

The EU-Japan Centre for Industrial Cooperation ZOOM webinar

New Developments in Japan-EU Hydrogen Cooperation -Towards the Realization of a Hydrogen Society-

Wednesday, June 26 17:00~18:00 Tokyo (10:00~11:00 Brussels)

Mr. Yasuo Tanabe, *Managing Director Japan Side, the EU-Japan Centre for Industrial Cooperation*, made opening remarks:

The Hydrogen Society Promotion Act was enacted earlier this month, strengthening policies related to the importance of hydrogen within the GX framework, which is similarly emphasized in the EU. Earlier this month, European Commissioner for Energy Kadri Simson visited Japan and issued a joint statement with Ken Saito, Minister of Economy, Trade and Industry (METI). They also engaged in discussions with the industry, highlighting hydrogen as a common theme between Japan and the EU. Today, we are honoured to welcome Mr. Inoue, Director-General of the Agency for Natural Resources and Energy, METI, who is responsible for hydrogen-related policies, as the keynote speaker.

Mr. Hiroo Inoue, *Director-General, Energy Efficiency and Renewable Energy Department, Agency for Natural Resources and Energy*, delivered the presentation:

GX and Hydrogen Policies

Since Japan has the lowest energy self-sufficiency rate among advanced nations, it must achieve carbon neutrality while ensuring energy security. It is believed that without breakthroughs through innovation, achieving the roadmap to carbon neutrality by 2050 will be challenging, and specific outlines to achieve the goal are not yet clear. As a policy under the GX Promotion Act enacted last year, the government has issued GX Economic Transition Bonds totalling ¥20 trillion to strongly support companies actively engaged in GX. With this ¥20 trillion, it aims to attract over ¥150 trillion in public and private investments over the next decade. Additionally, the introduction of growth-oriented carbon pricing is also planned. Of the ¥20 trillion in GX Transition Bonds, ¥13 trillion has already been allocated for purposes including support for hydrogen price differentials, with the remaining ¥7 trillion to be decided in due course.

Hydrogen is expected to be applied for a wide range of use including hard-to-abate industrial sectors, and is described as a strategic item in the GX era. The Hydrogen Basic Strategy formulated in 2017 sets annual introduction targets and cost goals, aiming to achieve cost parity with fossil fuels by 2050; however, due to its high prices, hydrogen has not been widely supplied and used yet. In Europe as well, there is a significant move towards effective utilization of hydrogen, with plans for establishing hydrogen banks and introducing regulations. Notably, it is planned to mandate a renewable hydrogen ratio of 42% by 2030 and 60% by 2035 in industrial sectors.

Japanese government revised the Hydrogen Basic Strategy last year to strongly support initiatives leveraging Japanese hydrogen technologies which can ultimately lead to success in business. Through integrated regulatory support, efforts are made to accelerate widespread use of hydrogen, create a domestic market, and cater to initial demand in expanding markets in Europe and the US, while preparing for future Asian markets through early investments. Approved projects will be supported under the recently enacted Hydrogen Society Promotion Act, including subsidies for price differentials and facility development. Special provision of High-Pressure Gas Safety Act, Port Act, and Road Act are introduced as well.

Expansion and Strength of Hydrogen Supply Chains / International Cooperation

GX Supply Chain Budget is utilized to strengthen the supply chains using Japan's cutting-edge technologies, thereby boosting industrial competitiveness. In terms of international cooperation, at the G7 Summit last year where Japan chaired, it was agreed upon the importance of evaluating hydrogen in terms of CO2 emissions (the concept of carbon intensity). Substantial cooperation between Japanese and European companies has also begun. In this context, European Commissioner for Energy Kadri Simson and European hydrogen-related companies visited Japan on June 3, where a high-level Japan-EU Hydrogen Business Forum and a meeting for exchanging opinions between Japanese and EU companies were held. Along with five memoranda of cooperation involving the public and private sectors, a joint statement was issued between the two ministers. It is reassuring that seven Japanese companies participating in this meeting have expressed commitments to domestic investments or loans totalling ¥4 trillion in the future.

Update of the GX Meeting

Comprehensively examining GX industrial structure, industrial location, and ensuring robust energy supply, Prime Minister Kishida has instructed the formulation of a GX 2040 vision with a longer-term perspective. In addition to the aforementioned three points, specific measures are being considered for the design of systems aimed at creating the GX market. Looking ahead, it is intended to revise the Basic Energy Plan within the fiscal year, considering the importance of collaboration with Europe among other aspects.

Mr. Hiroshi Fukushima, Senior Managing Officer and Executive Officer, Iwatani Corporation, shared the presentation:

I would like to provide an overview of JH2A (Hydrogen Value Chain Promotion Council) and Iwatani Corporation. JH2A was established two years ago with the aim of creating a hydrogen society as a cross-industry and open organization overseeing the entire supply chain. The co-chairs are from Iwatani Corporation, Toyota Motor Corporation, and Sumitomo Mitsui Financial Group. It consists of 25 corporate directors and approximately 450 member companies, organizing activities such as business development committees and international standardization efforts related to low-carbon hydrogen. Currently, we are exploring hydrogen production methods tailored to the characteristics of various regions in Japan and reviewing regulations according to the identified challenges. Additionally, we launched a hydrogen fund last year to facilitate the establishment of new businesses and promote the utilization of hydrogen.

Iwatani Corporation with a long history in handling hydrogen dominates the domestic market share in liquefied hydrogen sales and hold a 70% share in combined compressed and liquefied hydrogen sales domestically. Recognizing the importance of domestic hydrogen production, we have launched a project to produce hydrogen from waste plastics near Nagoya Port. We are expanding our domestic hydrogen station business, operating 51 stations nationwide, and progressing with the establishment of hydrogen stations for commercial vehicles. This initiative aligns with government policies.

Mr. Kenji Yoshimura, Executive/Group Manager, Project Group, Hydrogen Strategy Division, Kawasaki Heavy Industries, Ltd., made the presentation:

Our company specializes in transporting hydrogen in the form of liquefied hydrogen. We have a 40-year track record in the "transport and storage" technology of liquefied hydrogen, and we have been challenging ourselves in recent years to transport hydrogen using large-scale transportation vessel similar to LNG carrier, aiming to make hydrogen widely used and reduce costs. As part of our projects aimed at hydrogen commercialization, we plan to conduct commercial demonstrations up to 2030 using GI, and utilize GX for commercial implementation from 2031 onwards. For the GI commercial demonstration, we are currently preparing to transport 20,000 to 30,000 tons of liquefied hydrogen annually using a large

carrier. We have initiated promotions globally towards the commercialization of the liquefied hydrogen supply chain, and recently signed a memorandum of understanding with Daimler Truck regarding collaboration on constructing the supply chain for Germany and establishing a European network of liquefied hydrogen stations. Additionally, as part of joint development research with NEDO, we are progressing with 100% hydrogen power generation demonstrations in cooperation with RWE in Germany. Furthermore, we are involved in the Hydrogen Small Mobility Engine Research Association (HySE) and are collaborating with other companies on the development of hydrogen bikes using small hydrogen engines. A common challenge we face is the cost hike due to unforeseen environmental changes. Plant costs have doubled compared to 2010, and we are recently experiencing higher consumer prices. Similar situations are expected in Europe as well.

The following questions were raised in the Q&A session.

- (Question to Mr. Inoue) Regarding the ¥3 trillion price differential support, it seems to aim for around \$2 per kilogram to achieve fossil fuel parity or LNG parity. Current costs amount 3 to 5 times higher and ¥3 trillion may not cover this entire difference. Are there plans to implement additional regulatory measures like the EU does to create a hydrogen society by 2050? Could you provide insights on this aspect?
- (Question to Mr. Inoue) The last paragraph of the EC-METI joint statement mentions trade-related regulatory requirements. Could you please explain the meaning of this?
- (Question to Mr. Yoshimura) Will the use of hydrogen gas turbines for power generation increase in Europe in the future? Is the hydrogen 100% power generation demonstration with Germany's RWE the world's first attempt?
- (Question to Mr. Yoshimura) From which base will liquefied hydrogen be transported to Europe? Will you utilize support from H2 Global?

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