



LNG Market Trends in Japan

GIIGNL General Assembly 2023

**JERA Co., Inc.
November 2023**

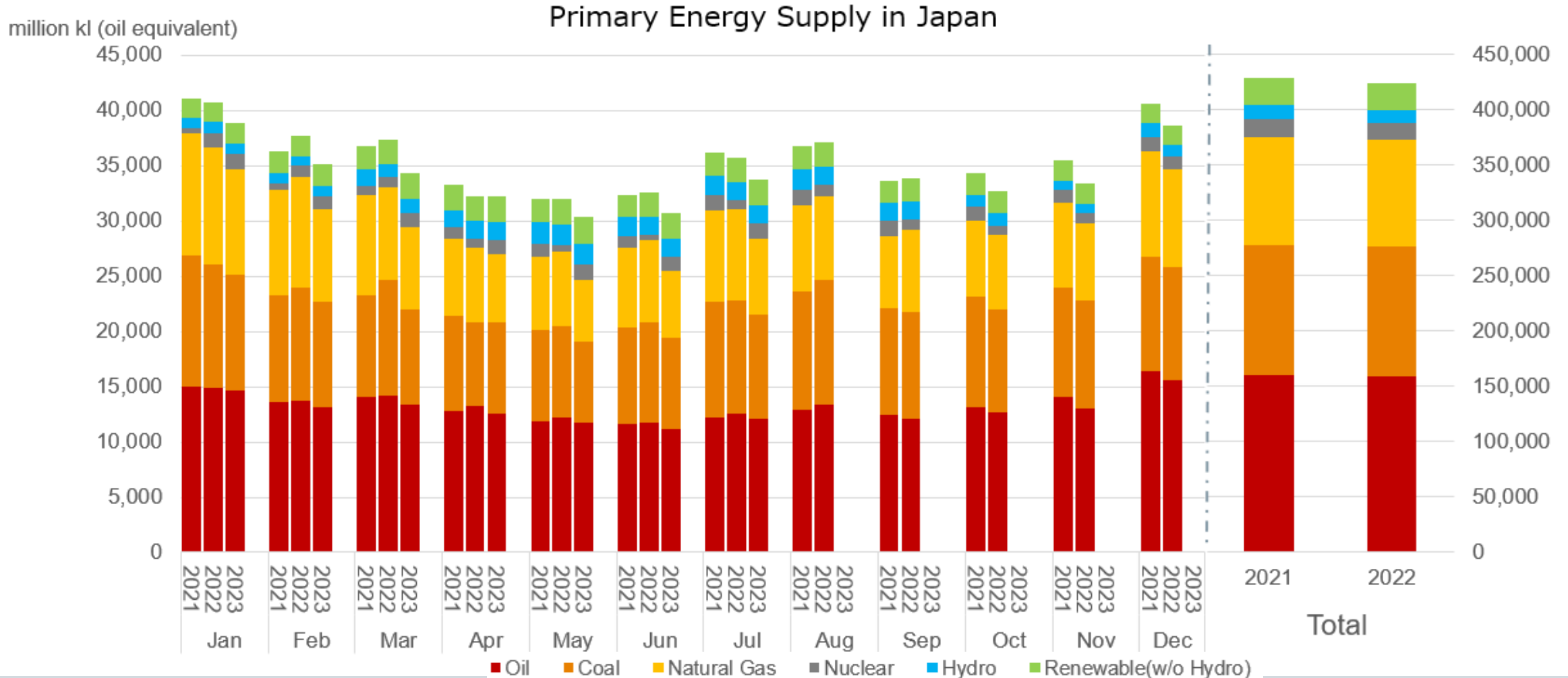
1	Update on Recent LNG Demand in Japan
2	Outlook for LNG Demand in Japan
3	Recent Japanese Market Developments (1) Strategic Buffer LNG “SBL” (2) Coalition for LNG Emission Abatement toward Net-zero “CLEAN”



1. Update on Recent LNG Demand in Japan

Primary Energy Supply in Japan

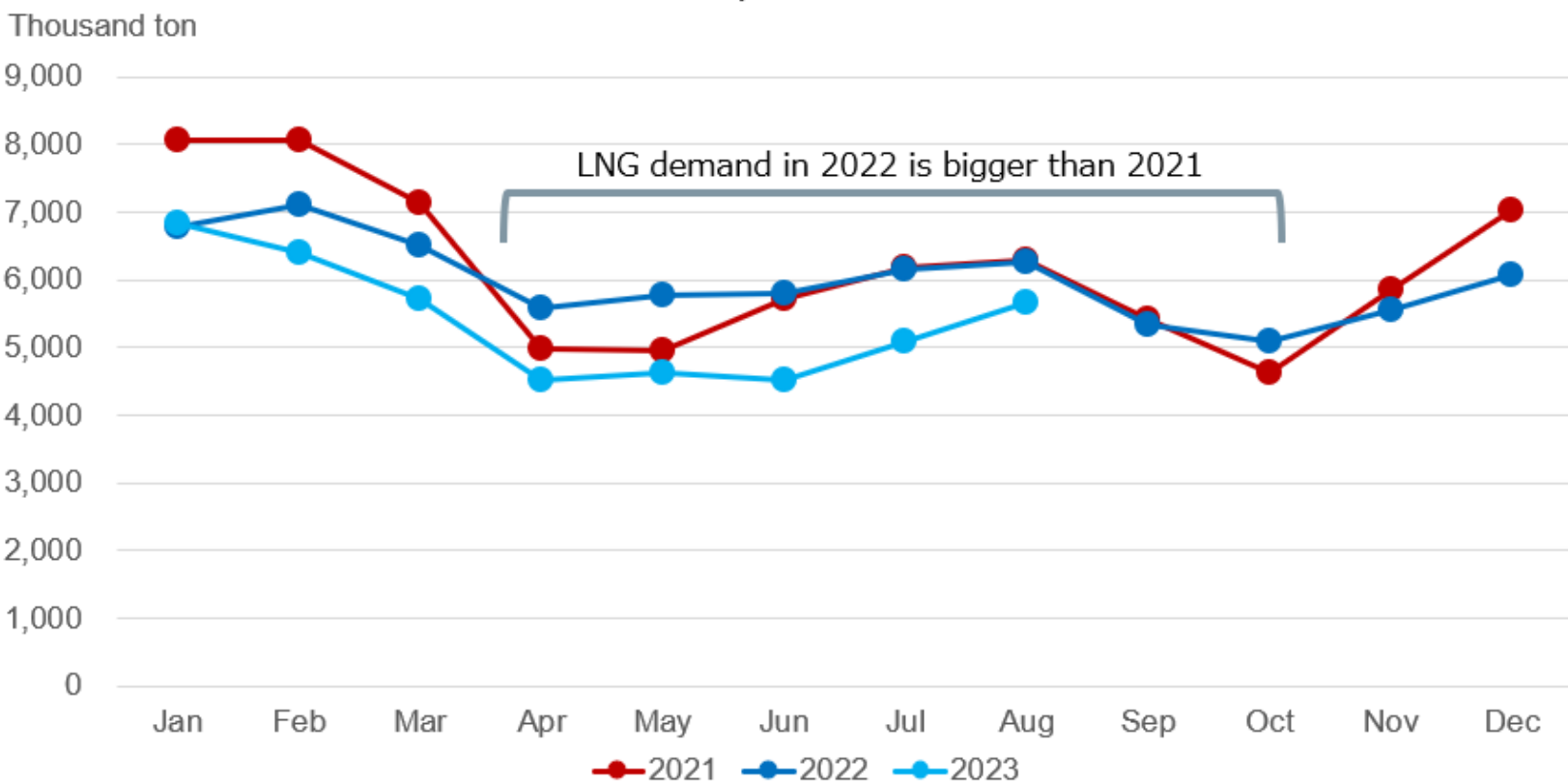
- ◆ In 2022, the primary energy supply in Japan decreased by -1.1%.
- ◆ Natural gas accounted for 22.7% of Japan's total primary energy supply in 2022.



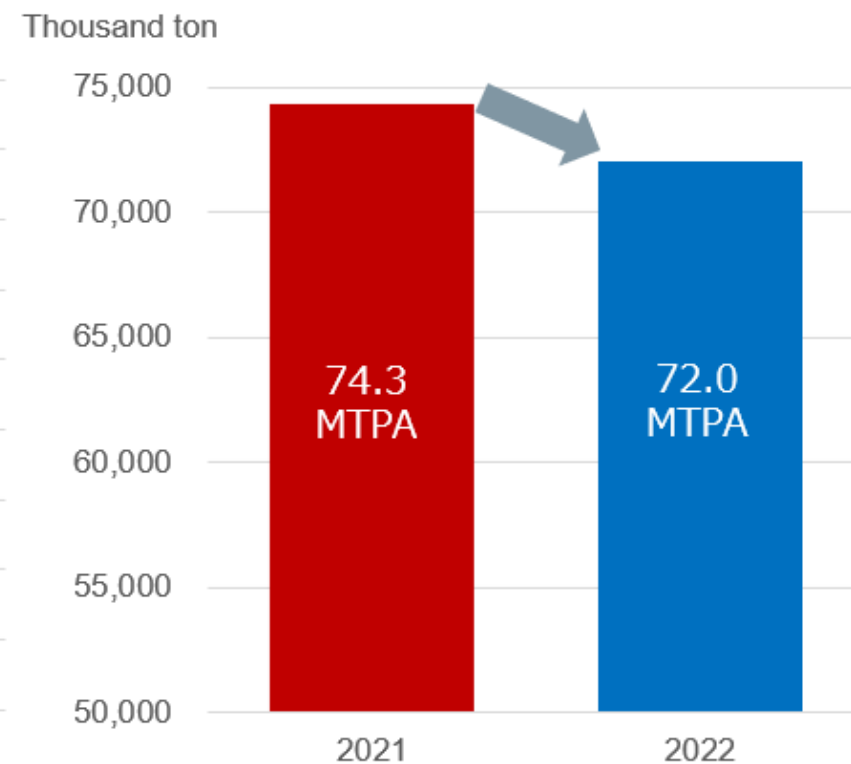
LNG Imports to Japan

- ◆ In 2022, LNG imports into Japan slightly decreased by -2.3MTPA to 72.0MTPA.
- ◆ Although the seasonality of LNG demand was at high level in 2021, it has weakened especially in the summer 2022.

Monthly LNG volumes

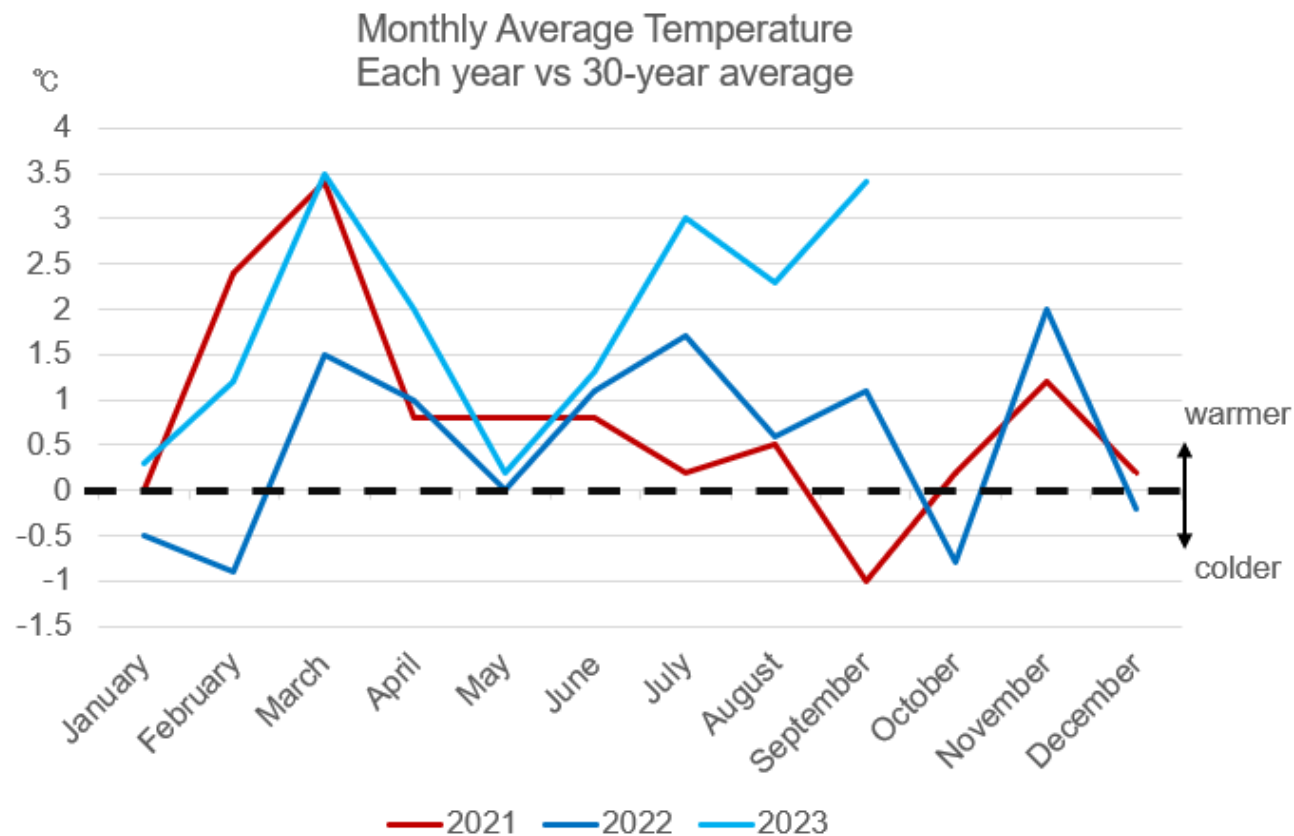
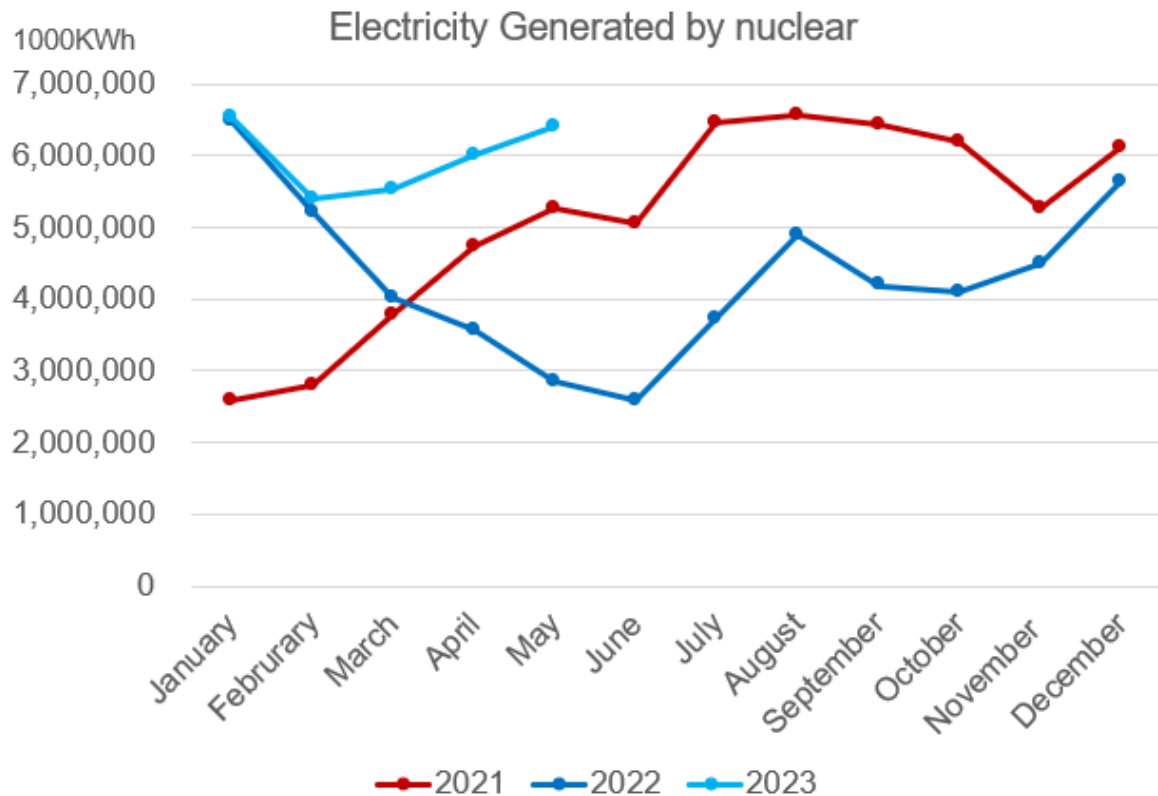


Annual LNG volumes



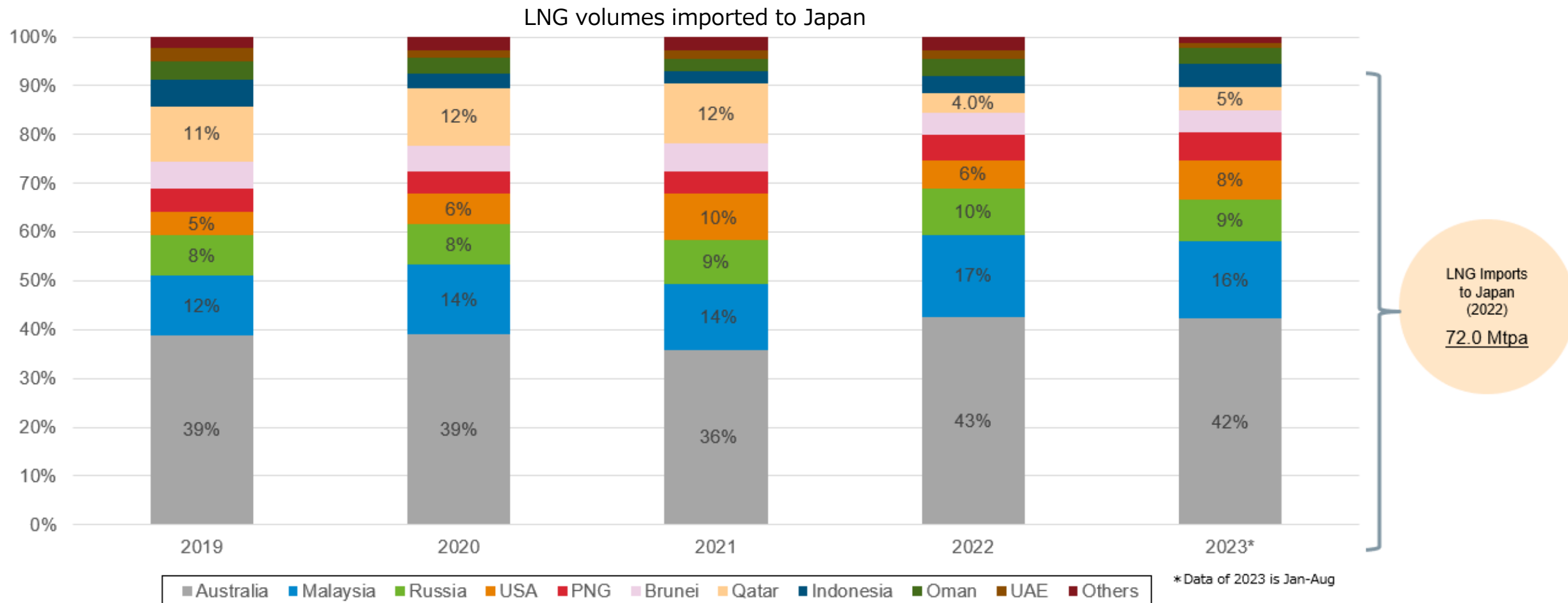
Impact of nuclear restart and temperature on Japanese LNG Demand

- ◆ Major reasons why the seasonality change of LNG demand observed in 2022 are restart of nuclear reactors and warm temperature.
- ◆ Electricity generated by nuclear Apr-Dec 2022 was at the lowest level in the past years, although it recovered and surpassed in winter 2023.
- ◆ Moreover, summer in 2022 was warmer than 2021, LNG had to make up for the lack of nuclear power.



Imports to Japan by Supplier Country

- ◆ In 2022, the share of LNG from Australia was the largest (43%) , followed by Malaysia (17%).
- ◆ The share of Qatar declined in 2022 due to expiration of several long-term contracts.
- ◆ USA also declined due to accident, but the trend shall be temporally.



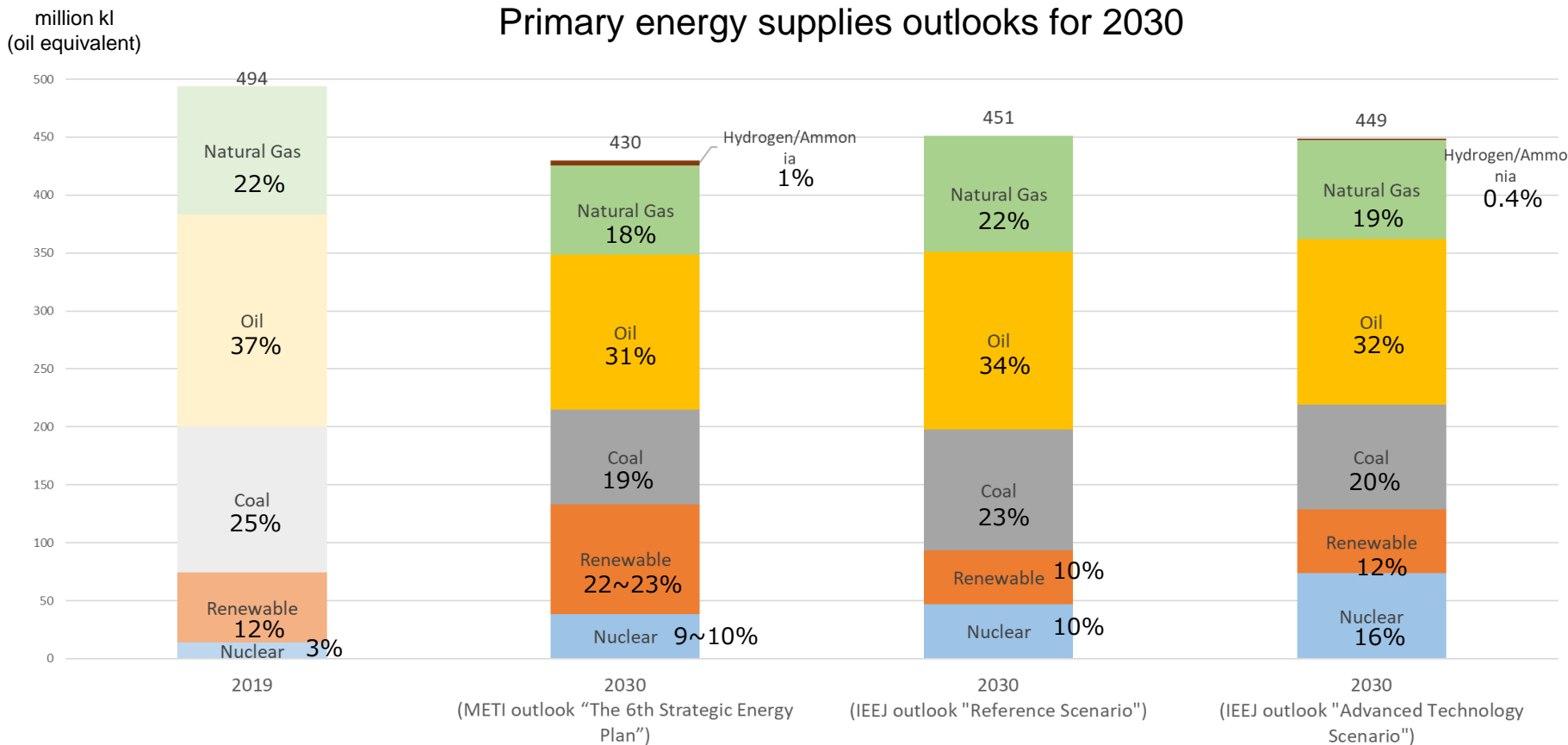


2. Outlook for LNG Demand in Japan

Energy demand and supply outlook for 2030

- ◆ We show three outlooks for 2030 published by METI and IEEJ to compare with each scenarios and result in 2019.
- ◆ Japanese government promotes the measures such as “Nuclear facilities restart”, “Renewable power expansion” and “Inefficient coal power plants shutdown”, and the progress of which will be the main factors for LNG demand fluctuation.
- ◆ If the targets of the other sectors will not be achieved, LNG demand will increase.

*:PJ/Mtoe (oil equivalent) =46.74,
PJ/million kl (oil equivalent) =38.76



METI outlook “The 6th Strategic Energy Plan” in Oct 2021

A scenario in which the target is to reduce greenhouse gas emissions by 46% by 2030 compared to 2013

IEEJ outlook “Reference Scenario” in Oct 2022

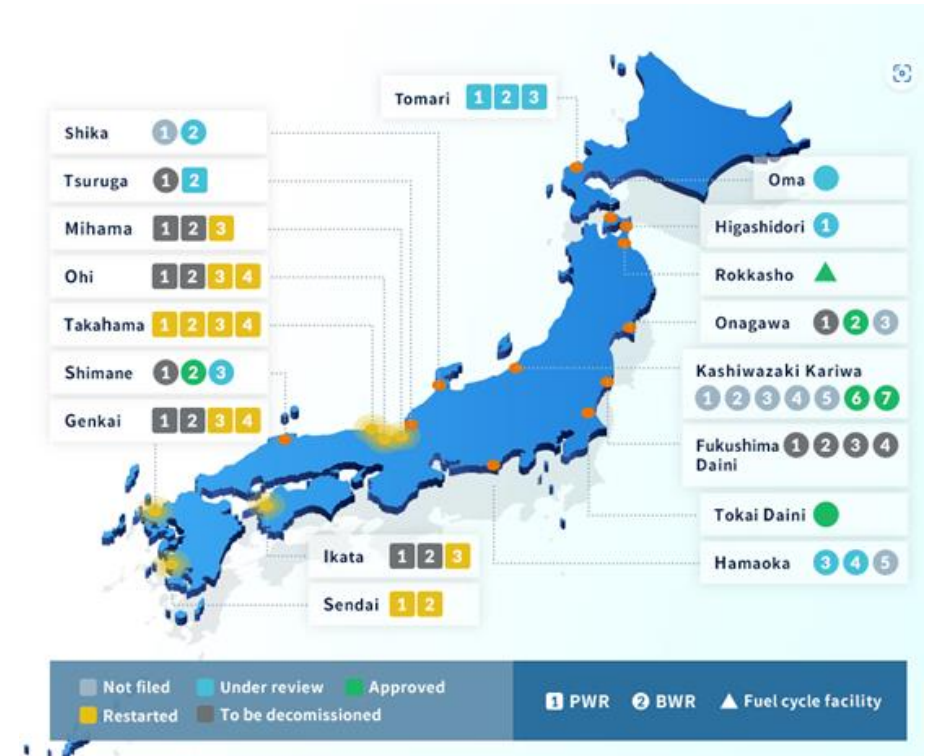
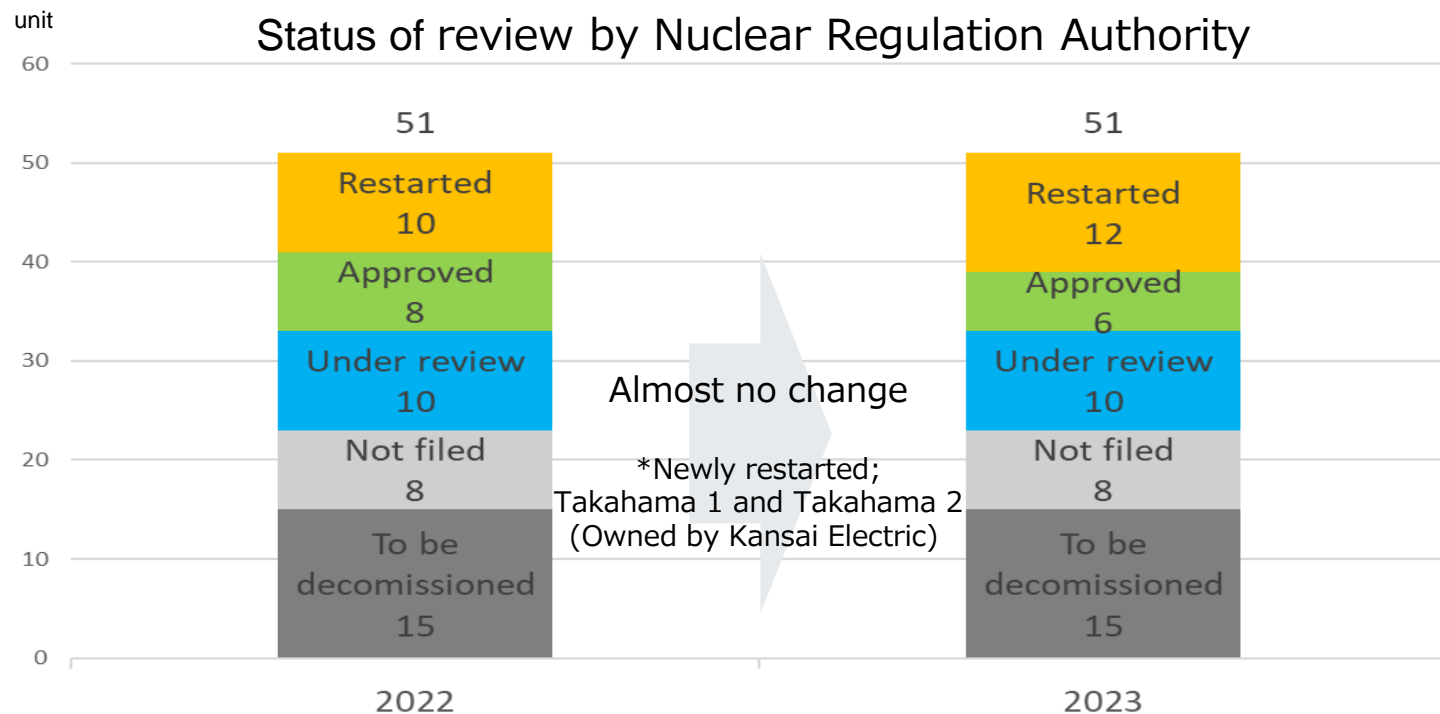
A scenario in which the prevailing changes will continue against the backdrop of current energy and environmental policies

IEEJ outlook “Advanced Technology Scenario” in Oct 2022

A scenario in which energy and environmental technologies are introduced to the maximum extent possible to ensure a stable supply of energy and strengthen measures against climate change

Status of Nuclear Facilities Restart

- ◆ Though Japanese government has announced "maximum" use of nuclear power to meet electric supply/demand balance and decarbonization in August 2022, only two units* restarted operations by September 2023 compared to 2022. (There was no change between 2021 and 2022)
- ◆ The first reason for the delay is that it requires time for review processes by the Nuclear Regulation Authority. And the second reason is that additional construction or consent of many stakeholders such as local governments are necessary after approval by the Authority.

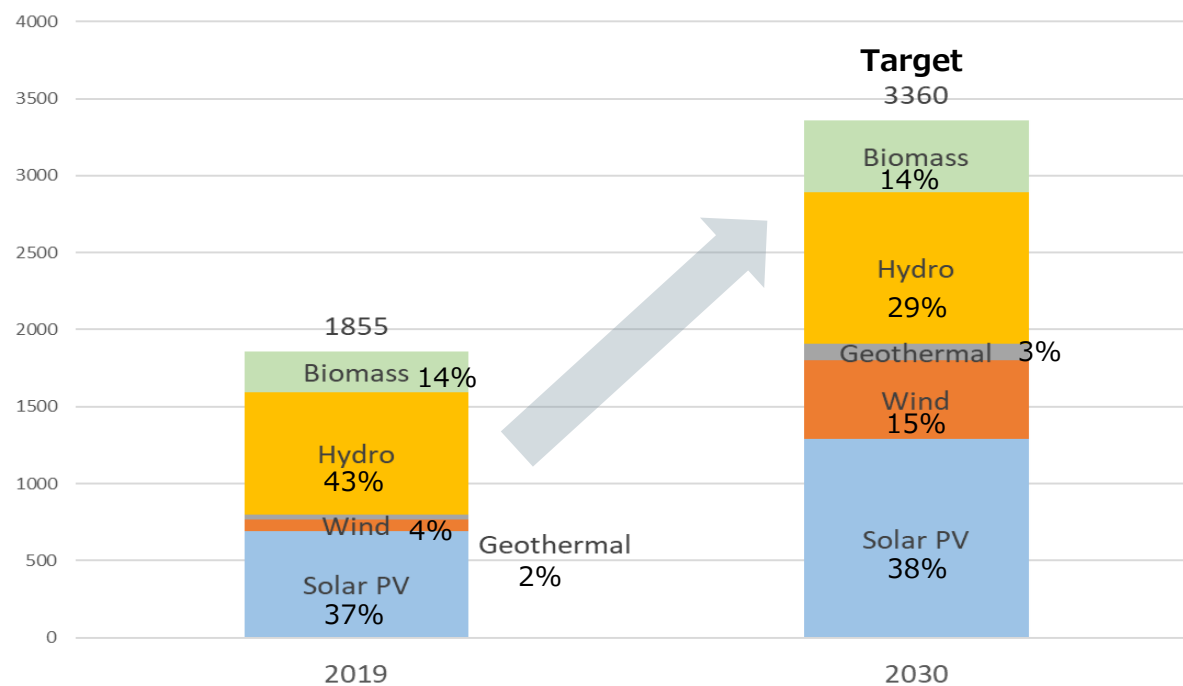


As of September 15, 2023

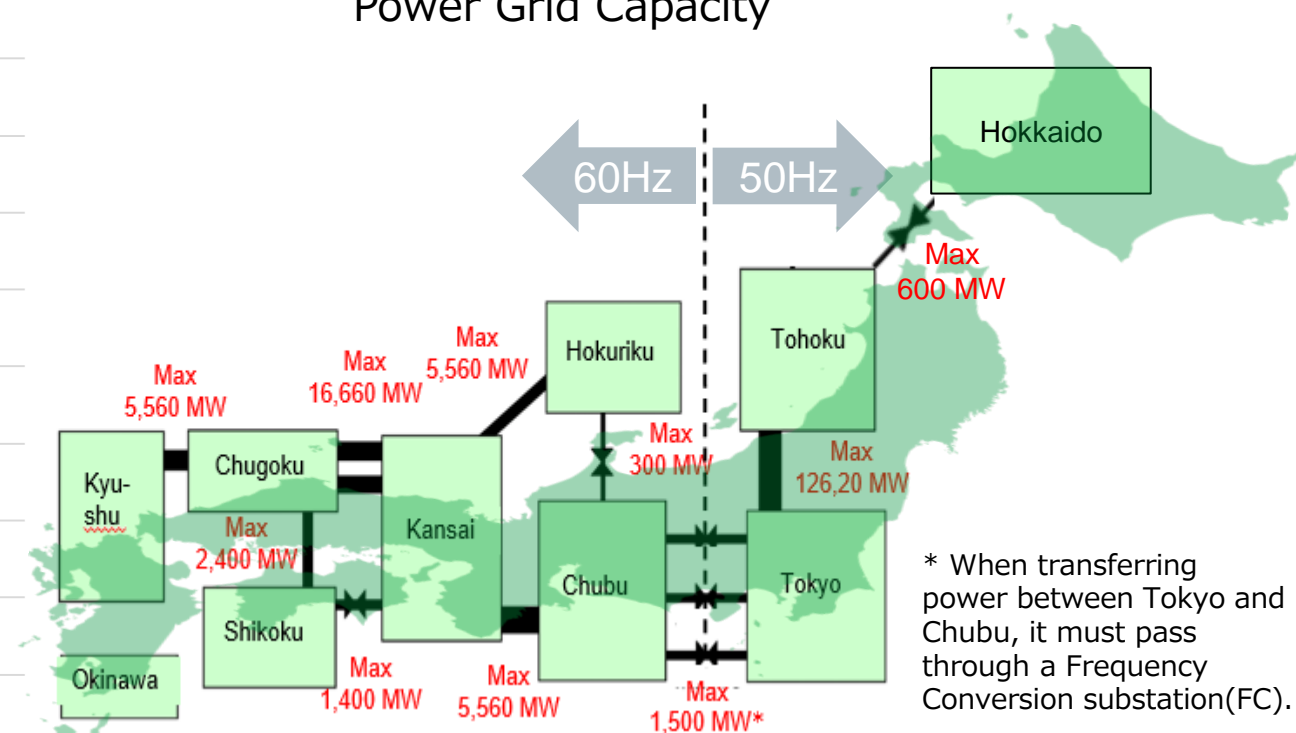
Status of Renewable Power Expansion

- ◆ Japanese government introduced Feed-in-Tariff and Feed-in-Premium systems to expand renewable power.
- ◆ However, the issues remain such as “Consent of local communities”, “Power grid constraints” and “Cost reduction”.
- ◆ Especially regarding “Power grid constraints”, even though the share of renewable power capacity increases, we can’t utilize such a variable energy at maximum due to the difficulty to transfer power flexibly because Japan is an island separated from other countries and power grid capacity among areas in Japan is limited. So, balancing by LNG becomes even more essential.

Target of renewable power expansion for 2030



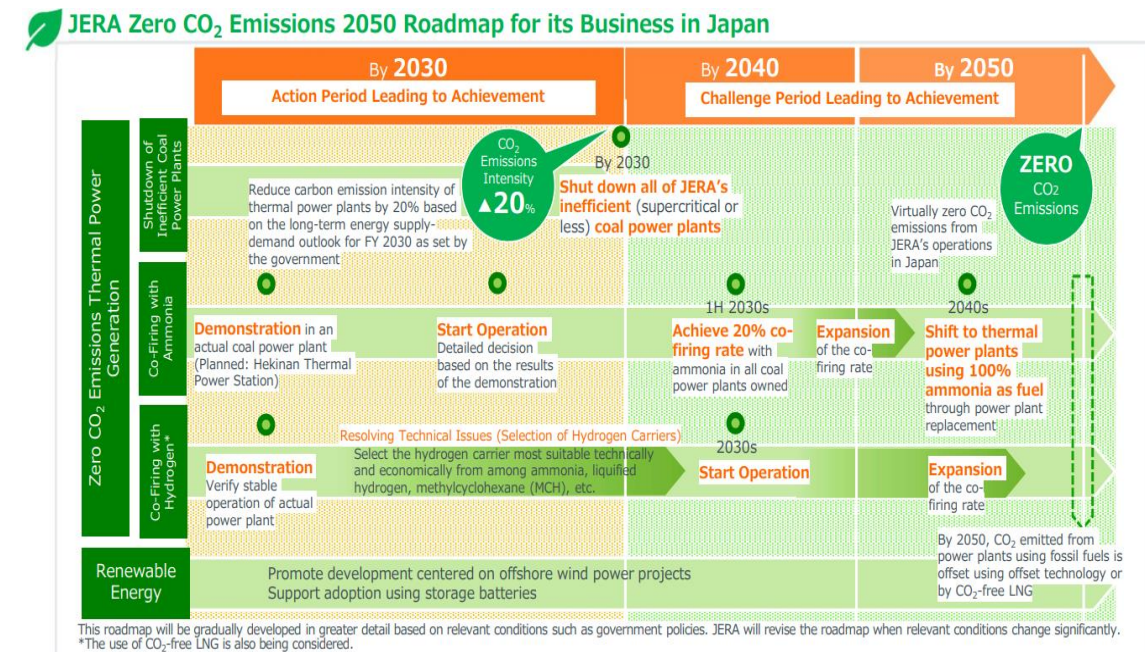
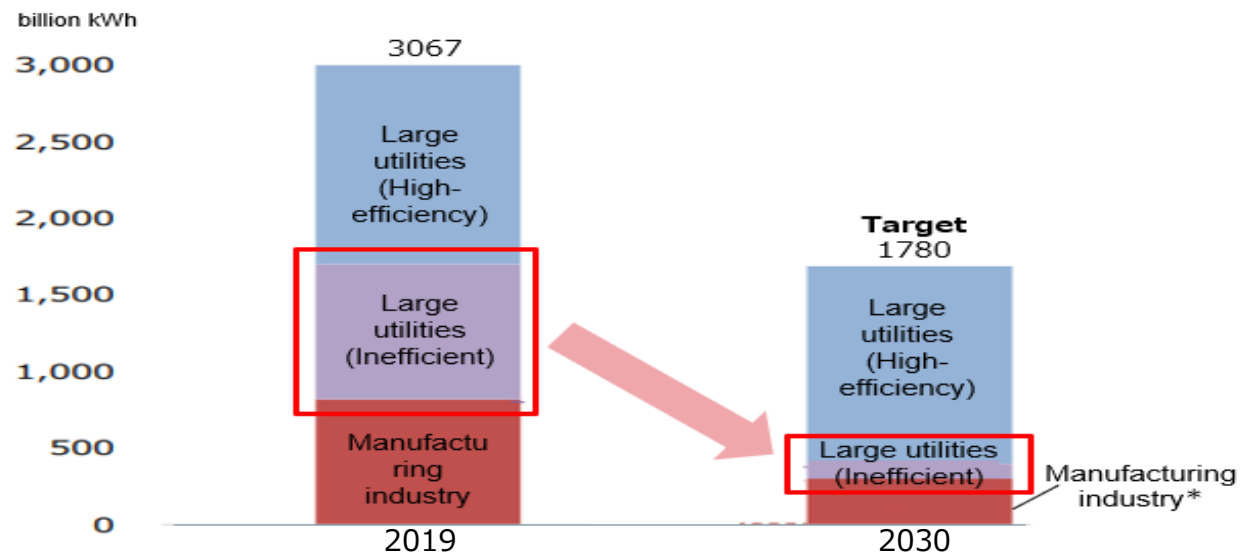
Power Grid Capacity



Status of Inefficient Coal Power Plants Shutdown

- ◆ Japanese government decided to reduce the share of coal power in energy mix by shutdown of inefficient coal power plants in the 6th Strategic Energy Plan.
- ◆ Government will reduce the Capacity payment received by power generation companies for inefficient coal power plants (SC or less) on the capacity market from 2025. And newly built thermal power plant must be efficient equivalent or over high-efficiency coal power plants (USC).
- ◆ JERA declared to shut down all inefficient coal power plants and conduct demonstration tests to substitute ammonia for coal at high-efficiency coal power plants by 2030 in “JERA Zero CO₂ Emissions 2050 Roadmap for its Business in Japan”.

Target of coal power fadeout for 2030





3. Recent Japanese Market Developments

(1) Strategic Buffer LNG “SBL”

Overview of Strategic Buffer LNG “SBL”

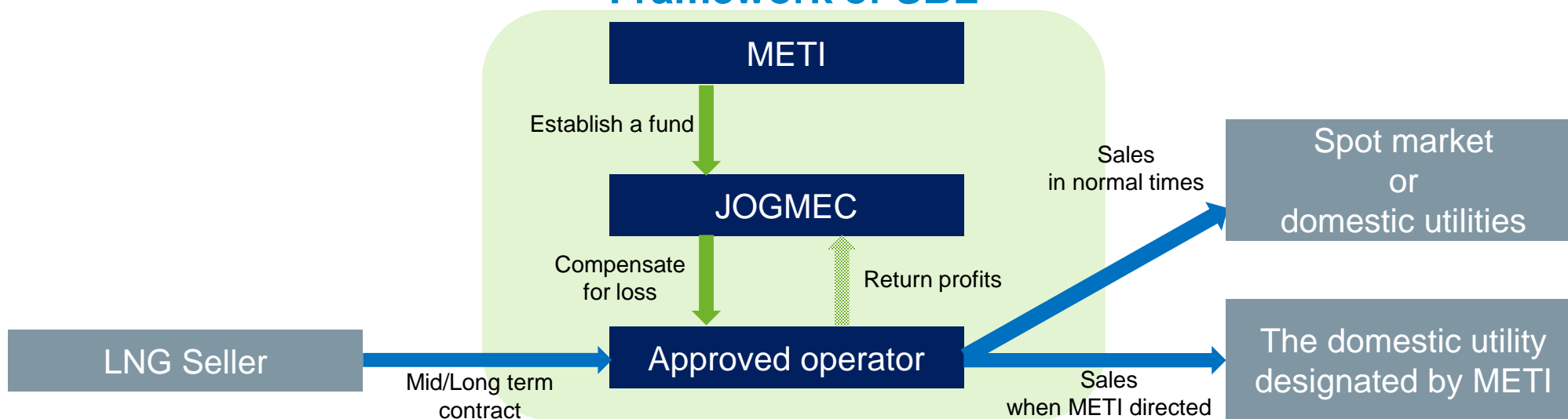
Goals set by METI

- To secure at least 1 cargo/month as SBL under short term contracts from December 2023 to February 2024
- To secure at least 1 cargo/month, namely 12 cargoes/year, as SBL under mid or long-term contracts from mid-2020s

Overview of SBL

- ① METI will establish a fund and designated JOGMEC as the administrator of the fund.
- ② The approved operator secures LNG cargo as “SBL” based on mid or long-term contracts.
- ③ SBL will be sold to spot market or other domestic utilities in normal times.
- ④ SBL will be sold to the designated domestic utility, when METI recognizes that SBL is needed due to tight supply-demand balance.
- ⑤ Profit from “SBL” cargoes sales will be returned to the fund.
- ⑥ Losses from “SBL” cargoes sales are covered by the fund.

Framework of SBL





(2) Coalition for LNG Emission Abatement toward Net-zero “CLEAN”

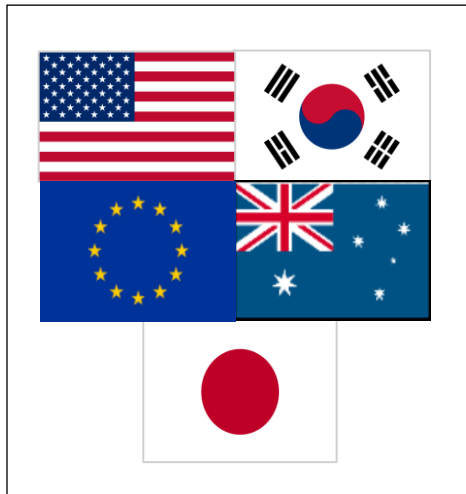
Overview of Coalition for LNG Emission Abatement toward Net-zero “CLEAN”

- ◆ CLEAN was established by JERA-KOGAS under a private framework and supported by the governments of the United States, South Korea, Australia, EU and Japan, as well as JOGMEC.
- ◆ The goal is to create momentum for international methane reduction by increasing the number of private sector participants.

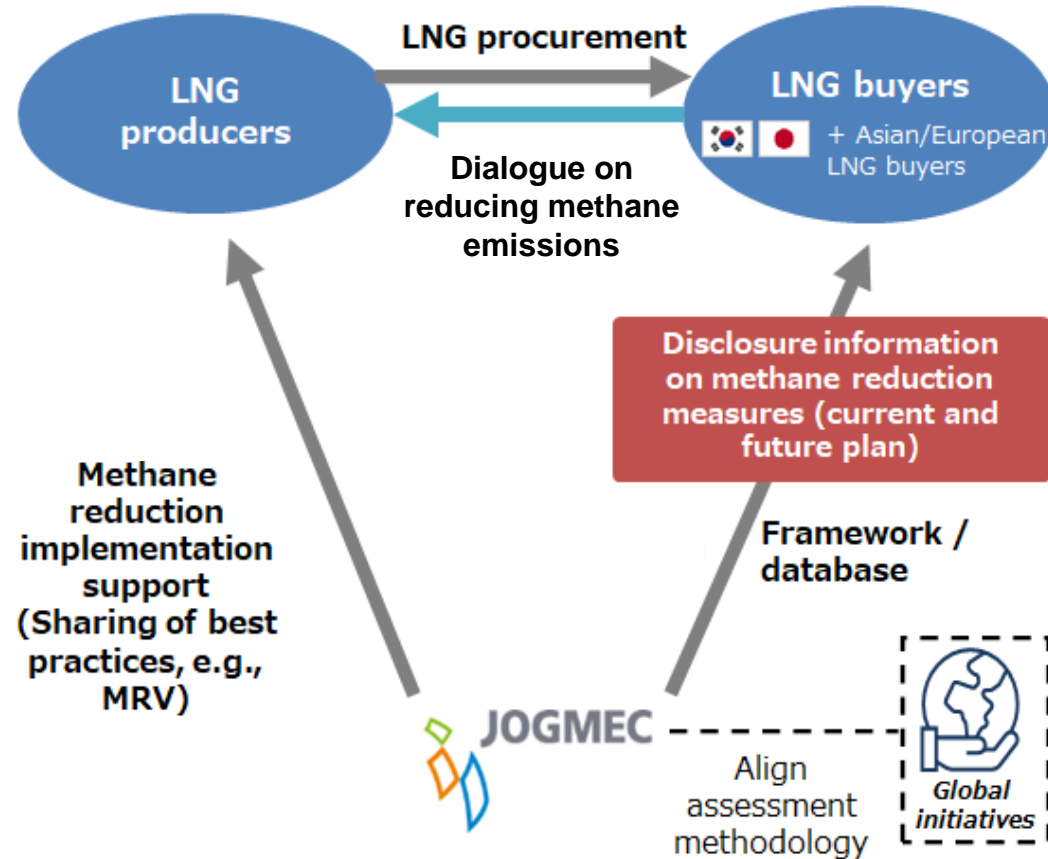
Framework of CLEAN

Joint statement at
LNG Producer-Consumer
Conference 2023

Governments support global
methane abatement activities
throughout the LNG value chain



Support



Participate
as needed

**Promotion of
participation
by other companies**



Thank you !