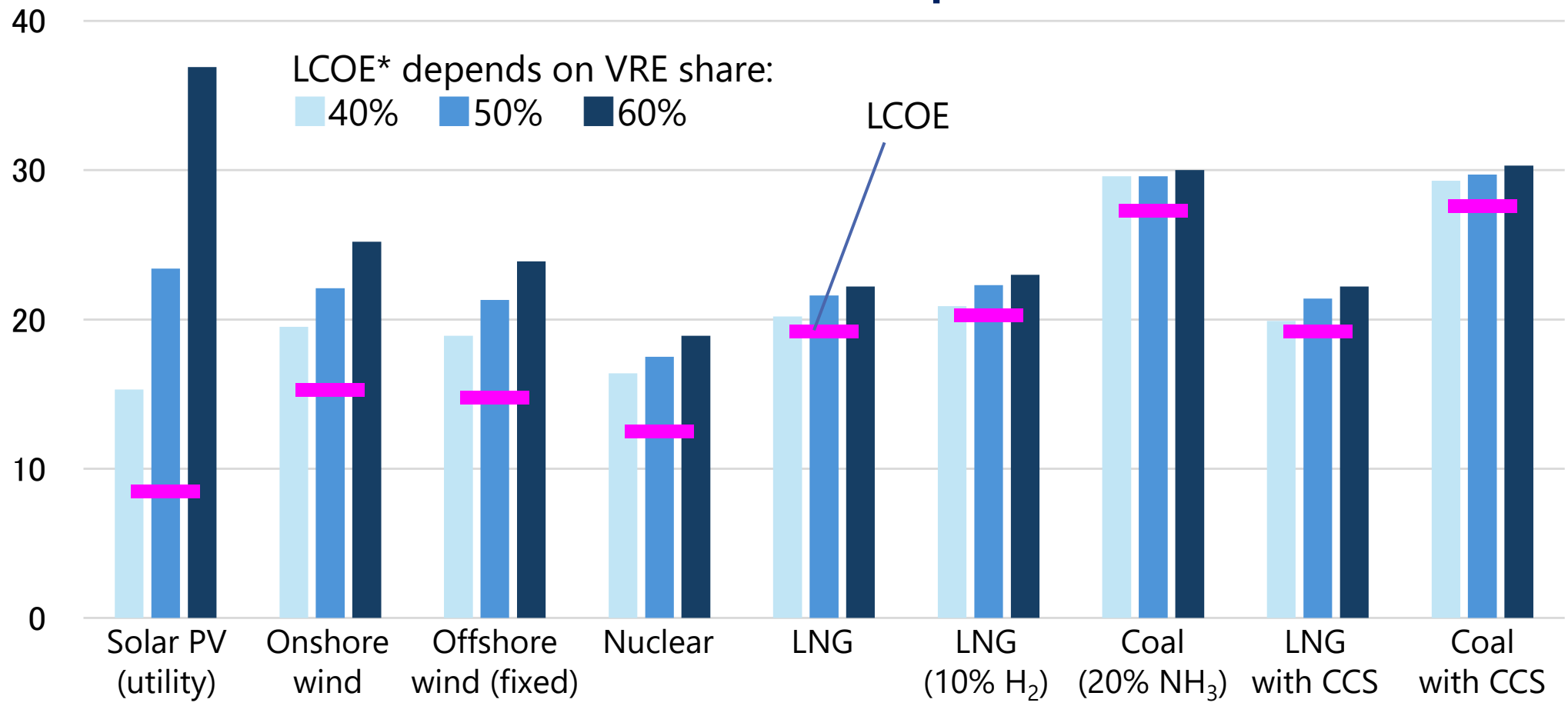
- Increasing importance of energy security
- Potential for increasing electricity demand due to DX (Digital Transformation) and GX (Green Transformation)
  - ➢ Shift from the previous downward trend to a possible upward trend
- Maintaining ambitious climate change goals while adopting realistic and diverse measures
- Integration of energy policy and industrial policy for domestic economic growth

Source: Prepared by the author based on METI information.

Value of Baseload Power

✓ In parallel with the Strategic Energy Plan, an experts' working group estimated generation costs of each power source (LCOE) and those including some parts of network integration cost (LCOE*).

Estimated LCOE and LCOE* of each power source in 2040

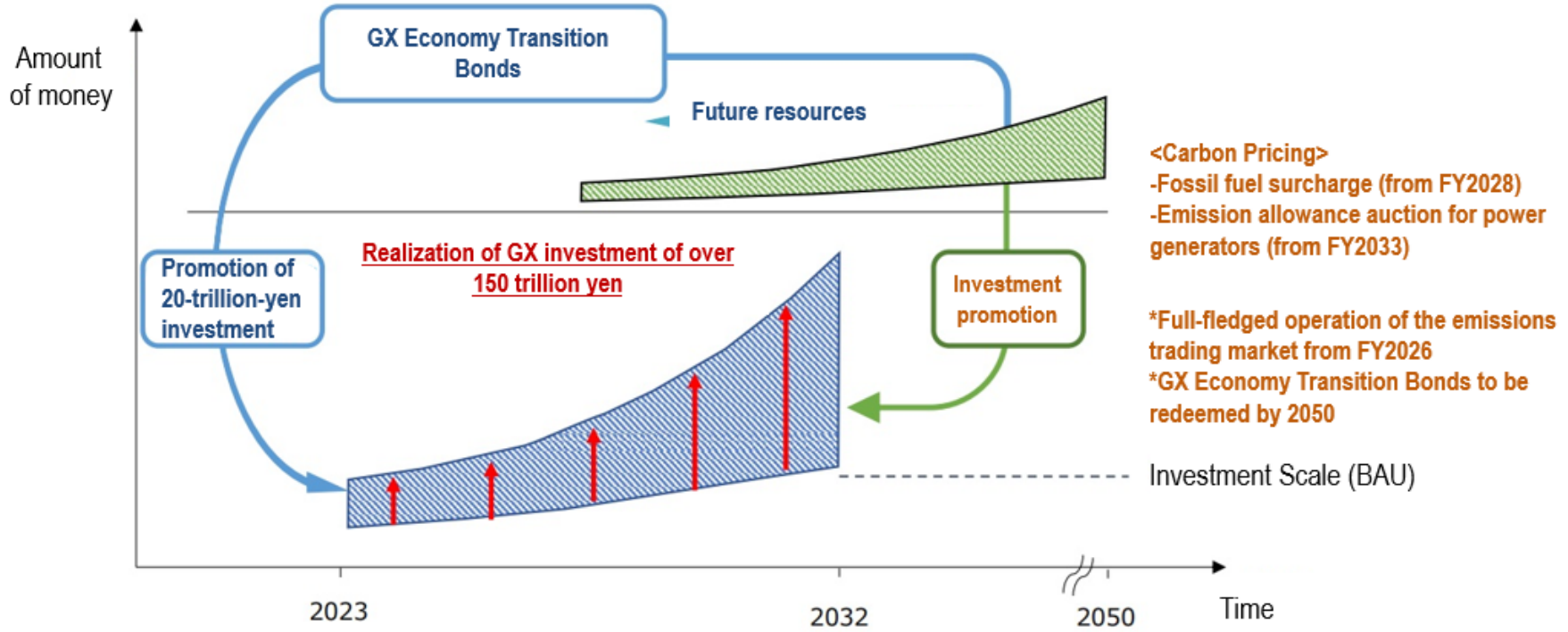


Source: Prepared by the author based on METI information.

Energy Policy and GX (Green Transformation)

- ✓ Besides the Strategic Energy Plan, Japanese government also released “GX vision 2040”.
- ✓ The GX policy aims to introduce “Pro-Growth Carbon Pricing Concept” that combines carbon pricing and GX Economy Transition Bonds to encourage private investments.
- ✓ Advanced nuclear technology is an eligible area for support under GX policy.

Pro-growth Carbon Pricing Concept

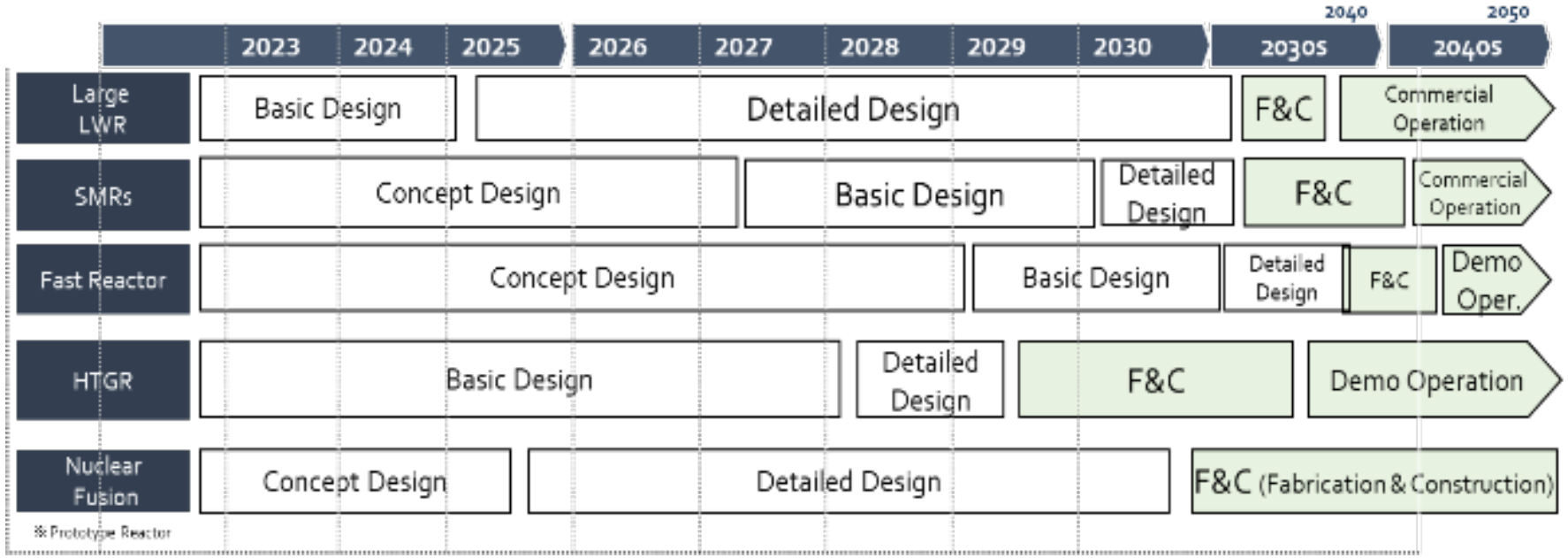


Source: METI

Advanced Reactors Development

- ✓ Aiming to improve nuclear safety, Japan makes efforts to develop and construct the next generation advanced reactors incorporating new safety mechanisms.
- ✓ The investment scale will be 1 trillion JPY in 10 years.
- ✓ An experts' working group of the government compiled a technology roadmap for advanced reactors development.

Technology roadmap for advanced reactors



The actual schedule will depend on:

- the public understanding in the local communities

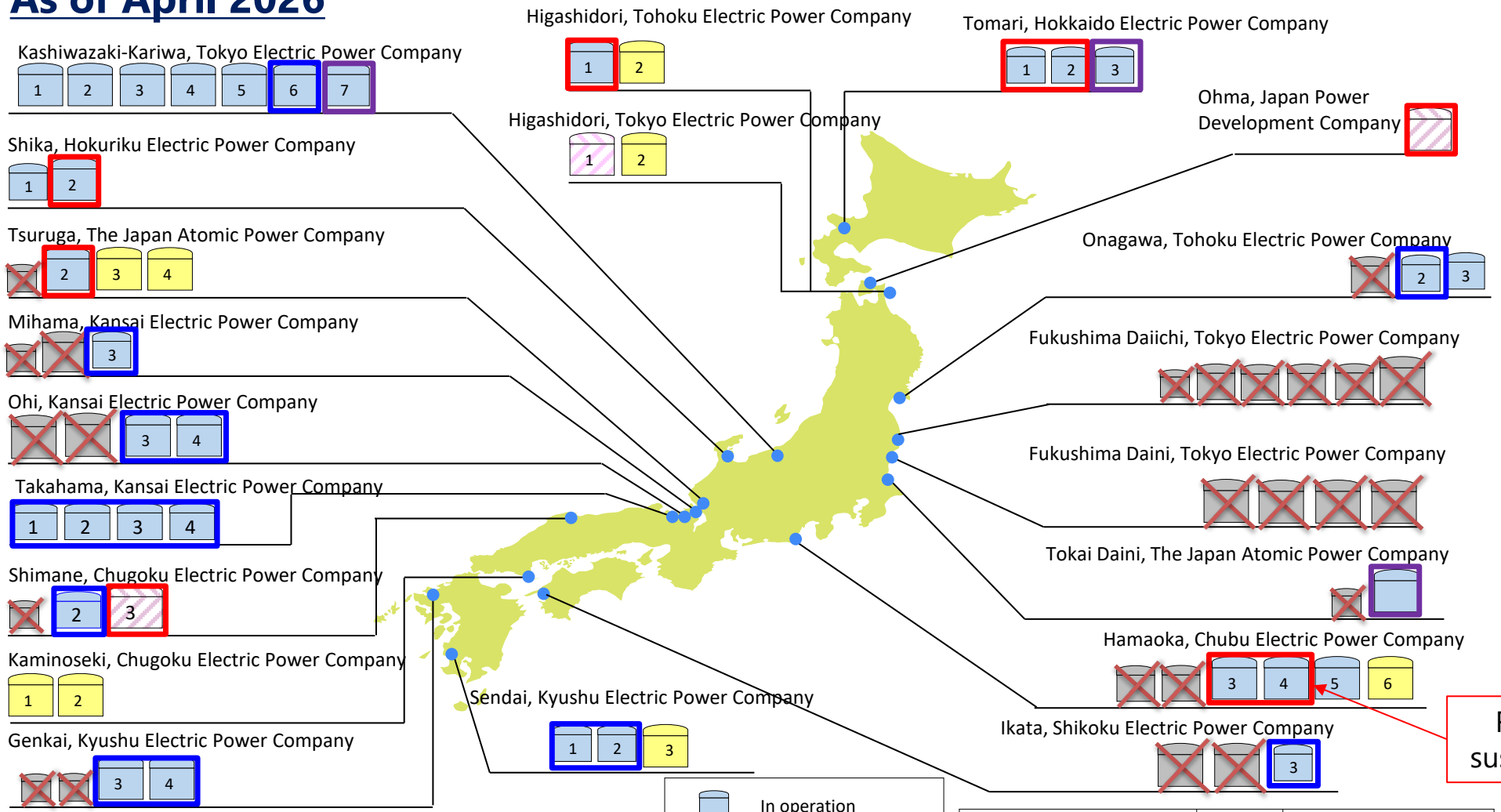
and on:

- the action plan of the owner of the plants.

Source: METI

Status of Nuclear Power Plants in Japan

As of April 2026



	Units	Total output (MW)
In operation	33	33,083
Under construction	3	4,141
Planning	6	8,797
Total	42	46,021

15 Restarted 3 Passed review 8 Under review by NRA

Source: Prepared by the author based on each reactors' information.

Adequate Power Capacity?

- ✓ The plan “around 20% in 2040” could potentially be achieved using all the reactors “in operation” and “under construction.”
- ✓ However, if we want keep the same scale beyond 2050, they are likely to be insufficient.

FY2040 Total Power Generation
1,100-1,200TWh

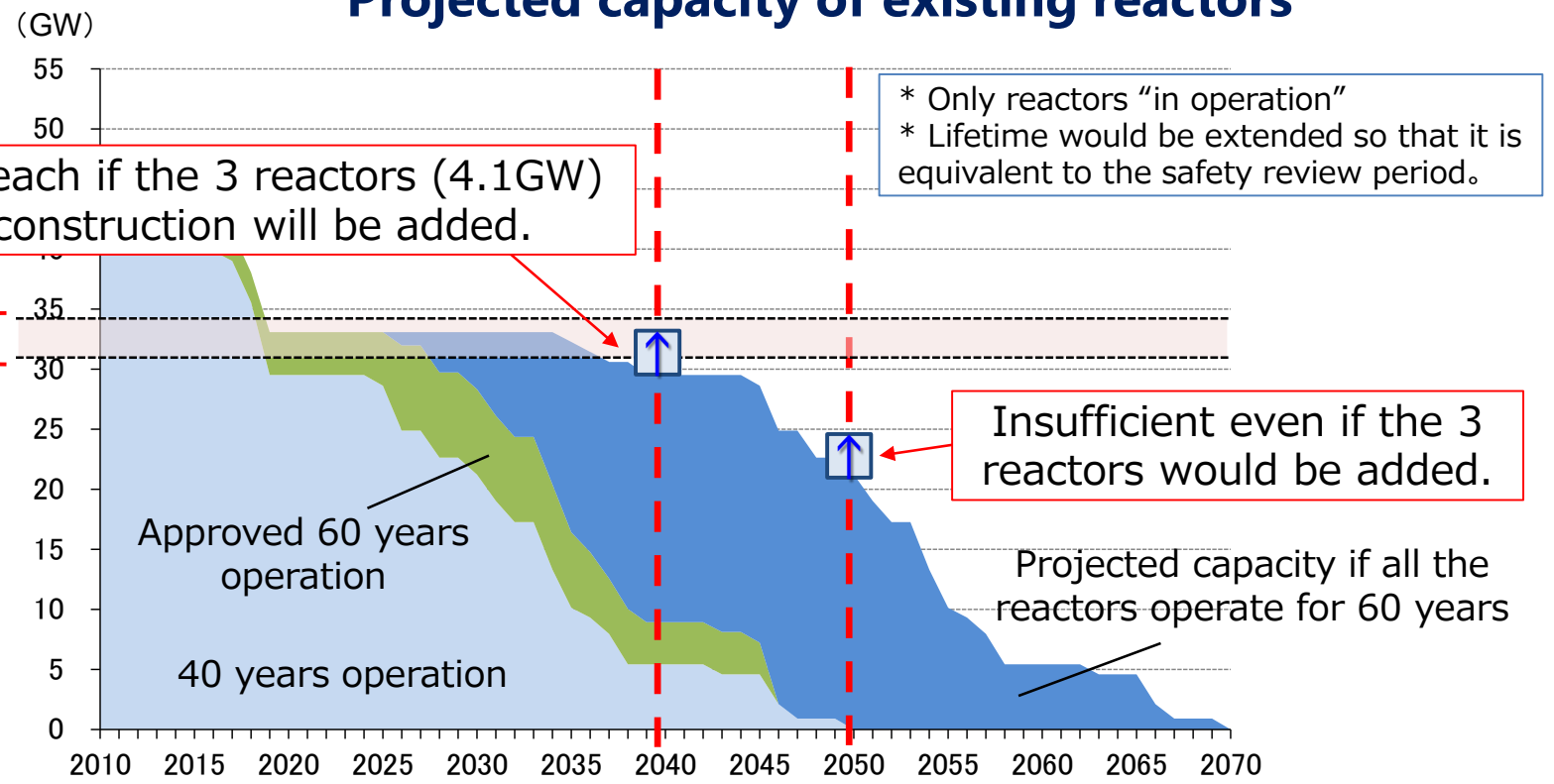
Thermal 30-40%

Nuclear Around 20%

Renewables 40-50%

Generating capacity **Around 31-34GW** (Capacity factor 80%)

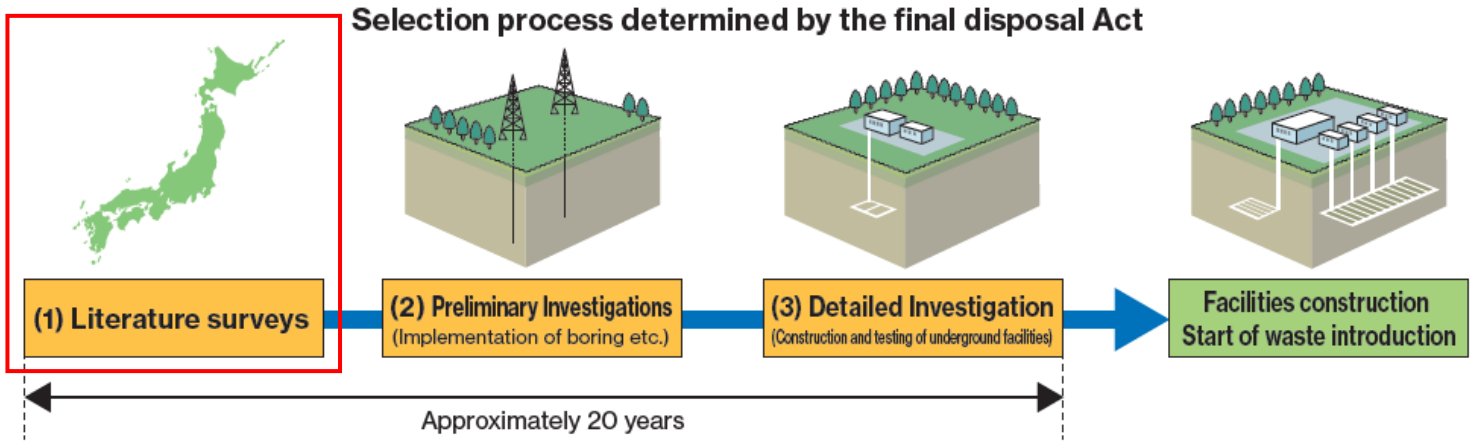
Projected capacity of existing reactors



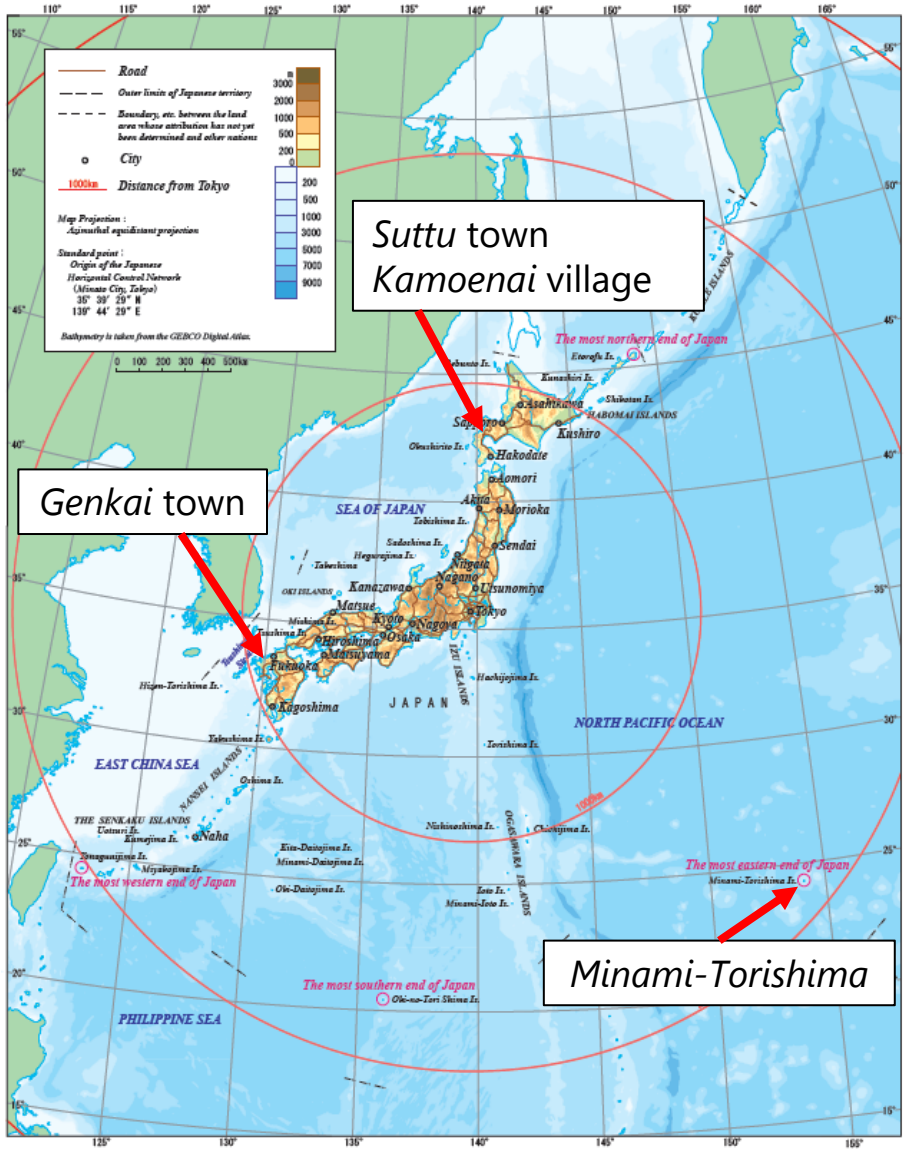
Source: Prepared by the author based on METI, JAIF, etc.

Radioactive Waste Disposal

- ✓ Selection process of HLW disposal site consists of 3 phases.
- ✓ 4 municipalities have accepted the 1st phase:
  - Suttu town and Kamoenai village (Hokkaido)
    - ➢ Accepted in October 2020, report submitted in November 2024
  - Genkai town (Saga)
    - ➢ Accepted in May 2024
  - Minami-Torishima (Ogasawara village, Tokyo)
    - ➢ The village mayor (April 2026):
      "It should be determined at the national government's responsibility."
- ✓ In parallel with the survey, forums for the local communities to discuss geological disposal are established.



Source: JAERO



Map: GSI

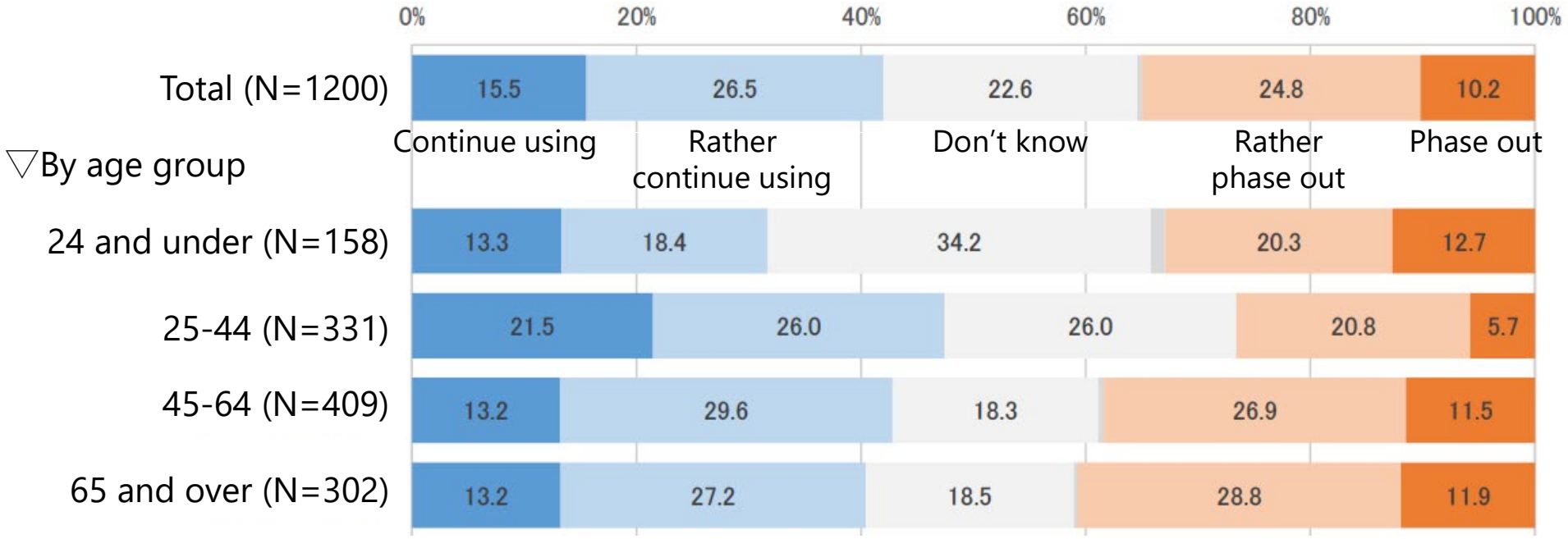
Public Perception and Acceptance

✓ After the Fukushima Daiichi accident, public opinion toward nuclear power in Japan was largely negative, but it has gradually begun to change.

An opinion poll on nuclear energy (October 2025)

Question (N=1200):

➢ Do you think Japan should continue using nuclear power generation or phase it out? (Choose an answer that best matches your opinion.)



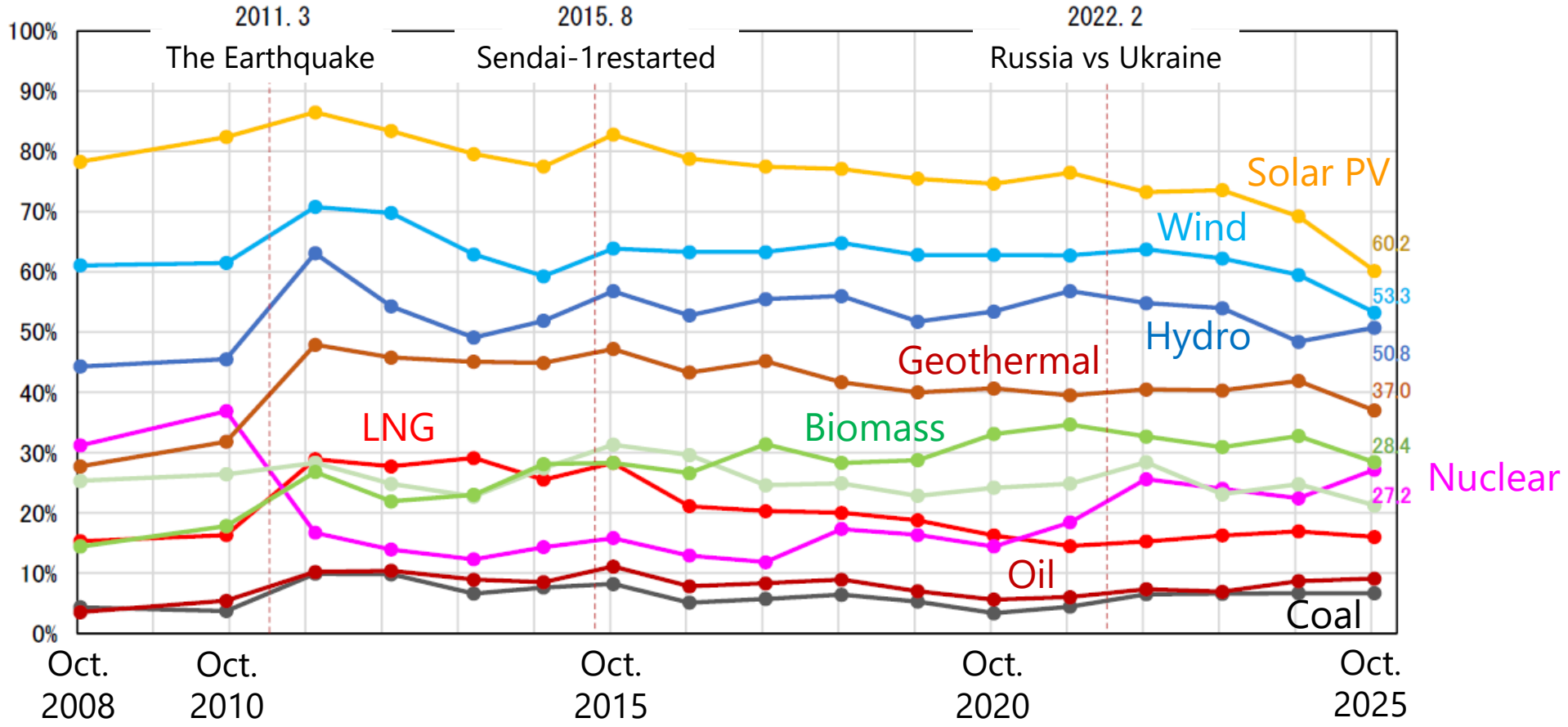
Source: JAERO

Public Perception and Acceptance

Changing attitude toward each energy source (2008-2025)

Question (N=1200):

- What types of energy do you think Japan should utilize going forward? (You may select multiple options.)



Source: JAERO