

“Unlocking Japan's Renewable Energy Future”

Webinar Summary

Honorable KOIKE Yuriko, Governor of Tokyo - Delivered a strong message, “We have no time to lose in the race against climate change; we have to accelerate our concrete actions.” The Tokyo Metropolitan Government (TMG) is leading the charge against climate change and is collaborating with cities around the world to share knowledge and initiatives aimed at resolving issues. To this end, TMG’s goals include halving carbon emissions by 2030, via a strategy entitled “Carbon Half,” and reaching zero emissions by 2050.

As part of these goals, renewable energy will be a major source for TMG. Specific actions they are taking include saving, generating, and storing electricity across the built environment. TMG recognizes that taking effective measures for buildings is essential for achieving zero emissions.

Measures to date have included: (1) Operating an urban Cap-and-Trade program, which requires large office buildings and other facilities to reduce emissions. Since its inception in 2010, it has achieved a 33% reduction in emissions through this program; (2) Enacting a new ordinance requiring businesses that supply over a certain number of new houses in Tokyo to install solar panels. This system will come into effect in April 2025; (3) A group-buying scheme that gives a 10% discount on solar panels and storage batteries when purchased by a group of consumers; and, (4) Doing joint research with the commercial sector to implement next-generation solar cells.

TMG has also been proactive in decarbonizing its transportation sector. It intends to phase-out the sale of new gasoline-only cars in Tokyo by 2030 and new gasoline-only motorcycles by 2035. It is also mandating new buildings over a certain size to install ZEV chargers and is accelerating the installation of EV chargers at TMG facilities.

TMG sees hydrogen as the key to achieving both a decarbonized society and energy security. It will consider building supply networks, including pipelines, for hydrogen imported from overseas.

Governor Koike reiterated, “the issue of climate change knows no borders. We must take action now. It is ‘TIME TO ACT.’ Let’s go forward together.”

Following Governor Koike's powerful remarks, **Ayako Kameda, Ph.D., General Manager, Shell and USJC Board of Directors (Japan) Member**, moderated an in-depth panel discussion. Key takeaways from each panelist and group discussion follows.

Naoaki ("Nick") Eguchi, Partner and Co-Head Renewable Energy Group, Baker McKenzie, Tokyo - Discussed the rapid increase of renewable energy under operation in Japan in the last 10 years since Feed-in-Tariff (FIT) started on July 1, 2012. By 2019, Japan's national energy portfolio had reached 18% renewable power across various sources (geothermal, biomass, wind, solar, and hydro). In October 2021, the Japanese Cabinet approved doubling renewable power to 36-38% of Japan's national energy portfolio by 2030. This includes doubling solar production, increasing wind production 5x, and increasing biomass power production by 60%. To achieve this target, Japan needs unprecedented deregulations (e.g. repurposing of abandoned agricultural land for solar energy production or wind; extension of solar sharing exemption from 10 to 25 years; designation of renewable promotion areas to accelerate development; increase grid side battery projects with METI subsidies; etc.). Mr. Eguchi also introduced the concept of a Virtual Corporate PPA framework and discussed the various issues pertaining to the Feed-in-Premium tariff (for 1 or megawatt (MW) of energy projects) that was introduced in April of 2022, including the low turnout of bids for solar, energy curtailment, local solar panel tax, and the local forest tax that is under discussion.

Ken Haig, Ph.D., Head of Energy and Environmental Policy, APAC, Amazon Web Services (AWS) - Opened his remarks by noting that Amazon's strategy is to maximize energy efficiency and meet the rest of its energy demand through renewable energy resources. Its goals include: (1) The Climate Pledge - commitment to meet the Paris Agreement 10 years early; (2) Net Zero carbon by 2040; (3) Achieve a path to 100% renewable energy by 2025 -- to this end, Amazon already has 400 projects around the world; and, (4) Invest billions of dollars to accelerate low carbon innovation (e.g. \$2B Climate Pledge Fund; \$100M Right Now Climate Fund; and AWS Clean Energy Accelerator).

Amazon is approaching its climate change goals through collaborative efforts that include working with industry and governments to expand the availability and affordability of renewable energy across APAC and supporting USJC's Climate and Sustainability Initiative.

Dr. Haig noted that Amazon is the largest corporate buyer of renewable energy globally and leads on corporate PPA-backed utility-scale aggregated solar projects in Japan, including 70 MW aggregated solar projects with Itochu and 22 MW aggregated solar projects with Mitsubishi.

He also noted how cloud computing is accelerating the clean energy transition. Specifically, organizations around the world are already leveraging the power of the cloud to modernize and transform regional grids to improve reliability and resiliency, and to help integrate renewable energy resources more quickly and effectively. Examples include TRENDE, which uses the cloud to expand solar power offerings and renewable energy retail options for Japanese residential customers and aggregated peer-to-peer trading. Another example is Greenko, India's leading renewable power developer, with 7.5GW total installed capacity, which is using cloud computing to maximize operational efficiency.

Yusuke Matsuo, Director of Business Task Force, Institute for Global Environmental

Strategies (IGES) - Highlighted that in Japan, offshore wind power, especially floating wind, has by far the highest potential compared to other renewable energy sources. Within Japan's territorial seas, fixed offshore wind potential is 128 GW and floating offshore wind potential is 424 GW. If the Exclusive Economic Zone (EEZ) of Japan is included, then the floating offshore wind potential is greater than 2,000 GW.

Upon the conclusion of the individual remarks, Dr. Kameda moderated a group discussion. Key takeaways from this discussion were:

- In Japan, there is national and regional government authority to boost renewables.
- In terms of policy making in Japan, there is a question on how to set policy at a national level that can then be implemented at the prefecture level.
- Hawaii is a leader in setting renewable energy ambitions and a test case for managing the rapid influx of renewables on the grid on an island basis.
- Unfortunately, there are not a lot of additive retail options for green utility-scale power in Japan. Expansion of renewable energy supply is needed. Virtual power purchase agreements (PPAs) need to be further socialized and corporate PPAs expanded.
- There is a need to make renewable energy more affordable in Japan.
- Insufficient supply exists to meet the demand for renewable energy in Japan but the supply is lacking. This is not a technology or consumer problem; it is a policy/regulatory problem.
- There is a need to have a more diverse set of decision makers within Japan's government to look at alternatives to fossil fuels for energy generation.
- Japan has a difficult time changing (especially government administrators) but needs to make a jump now into renewable energy. This jump is something that politicians can champion. To fulfill the renewable energy potential, difficult conversations need to take place about decarbonization and competition in various sectors, not just from the business perspective. From a macro perspective, the current business model in Japan is

no longer applicable and needs to change. Government administrators, politicians and industry need to work together on this change.