

"Fusion, Breaking Through The Technologies, Policies, & Partnerships Accelerating the Next Energy Revolution"



Institute for Education

Harnessing the power of data, innovation and soft diplomacy in the global community.

Thursday, April 27, 2023
Washington, DC



"What happens when the energy of the stars, the energy from which all other energy arises, is available to all of us?" U.S. Representative Don Beyer echoed perhaps one of humanity's most hopeful visions that brought scientists, government officials, and business folks together last week to collaborate on nuclear fusion energy. Hosted at the elegant and serene residence of Japanese Ambassador Koji Tomita, the IFE Salon on Fusion convened American and Japanese leaders with the shared goal of building the scientific, industrial, and economic frameworks needed for fusion to usher in an era of safe, abundant, and scalable zero-carbon energy.

Technological breakthroughs after breakthroughs have elevated the status of fusion as an alternative energy source from impossible to probable. With the recent announcement of an experiment reaching net energy gain at Lawrence Livermore National Laboratory, fusion energy has been gathering worldwide attention. Just as exciting, California-based TAE Technologies and Japan's National Institute for Fusion Science (NIFS) reported in February's *Nature* the successful development of the first world's proton-boron (p11B) fusion under magnetic confinement. These breakthroughs set the stage for the evening's lively discussion, as representatives from both sides of this trans-Pacific U.S./Japan collaboration gave IFE guests a first-hand account of the cutting-edge scientific progress being made.

After a warm reception with friends greeting each other, long-time and new, Ambassador Tomita gave welcoming remarks, outlining the vision for Japan's new energy policy: "Climate response, as you all agree, requires efforts among all stakeholders... We have to use climate response as a source of economic growth." With this reframing of a hopeful vision in mind, Coach Kemper introduced the distinguished members of the diplomatic community in attendance, including the Ambassadors from Luxembourg, Portugal, Japan, Estonia, Portugal, and Armenia, showcasing how the opportunity to develop this transformational technology transcends borders. Attendees then received the first briefing on U.S. soil of the Government of Japan's new fusion strategy, unveiled by His Excellency Vice Minister for Science, Technology, and Innovation Policy, Hiroki Matsuo. To further explain the strategy, Dr. Satoshi Konishi, and Dr. Yoshitaka Ikeda, provided additional stakeholder perspectives on how Japan is developing its leadership in public and private sector fusion, particularly to enable key technologies and to collaborate with the United States on that path.



"Fusion, Breaking Through The Technologies, Policies, & Partnerships Accelerating the Next Energy Revolution"



Institute for Education

Harnessing the power of data, innovation and soft diplomacy in the global community.

Thursday, April 27, 2023
Washington, DC

Providing the U.S. perspective, White House Office of Science & Technology Policy (OSTP) Principal Deputy Director for Policy Dr. Kei Koizumi shared the Biden-Harris Administration's Bold Decadal Vision — its commitment to bringing fusion electricity into reality onto the grid within a decade through technology and policy leadership. Importantly, the Net Zero Game Changers Initiative identified fusion as an inaugural area for significant climate-related investment, helping to bridge the lab-to-market gap and building a pathway for even more robust industry innovation. Fusion energy for both Japan and the United States was emphasized here as a key mutual strategic interest, and significantly, one that both countries are dedicated to building together. U.S. Representative Don Beyer (VA-08) added that it is instrumental to this science-industry connection to educate people and policymakers alike on the byproduct materials of fusion, which highlights it as a clean and safe, aneutronic, new energy option, as opposed to those of nuclear fission, which generates large amounts of toxic environmental waste of which most people are historically more aware.

Wrapping up the evening's program, Dr. R. David Edelman updated everyone on where fusion stands as an energy technology and its importance to the global competitiveness of U.S., Japan, and our allies. Commercially, the space is "White Hot" (to quote a recent Wall Street Journal headline), with an influx of billions of dollars of both public and private funding, including \$1.2B USD into TAE Technologies alone — with the help of Goldman Sachs and Sumitomo Corporation. Public interest is similarly heating up, with the Biden-Harris Administration's allocating more than \$1B in the most recent budget to this burgeoning sector; new programs at the DOE to support collaborative, private sector-led fusion innovation; and recent decisions by the U.S. Nuclear Regulatory Commission to establish the pathway for fusion regulation. He summarized where fusion innovations are being felt today, with spinoff technologies giving hope to those with hard-to-treat cancers and helping to lower the cost of electric vehicles and power storage in other renewables. As Edelman concluded: "We are at a historic moment: on the path to delivering clean, cost-effective, zero-carbon electricity to the grid, and bringing together the community that can make it happen."

With that optimistic spirit, the program transitioned to dinner and conversation over a stunning presentation of sushi, salad, sirloin, and more. The evening set the stage for what will surely be remembered as a groundbreaking moment for the start of a new era of energy, driven in part by the deep and productive collaboration between the US, Japan, and partners in the public and private sectors.

Contributed by Jeremiah N. Sims, MD/PhD IFE Techbio Fellow, and Omair Khan, MD/PhD IFE Techbio Fellow



SPOTTED: H.E. Tomita Koji (Japan) and Cabinet Office Vice Minister Hiroki Matsuo; Congressman Donald S. Beyer Jr. (VA-08); White House OSTP Principal Deputy Director Mr. Kei Koizumi; IFE's Coach Kathy Kemper and Dr. R. David Edelman; Ambassadors H.E. Nicole Bintner-Bashian (Luxembourg, IFE Diplomatic Steward of Blockchain), H.E. Francisco Lopes (Portugal), H.E. Lilit Makunts (Armenia), H.E. Jacques Pitteloud (Switzerland), and H.E. Kristjan Prikk (Estonia); DOE's Assistant Secretary Andrew Light, Lawrence Livermore National Lab Deputy Director Dr. Pat Falcone, Lead Fusion Coordinator Dr. Scott Hsu, ARPA-E Director Dr. Evelyn Wang, Dr. Richard Hawryluk, and Sam Wurzel; Dr. Yoshitaka Ikeda and Prof. Satoshi Konishi; Former NRC Chairman Dr. Richard Merserve; former Deputy Secretaries of Energy Dan Poneman and William Martin; General Atomics CEO Dr. Vivek Lal; Goldman Sachs's Eduardo Manzur and Stephanie Wisner; Zap Energy's Ryan Umstätt; WP's Josh Rogin; LCV's Leah Donahey; Former US CTO Aneesh Chopra; Jennifer Rudy; Katherine Neal; and Ross Dakin.