

Opening Remarks

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Thank you for the introduction. I am KASHIWAGI Takao.

Three years have passed since I was appointed as the President of the Tokyo Zero-emission Innovation Bay (Zero-Emission Bay).

Today, this symposium has a large number of participants, indicating the significant momentum that Zero-Emission Bay has gained toward achieving carbon neutrality. Over 130 companies are members of Zero-Emission Bay, and major companies have high expectations and execute research and development toward carbon neutrality around Tokyo Bay in three different prefectures.

As you know, the pathway to carbon neutrality seems to raise numerous difficulties ahead, especially for small - to - medium - sized enterprises. If that is the case, how can we be successful in creating carbon neutrality? Generally, it is energy conservation in the first place.

The second, vehicle electrification would be very important, as CO₂ emissions from vehicles account for 17% of all.

How can we turn considerably variable renewable energy into useful energy with better stability? The third answer is the power-to-gas, specifically, hydrogen. The hydrogen can be used directly or can be converted into other forms of energy.

In Japan, approximately 40% of the renewable energy generated is used for electricity while the remaining 60% is used for heat. Hydrocarbons based petroleum are commonly used as a major source of heat, and these hydrocarbons can be separated to produce hydrogen, which is being explored for optimal utilization, for example, hydrogen-based e-fuels. Effective time management of intermittent renewable energy plays a crucial role in achieving carbon neutrality through e-fuels applying heat storage.

The original target of limiting the global average temperature increase to below 2°C above pre-industrial levels with an 80% reduction in CO₂ emissions for 4-5JPY/kg has been revised to a more ambitious target of 1.5°C with 100% CO₂ reduction to maintain a healthy ecological system.

We must invest in technology that delivers high performance at an affordable cost to achieve the ambitious goal. In light of this, the hydrogen has recently attracted much attention as a potential solution for carbon neutrality.

GX is another area of interest for achieving carbon neutrality, and it is essential to ensure efficient collaboration with DX, including smart metering, BEMS, HEMS, FEMS, CEMS, and digitalization in various sectors.

The successful implementation of GX depends on the effective support provided by DX to control energy demand. DX prioritizes managing energy demand effectively through zero-emission electricity, rather than solely focusing on energy saving as traditional carbon neutral methods have done.

Combining GX and DX is critical in any aspect of achieving carbon neutrality.

Although Japan has strengths in DX, it comes behind other advanced nations, ranking 29th out of 63 nations for this year, 29th for last year, and 28th for the year before last, according to the Institute for Management Development (IMD) in Switzerland. Denmark, the USA, Sweden, Singapore, and Switzerland are the top five nations in recent years.

The hierarchical management system of Japanese government ministries may hinder GX development, making the role of the Digital Agency vital for effective implementation, in my opinion.

How hydrogen can effectively combine with intermittent renewable energy means a lot, as it lacks stability. Assuming situations where electricity tightening occurs, it is necessary to produce hydrogen from the renewables whenever possible, and if it happens, reduce the demand.

The Smart House is a successful example of indispensable coordination between GX and DX. Along with carbon neutrality, a well-coordinated approach would also create a business model to boost Japan's strength.

Now, we will open the symposium with the congratulatory address from Mr. Nagamine, Parliamentary Vice-Minister of Economy, Trade and Industry, followed by Mr. KIHARA's keynote lecture from METI. He holds the position of Director General for International Policy on Carbon Neutrality, whose title length shows the broad range of his commitment and is responsible for all aspects of carbon neutrality both internationally and domestically including the connection with G7.

Various presenters will be showing up, including an advanced company and local government, followed by the broad-ranged panel discussion titled Efforts toward Carbon Neutrality and Systems Thinking. Professor Matsushashi from the University of Tokyo will moderate the discussion with four panelists from METI, ENEOS, Kawasaki City, and AIST to step forward to practicing carbon neutrality.

I Hope this symposium will be beneficial and worthwhile for you.

Thank you very much for your attention.