

Summary of Press Conference Comments Made by Kingo Hayashi,
FEPC Chairman on April 18, 2025

I am Kingo Hayashi of the Federation of Electric Power Companies of Japan.

Today, I will talk about two topics: 1) the opening of Expo 2025 Osaka, Kansai, Japan and 2) number of EcoCute units shipped exceeding 10 million units. Before I move onto the main topics, I want to briefly touch on the 8th Spent Fuel Measures Council held yesterday.

I'm sure many of you in the media were on the site covering the event. At the start of the Council meeting, we, on behalf of all nuclear operators, talked about our impression of the 7th Strategic Energy Plan and the progress made in regards to the Spent Fuel Measures Promotion Plan.

In response, Mr. Yoji Muto, Minister of Economy, Trade and Industry, requested that the industry comes together to help Japan Nuclear Fuel Limited (JNFL) complete construction of its plants and to further strengthen cooperation on spent fuel measures. We also believe the content of these requests are extremely important as well.

I made clear again that we will support JNFL's efforts to complete the construction of the reprocessing plant putting all our best for stablishing the nuclear fuel cycle quickly. We will also cooperate and coordinate among utilities to address challenges shared by the industry, which include advancing the Spent Fuel Measures Promotion Plan. The industry will come together to proceed with necessary discussions and initiatives to steadily establish the nuclear fuel cycle business, including final disposal.

Going back to the main topics for today, I first want to talk about Expo 2025 Osaka, Kansai, Japan. As mentioned previously, the Expo officially opened on

April 13. As a representative of an exhibitor, I also participated in the Opening Ceremony held the day before the official opening. The Ceremony was an exuberant display of cutting-edge technology and Japanese culture. It was a lively and well-attended event, including by dignitaries from other countries, that portends the success of the Expo.

On the next day, the day of the opening, we held the opening ceremony for the “Electric Power Pavilion—Eggs of Possibilities” that the FEPC hosted. I walked around the pavilion again after the tape cutting ceremony, and am proud to say it is a great pavilion from which children, on whose shoulders the next generation rests, will be able to learn while enjoying themselves.

The FEPC has participated in Expos four times in Japan. We have communicated the history of energy and its importance in line with the times to a total of around 19.2 million people.

The theme of our 5th pavilion is “New energy possibilities for a brighter future.” We will be depicting a society in the future beyond 2050 when we aim to achieve carbon neutrality from the perspective of the electric industry that underpins society’s infrastructure.

Visitors, as they enter the pavilion, get to choose a glowing egg that they hang around their neck and walk around the pavilion. This is the egg-shaped device that visitors carry. It engages visitors by lighting up and vibrating with the exhibits and experiences in the pavilion.

The main area introduces around 30 types of energy that could help support our future society. Each visitor can experiment with energy technologies of the future through game-like experiences that focus on the interesting facts and characteristics of each energy.

One exhibit I've tried is the atomic fusion exhibit, where many glowing orbs that represent the nucleus of deuterium and tritium appear on the table. Visitors can experience fusing these glowing orbs with the egg-shaped device. They can score points when energy is successfully generated by fusing these two glowing orbs that repel each other. This exhibit lets the visitors experience the principle of atomic fusion where multiple nucleuses fuse to generate a large amount of energy.

We have also put a lot of effort into collaborating with local college students and startups in creating this pavilion. An example of this is the multi-language support we offer to welcome visitors from many different countries, as announced previously. We have some signs in over 30 languages with the cooperation of Osaka University's language club "GGC" and the startup, PIJIN.

The locally based Kansai EPCO Group is also deeply involved in this Expo beyond the scope of this pavilion—it is providing zero-carbon electricity generated using hydrogen, and is involved in a land, sea, and air mobility project. We are cooperating with various countries and taking on challenges to establish viable energies for the future.

It has been around 20 years since the last time the Expo, which features the future of many different technologies, was held in Japan. I'm excited to welcome a lot of visitors to the pavilion.

Moving on, I'd like to talk about the news of EcoCute units shipped exceeding 10 million.

As you well know, EcoCute is an environmentally friendly boiler that uses a heat pump. Since it was developed in 2001, we, electric utilities, have been working to expand its adoption. Also with the cooperation of manufacturers, retail stores, and house builders in expanding market share, we have achieved this milestone of 10

million units shipped. I'd like to take this opportunity to pay my respects for those who helped achieve this milestone.

As we announced today for the media to report on, we are planning a commemoration ceremony on May 15. I hope the media will cover that too.

The heat pump in EcoCute uses a mechanism that allows the demand-side to capture and make good use of atmospheric heat, which is a type of renewable energy. It can be expected to use in air conditioning, hot water boilers, and other equipment as we work toward the goal of achieving carbon neutrality by 2050. The 7th Strategic Energy Plan that passed the cabinet the other day also highlighted the importance of the heat pump.

The number of EcoCute shipped exceeded 10 million units this time. Assuming that all of the 10 million EcoCute units that was shipped thus far replace traditional gas combustion boilers, that would be equivalent to CO2 reductions of approximately 3.79 million tons per year.

It can also be used in output control which has been gathering attention as the number of photovoltaic facilities and other renewable power sources rises sharply. EcoCute usually boils water during the night; however, during the spring or fall when the amount of power generated by solar power exceeds demand, the solar power from day time can be used effectively for EcoCute by shifting its use to midday. It is expected to be useful in this form of demand-response and manufacturers are currently conducting R&D.

Heat pumps also have a role to play in commercial and industrial contexts in addition to homes. By combining them with supply-side decarbonization efforts such as the use of nuclear power and renewable energy, we can hope for even more reductions in CO2.

According to estimates from the Heat Pump & Thermal Storage Technology Center of Japan (HPTCJ), as of FY2022, there were around 7.5 million household water heaters in stock, around 46 thousand commercial water heaters and 350 MW of equipment capacity in the industrial heating sector.

In a scenario where widespread adoption progresses as necessary to achieve carbon neutrality by 2050, household water heating will need to expand by approximately 5 times, commercial water heating by about 20 times, and the industrial heating sector will require nearly 300 times the current adoption.

If we are able to achieve this scenario, it would mean a reduction in CO2 emissions exceeds 100 million tons per year by 2050. This is equivalent to around 11% of the CO2 emissions for 2020 from energy, which was around 967 million ton.

As you can see, heat pumps that use atmospheric heat, a renewable energy, is a technology that has an extremely high potential for reducing CO2 emissions. Meanwhile, even though it uses atmospheric heat as a renewable heat source, its use as energy is not reflected in the official energy statistics.

In Europe, it is already being included in such figures. Measuring its use by including atmospheric heat in energy statistics, as is the case in Europe, will help improve Japan's energy self-sufficiency rate. It will also expand the amount of renewable energy available in Japan, which may lead to increased use of heat pumps, and help with achieving Japan's carbon neutrality goals. I ask that the national government consider assisting the adoption of heat pumps and including atmospheric energy in official energy statistics. As utilities, we are committed to continuing to promote the adoption of heat pumps.

This concludes my remarks for today.

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