

List of Exhibition 1/3



	Organization	Overview	Key Points
● Lifestyle/Regional	Fukushima Decarbonization x Reconstruction	The Ministry of the Environment will introduce the efforts toward decarbonization and town development aiming at recovery from the Fukushima nuclear accident and advancement of decarbonization in the area. And we will present the current situation in Fukushima correctly, which prevents harmful rumors.	Evacuees have gradually returned, and Fukushima has become a pioneer in aiming to be an environmentally advanced region in the wake of the earthquake. The Japan Pavilion will introduce Fukushima's efforts for environmental regeneration and becoming an environmentally advanced region, and hold a seminar hosted by the Ministry of the Environment on November 10.
	CYJ (Climate Youth Japan)	Evaluation of the Tokyo Olympics from the perspective of sustainability and recommendations for the 2025 Osaka Expo.	National youth network on typical climate change issues in Japan.
● Energy	Panasonic Corporation	Contributing to local decarbonization by utilizing stationary hydrogen fuel cells as a distributed power source	First installation of stationary hydrogen fuel cells in specific areas
	Mitsubishi Heavy Industries, Ltd.	Highly efficient gas turbines aiming for decarbonization in the energy sector by using hydrogen as fuel.	Using hydrogen in gas turbines with world-class highest energy efficiency.
	TODA CORPORATION	Practical application of floating offshore wind power generation in Goto City, Nagasaki Prefecture.	The optimal solution for localization and cost reduction measures.
	Ministry of the Environment (MOE)	The MOE aims to promote decarbonization through hydrogen supply chain demonstration projects using local energy resources.	The hydrogen demonstration projects across Japan can help the efficient use of regional energy resources, to contribute to the large-scale CO2 reduction and local revitalization.

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	Organization	Overview	Key Points
Materials/Circular economy	The Chugoku Electric Power Co.,Inc Kajima Corporation Denka Company Limited Landes Co., Ltd. Mitsubishi Corporation	Commercial ready Japanese Carbon Negative Concrete technology already used in various applications in Japan	✓ The world's first commercialized carbon negative concrete ✓ Combination of cement replacement with special additive and carbonation curing ✓ Developed by Kajima, Chugoku Electric, Denka, Landes and business development by Mitsubishi Corporation
	JGC Group	Three chemical recycling technologies, monomerization, pyrolysis, and gasification, that can significantly improve the recycling rate of plastic waste.	Making it possible to decompose plastic waste which is difficult to recycle by other methods, into various products e.g. variety of chemicals, oil, ammonia, hydrogen by making full use of three chemical recycling technologies that have the world's only long-term commercial track record.

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	Organization	Overview	Key Points
Satellite	Japan Aerospace Exploration Agency	Global observation of Greenhouse Gas emissions and removals such as forests using Greenhouse gases Observing Satellite IBUKI and Advanced Land Observing Satellite-2 DAICHI-2.	Only Japan has more than 10 years of global GHG observation data and global forest data using Synthetic Aperture Radar effective for forest monitoring.
	IHI Corporation / Sumitomo Forestry CO.,Ltd.	In order to take specific action against global climate change, we will expand the world's only sustainable peatland management model all over the world; by using satellite, UAV and meteorological observation technologies.	The only initiative in the world using scientific field data and state-of-the-art technology for managing tropical peatland.
CCS	Mitsubishi Heavy Industries, Ltd. (MHI)	CO2 capture technology and CCUS initiatives	MHI has the world's largest market share of CO2 capture system from exhaust gas. Its capture rate, purity, and energy efficiency are the world best in class. MHI also contributes to the CCUS value chain through a wide range of technologies and solutions that go beyond CO2 capture technology to accelerate the carbon neutrality.
	Japan CCS Co., Ltd.	Results and future prospects of the Tomakomai CCS demonstration project	The Tomakomai CCS demonstration project is the world's first CCS project conducted near a large city with the understanding of the local community.
Other	Hitachi, Ltd.	Hitachi's efforts towards decarbonization, including its Cyber-Proof of Concept which can simulate carbon neutrality transition scenarios for societies.	A unique simulation technology integrating AI and the humanities that can visualize multiple decarbonization scenarios and support policy-planning for an uncertain future through human-AI cooperation.

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Energy

Organization	Overview	Key Points
JGC Group	Creation of a hydrogen energy supply chain including ammonia fuel	The world's first successful demonstration of a hydrogen / ammonia value chain through ammonia synthesis and power generation using green hydrogen derived from renewable energy, and ammonia fueled power generation.
Hitachi Zosen Corporation	Methane synthesis (Methanation) equipment from the raw materials of CO2 and hydrogen.	Succeeded in the development of our own high-performance methanation catalyst, achieving high-efficiency and high-purity methane synthesis.
NEC Corporation	Providing the adjustment capability required to make renewable energy the main power source by supporting demand response on distributed energy resources (with a virtual power plant, or VPP).	Participated in a demonstration project by the Ministry of Economy, Trade and Industry to build a VPP not yet spread in Japan. Also providing cloud services to revitalize the VPP market.
Challenergy Inc.	Vertical-axis wind power that can generate electricity even in harsh wind conditions such as typhoons	The world's first practical application of the Magnus Vertical Axis Wind Turbine (Magnus VAWT)
Toshiba Corporation	Lightweight and flexible film-type perovskite solar cells and highly efficient Cu2O tandem solar cells	Perovskite solar cells with the world's highest efficiency of 15.1% for a large-area film-type module. Cu2O tandem solar cells with the energy conversion efficiency of 26.1%.
Asahi Kasei Corporation	Large-scale alkaline water electrolyzer that produces hydrogen using renewable energy.	The 10MW alkaline water electrolyzer delivered to Fukushima Hydrogen Energy Research Field (FH2R) by NEDO is the largest single unit in the world

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	Organization	Overview	Key Points
Energy	Fujitsu Japan Limited	Providing energy-saving solutions using high-efficiency gallium nitride high-electron mobility transistors.	Fujitsu has developed a GaN-HEMT power amplifier with the world's highest power conversion efficiency.
	TROMSO CO., LTD	Ground rice husks are compressed, heated and molded to produce solid fuel(briquette). The fuel is being used in developing countries as an alternative fuel for coal and firewood.	Applied technology utilizing declining local shipbuilding technology. Expanded to Africa as part of the JICA project.
	Daiseki Co., Ltd.	Industrial waste treatment emitting less GHG, and recycled fuel saving fossil fuels	One of the best companies in Japan for industrial waste treatment emitting less GHG
	Next Energy & Resources Co., Ltd.	Circular economy and wider use of renewable energy with self-consumption PV systems.	Easy to install the solar power systems in places which have previously been of little value, ensuring safety and durability regardless of technical level or conditions.

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	Organization	Overview	Key Points
Materials	Biomass Resin Holdings Co.,Ltd.	Rice resin, a biomass plastic derived from non-edible rice and rice resources produced in fallow fields.	Unlike conventional plant-derived plastics, the plant can be reduced in size for production of smaller quantities.
	The Chugoku Electric Power Co.,Inc Kajima Corporation Denka Company Limited Landes Co., Ltd. Mitsubishi Corporation	Commercial ready Japanese Carbon Negative Concrete technology already used in various applications in Japan	<ul style="list-style-type: none"> ✓ The world's first commercialized carbon negative concrete ✓ Combination of cement replacement with special additive and carbonation curing ✓ Developed by Kajima, Chugoku Electric, Denka, Landes and business development by Mitsubishi Corporation
	AGC Inc.	Alternative from HFCs and HCFCs to HFOs with extremely low GWP(Global Warming Potential)	AGC is one of the few companies in the world that has commercialized multiple HFOs with our unique technology
	Eco Research Institute Ltd.	Developed and commercialized technology of ERI is the only one in the world that processes virgin paper or waste paper from paper companies and printing factories into fine powders to create bio-based plastics containing more than 51% paper.	The Eco Research Institute is the only company with the technology to create materials containing paper powder. There are no similar products in the world. It is expected that the uniform mixing of resin mass produced with drying paper powder is almost impossible with existing equipment in the plastic industry.
	Business Innovation Partners Co., Ltd.	Practical application of biodegradable bioplastics made from hemicellulose contained in unused resources such as trees and plants.	The world's first successful development and manufacture of bioplastic resin using hemicellulose as a raw material.

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	Organization	Overview	Key Points
Circular economy	JGC Group	Three chemical recycling technologies, monomerization, pyrolysis, and gasification, that can significantly improve the recycling rate of plastic waste.	Making it possible to decompose plastic waste which is difficult to recycle by other methods, into various products e.g. variety of chemicals, oil, ammonia, hydrogen by making full use of three chemical recycling technologies that have the world's only long-term commercial track record.
	Asahi Group	Change the source of electric power generation using biomethane gas of wastewater treatment process from a thermal heat source (via combustion), to electrochemical power generation by using fuel cell.	Succeeded in continuous stable power generation for more than 10,000 hours in the laboratory.
	AC Biode Ltd.	Upcycling biomass ash and sewer sludge ash into absorbent or antibacterial materials.	The only technology in the world to recycle ash as functional materials that can adsorb contaminants not only physically but also chemically.

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	Organization	Overview	Key Points
Satellite observation	Japan Aerospace Exploration Agency	Global observation of Greenhouse Gas emissions and removals such as forests using Greenhouse gases Observing SATellite IBUKI and Advanced Land Observing Satellite-2 DAICHI-2.	Only Japan has more than 10 years of global GHG observation data and global forest data using Synthetic Aperture Radar effective for forest monitoring.
	Asia Air Survey Co., Ltd.	Aircraft mounted laser devices measure the shape of forests, etc., making it possible to measure carbon accumulation in forests more accurately.	Track record of analyzing forest resources not only in Japan but also in forests in Southeast Asia and Northern Europe.
	Toshiba Energy Systems & Solutions Corporation	Social implementation and development of CCUS which separates and captures CO2 from incineration plants and power plants, and power to chemicals (P2C) which produces valuable resources with renewable energy using CO2 as a raw material.	As for CCUS, we constructed the world's first large-scale carbon capture plant with BECCS capability that captures CO2 from the biomass power plant flue gas, and as for P2C, we are developing a CO2 electrolyzer which has the world's highest CO2→CO conversion rate and studying SAF (Sustainable Aviation Fuel) business model as one of the uses of CO. Both projects are commissioned by Ministry of the Environment.
	JGC Group	CO2 separation and recovery technology HiPACT and DDR-type zeolite membrane	Reduced CCS costs due to high temperature durability and CO2 absorption performance(absorption method), or high CO2 separation performance and durability under high CO2 partial pressure (membrane separation method).

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	Organization	Overview	Key Points
CCS/CCUS	Mitsubishi Heavy Industries, Ltd. (MHI)	CO2 capture technology and CCUS initiatives	MHI has the world's largest market share of CO2 capture system from exhaust gas. Its capture rate, purity, and energy efficiency are the world best in class. MHI also contributes to the CCUS value chain through a wide range of technologies and solutions that go beyond CO2 capture technology to accelerate the carbon neutrality.
	Japan CCS	Results and future prospects of the Tomakomai CCS demonstration project	The Tomakomai CCS demonstration project is the world's first CCS project conducted near a large city with the understanding of the local community.
	Carbon Recycling Fund Institute	Providing research grants for carbon recycling that utilizes CO2 as a resource.	Support for basic research with excellent originality and innovation in carbon recycling.

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	Organization	Overview	Key Points
Lifestyle/Regional development	NISSIN FOODS HOLDINGS CO., LTD.	Cup Noodle made with plant-based meat technology, sustainable palm oil, and a container with more than 80% biomass content.	In addition to reducing the environmental impact of Cup Noodle, the Group has achieved the SBT certification and is promoting further CO2 reduction.
	Losfee Co., Ltd.	Mitigation of heat in cities and reduction of air-conditioning energy consumption of architecture by nature-based designed sun-shade (Fractal shape) reproducing the trees	The fractal shade fabric and paper which inspired by ORIGAMI and trees are unique patents
	SEVEN & i HLDGS. Co., Ltd.	Seven & i aims at carbon neutrality and a circular economy: store operations with 100% renewable energy using reused batteries, PET bottle collection machines installed at the group stores to promote recycling.	Seven & i formulated the group-wide environmental declaration as a general retail/distribution group. Aiming for a prosperous and sustainable society, Seven & i group engages with customers at the stores.
	Foundation for Promoting Personal Mobility and Ecological Transportation	Aiming to reduce regional transport impact on the environment by popularizing slow mobility (electric vehicles with a maximum speed of less than 20km / h)	Co-benefits include meeting the demand for decarbonization, and low-speed, low-volume transport for an aging population.
	CYJ (Climate Youth Japan)	Evaluation of the Tokyo Olympics from the perspective of sustainability and recommendations for the 2025 Osaka Expo.	National youth network on typical climate change issues in Japan.
Other	Japan International Cooperation Agency (JICA)	Formulated the Global Agenda, which is an issue-specific strategy for climate change, setting the pillars for promoting the implementation of the Paris Agreement and promoting co-benefits climate change countermeasures.	One of the few development aid agencies that implements cooperation by combining loans, grants, technical cooperation, and private sector investment finance.
	OSINTech	Building an information platform that focuses only on primary information from governments, UN agencies, NGOs, etc.	The only service in Japan that visualizes the trends of each country's rule making trend using AI.
	ARK INC.	With its mission to decentralize aquaculture, ARK is popularizing a small, distributed, closed recirculating aquaculture system that allows anyone to farm fish anywhere.	Amid the trend for larger facilities, this rare initiative enables people to farm fish by themselves in an area as small as one parking space.