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1 The Agency for Natural Resources and Energy Released a Draft of the Long-Term Decarbonized Energy Auction Plan¹

On July 14, 2022, Japan's Agency for Natural Resources and Energy (ANRE), an agency under the Ministry of Economy, Trade, and Industry (METI), released a draft of its Long-Term Decarbonized Energy Auction Plan (referred to as 'the Plan') for Japan's capacity market. The Plan will provide incentives that promote the deployment of future decarbonized power sources while ensuring the recovery of the fixed costs from deployment.

Eligible decarbonized power sources are expected to include renewable energy (solar power, onshore and offshore wind power, etc.) as well as hydrogen and ammonia co-firing thermal power. The power generation operators that win bids are expected to be able to earn an income from their investments within the next 20 years after the start of operations to compensate for the costs. To secure a stable energy supply in the near term, the Plan also initially targets thermal power plants fueled by liquefied natural gas (LNG). The ANRE plans to hold the first decarbonized energy auction in Fiscal Year 2023 (FY2023).

1.1 General Overview of the Long-Term Decarbonized Energy Auction Plan

The Plan was released during the Eighth Interim Report of the System Review Working Group of the Electricity and Gas Policy Subcommittee, under the Advisory Committee for Natural Resources and Energy. Since the full liberalization of the retail electricity market began in April 2016, the temporary shutdowns and retirements of old energy sources, mainly thermal power plants, are expected to accelerate as a result of operators' economic decisions. The trend towards a decreasing number of thermal power plants has led Japan to consider taking structural measures in order to maintain a stable energy supply during this period of energy transition. Additionally, it will be necessary for the country to secure reserve margins for certain areas and periods due to the current energy supply crisis.

The Plan also highlighted the importance of reducing the power supply fluctuations caused by renewable energy and the need to create energy safety nets to address power supply shortages. In order to build the necessary supply capacity, Japan plans to introduce a decarbonized energy capacity market in 2024. The government also aims to stimulate some of the stagnant investments in newly developed clean energy facilities, which require a long period of construction and considerable investment, through the introduction of a mechanism that will secure the long-term fixed income to recover the huge investment.

The main requirements of the Plan include:

- **Eligible energy sources**

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https://www.meti.go.jp/shingikai/enecho/denryoku_gas/denryoku_gas/seido_kento/pdf/068_03_02.pdf

The long-term decarbonized energy auction is one of the prerequisites for reaching carbon neutrality. Eligible energy sources are limited to new investments in deploying power plants that do not emit CO₂ from electricity generation and distribution (decarbonized energy sources). However, due to current technical issues, it is still challenging to build 100% CO₂ emission-free energy sources, especially utilizing hydrogen and ammonia as fuel. Therefore, in the short term, the Plan also includes new and modified ammonia co-firing thermal power plants. The operators of these power plants will be required to prepare and submit a roadmap for their eventual transition into 100% clean-fuel combustion. The Plan does not cover biomass co-firing power plants.

- **Minimum bidding capacity**

The long-term decarbonized energy auction will be part of the capacity market. The minimum bidding capacity in the current capacity market is set at 1 MW, considering market operating costs and other factors. The auction is designed to provide more predictability through long-term compensation for new large-scale power generation, so the auction's operating costs are expected to be relatively high. As a result, the minimum bidding capacity for the eligible power sources in the auction would increase to 100 MW, which is expected to be roughly equivalent to a 74 million USD investment.

- **Basic investment period**

Considering the level of the burden shared by the public and the financial flexibility of the investment, the Plan sets the basic investment period for all types of power sources within the long-term decarbonized energy auction at 20 years. The period provides enough time for operators to predict the return on their investment. However, a plant operator can also be allowed to set a longer investment period than 20 years for the construction of a new power facility and the modification of existing power facilities.

2 Japan's Government is Ready to Restart Nuclear Power Plants

On July 27, 2022, Japan's government held the first meeting of the Green Transformation (GX) Executive Committee, which is responsible for fostering economic growth through the implementation of decarbonization activities. During the meeting, Japan's Prime Minister Fumio Kishida instructed the committee to present concrete actions to restart Japan's nuclear power plants as early as August to secure a stable energy supply. PM Kishida noted the purpose of the committee is to overcome the energy shortage crisis this summer and winter. While promoting the committee, PM Kishida also stated that Japan is ready to lay the groundwork for fully utilizing nuclear power plants.

2.1 Current Situation of the Energy Supply and Progress towards Restarting Japan's Nuclear Power Plants

Japan's government has sought to transition from its fossil fuel-centered economy, society, and industrial structure toward a clean energy society. The establishment of the Green Transformation Executive Committee is part of the government's ongoing efforts to review the current energy supply and demand issues and develop the appropriate measures to address them. The committee's first meeting discussed the measures necessary to rebuild Japan's stable energy supply and a 10-year decarbonization roadmap for Japan's economy, society, and industry.^{2 3} Restarting domestic nuclear power generation was presented as one of the solutions for securing a stable energy supply.

Since Russia's invasion of Ukraine began at the end of February 2022, energy security concerns have been increasing in Japan. As a result, the restart of nuclear power plants has been proposed by both the ruling party and opposition parties to suppress the soaring energy prices. On March 10, 2022, the Liberal Democratic Party (LDP), the ruling party, Diet Members' Promotion of a Stable Energy Supply Coalition adopted an emergency resolution calling for restarting suspended nuclear power plants. The resolution will be submitted later to the Kishida administration. Two minority parties, the Democratic Party for the People and the Japan Innovation Party, also agreed on the emergency resolution.⁴

There are criticisms that the review process by Japan's nuclear regulator, the Nuclear Regulation Authority (NRA), has become a bottleneck for delaying the restart of nuclear power plants. On May 12, the LDP's Advisory Committee on Nuclear Regulation issued an interim report that provides recommendations for enhancing and strengthening nuclear safety regulations and nuclear disaster prevention measures. The advisory committee called on the government to improve the efficiency of the review process, noting that many of the inspections imposed on nuclear plants are delayed far beyond the standard processing period of two years.⁵

² https://www.cas.go.jp/jp/seisaku/gx_jikkou_kaigi/dai1/siryou1.pdf

³ https://www.cas.go.jp/jp/seisaku/gx_jikkou_kaigi/dai1/siryou3.pdf

⁴ <https://www.yomiuri.co.jp/economy/20220310-OYT1T50308/>

⁵ https://jimin.jp-east-2.storage.api.nifcloud.com/pdf/news/policy/203553_1.pdf

Although the LDP's Advisory Committee on Nuclear Regulation emphasized the strong social demand that all power generation facilities that can be utilized be restarted as soon as possible, only ten reactors have passed the review process and restarted operations in the 11 years since the accident at the Fukushima Daiichi Nuclear Power Station.⁶

The Shimane No. 2 nuclear power plant, owned by Chugoku Electric Power Company (Energia), provides a good example of the many hurdles that plants must overcome to restart operations. The NRA approved the plant's nuclear accident countermeasure plan in September 2021, and Governor Tatsuya Maruyama of Shimane Prefecture approved the plant's restart on June 2, 2022. However, the power plant has not been restarted because it did not pass the new seismic evaluation standards in the NRA's stringent review process. Therefore, the original plan to submit the relevant documents to the NRA by March 2022 has been substantially delayed, and the subsequent process is not expected to be completed until around February 2023. In addition, the plant will still be required to conduct a review of its management procedures prior to plant operation.⁷

On July 14, 2022, prior to the committee's first meeting, PM Kishida stated that Japan would restart up to nine nuclear power plants by this winter to address the power emergency. In order to meet the energy demand this summer, more than ten thermal power plants across the country have resumed their operations based on the request by the Administration. Nevertheless, there are still concerns over the tight power supply this winter. PM Kishida has asked the Ministry of Economy, Trade, and Industry (METI) to resume and operate up to nine nuclear power plants, including plants that have already restarted but are suspended due to regular maintenance and safety inspections, so that nuclear power will meet up to 10% of Japan's entire energy demand this winter.⁸

2.2 Opinions/Statements by the Nuclear Power Industry and Economic Organizations

In Japan, the nuclear power industry and economic organizations have called for the restart of nuclear power plants. For example, on July 22, 2022, a nuclear industrial policy organization, the Japan Atomic Industrial Forum (JAIF), made a statement providing recommendations to the government for maintaining and strengthening the supply chain of the nuclear power industry. JAIF called for the restart of nuclear power plants as soon as possible, specified plans for new expansions and replacements of existing plants, and recommended that the government develop a business environment that allows investments in the expansion and replacement of nuclear power plants.^{9 10}

On June 17, 2022, Mr. Kazuhiro Ikebe, Chairman of the Federation of Electric Power Companies (FEPC) and President of Kyushu Electric Power (Kyuden), introduced the Restart Acceleration Task Force during a regular press conference. The FEPC

⁶ https://jimin.jp-east-2.storage.api.nifcloud.com/pdf/news/policy/203553_1.pdf

⁷ <https://www.tokyo-np.co.jp/article/181434>

⁸ https://www.kantei.go.jp/jp/101_kishida/statement/2022/0714kaiken.html

⁹ <https://www.jaif.or.jp/journal/japan/14057.html>

¹⁰ <https://www.jaif.or.jp/pressrelease/220722>

established the task force in February 2021 as an industry-wide effort to further accelerate the review of new regulatory standards for nuclear power plants.

On behalf of the industry, the task force will support the review procedures for accelerating nuclear restarts by creating a human resources support system. The task force will share the information from past reviews of nuclear power plants with utilities, including applications to restart power plants that have previously been submitted by utilities and approved by the NRA. It will also hold nuclear power plant restart preparation briefings to share the experience and knowledge from nuclear power plant reviews with utilities.¹¹

On July 22, 2022, Mr. Masakazu Tokura, the Chairman of the Japan Business Federation (Keidanren), delivered a statement on the implementation of sustainable capitalism at a summer forum held in Karuizawa, Nagano Prefecture that was attended by PM Kishida. Mr. Tokura called for the restart and expansion of nuclear power plants and noted that the public and private sectors need to promote the green transformation through maximum investment. Mr. Tokura also urged the government to formulate an effective roadmap to achieve carbon neutrality by 2050 and promote the use of decarbonized energy resources, including support for the development of innovative nuclear energy and reactors and addressing nuclear back-end issues.^{12 13}

¹¹ https://www.fepc.or.jp/news/_icsFiles/afieldfile/2022/06/17/kaiken_20220617.pdf

¹² <https://www.keidanren.or.jp/speech/kaiken/2022/0722.html>

¹³ <https://www.keidanren.or.jp/policy/2022/071.pdf>

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