

Global Environment Centre Foundation

Annual Report 2021



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Introduction

Global Environment Centre Foundation (GEC) engages in a wide range of activities to promote projects for conserving the global environment through international cooperation, including technical assistance to developing countries, and addressing climate change mitigation, as well as to help achieve the Sustainable Development Goals (SDGs), which were adopted by the UN General Assembly in September 2015, and reduce greenhouse gas (GHG) emissions under the Paris Agreement.

In FY2021, the UNEP Global Dialogue on sustainable waste management toward a pollution-free planet was held in cooperation with the City of Osaka to support activities of the United Nations Environment Programme International Environmental Technology Centre (IETC), which is also an objective of the GEC's establishment. In addition, IETC is working to expand UNEP Sustainability Action, a cross-sectoral platform of the United Nations, government, business, and citizens, launched in 2020 to achieve the SDGs, both domestically and internationally. GEC will continue to actively develop collaborative support for IETC.

Elsewhere in the field of international cooperation, our Support for Digitisation of Regional Industry, a new project to promote digitisation as one of the pillars of the national growth strategy (subsidised by the Kansai Bureau of Economy, Trade and Industry) helped member companies of the Kansai Asia Environmental and Energy Saving Business Promotion Forum (Team E-Kansai) to digitise environmental technologies introduced in Asia. We also conducted surveys to collect information on the seeds of environmentally advanced technologies to help achieve the long-term objectives of plans related to actions for net-zero emissions and ocean plastics in Osaka Prefecture and on environmental issues in Japan and abroad (information on needs). We will continue to support national and local governments in their efforts to promote their key environmental policies.

With regard to climate action, the Glasgow Climate Pact, which was adopted as an outcome document at the COP 26 meeting in Glasgow last year, calls for efforts to limit the rise in the global average temperature to 1.5°C compared with the pre-industrial level. In addition, the Paris Agreement went into full effect as a consensus was reached on the basic criteria pertaining to its Article 6 (market mechanism rules), which had been the only sticking point in the Agreement's rulebook.

The Joint Crediting Mechanism (JCM), implemented by Japan in coordination with developing countries, conforms to the cooperative approaches set forth in Article 6(2), as it allows Japan and the partner countries to share the credit for the reduction of GHGs realised through bilateral climate action projects. As a way of promoting JCM, the GEC is supporting climate action overseas through active implementation of various JCM-related projects. Since last year, we have also been acting as an implementing organisation of the financing programme regarding the Pilot Project for Comprehensive Support throughout the Whole Hydrogen Supply Chain Abroad, launched as a demonstration project to produce green hydrogen in renewable energy-rich third countries and promote its transport to, and utilisation in small island countries in particular.

In addition to the Covid-19 pandemic, the impact on the world economy of the Ukraine crisis caused by Russia's invasion in February 2022 might significantly affect the implementation of climate action including under the Paris Agreement and the Glasgow Pact. Even so, consistent efforts to reduce GHGs are indispensable if we are to avoid the most serious consequences such as food crises and devastating natural disasters. The role to be played by the GEC will thus become even more important going forward.

The GEC remains committed to positive actions to help contribute to achieving the SDGs and the global warming agenda under the Paris Agreement, working with relevant organisations with heightened awareness of global trends and leveraging our expertise and networks both in Japan and overseas.

We would appreciate your continued understanding and support for the GEC's activities.



July 2022

SUZUKI, Naoshi
President
Global Environment Centre Foundation

Support Activities for United Nations Environment Programme (UNEP) International Environmental Technology Centre (IETC) to Promote Environmentally Sound Technologies



Support Activities for IETC Collaboration Project (Commissioned by Osaka City)

(1) UNEP Global Dialogue

GEC co-organised “UNEP Global Dialogue” with UNEP-IETC on 7–9 December 2021. The theme was “Sustainable Waste Management for a Pollution-Free Planet” and multifaceted discussions were held on the importance of environmentally sound management and sustainability, and waste management for a future sustainable society towards SDGs in 2030 and beyond.

UNEP Global Dialogue

Date:	7–9 December 2021 (16:00–18:00)
Organizers:	UNEP, Osaka City, GEC, UNEP Sustainability Action
Supporters:	Ministry of Foreign Affairs, Ministry of the Environment
Program:	7th “Opening Session” and “Osaka Special Event - International Workshop on Plastic Waste Reduction”, 8th “Session 1: COVID-19 and Waste”, and 9th “Session 2: Waste and Climate Change”, “Session 3: “E-Waste Management” and “Closing Session”.
Format:	ZOOM Online
Languages:	Japanese and English



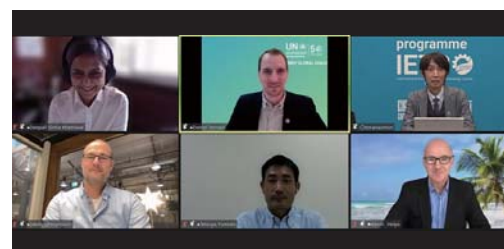
Opening Session



Osaka Special Event



Session 1: COVID-19 and Waste



Session 3: E-waste and Waste

(2) Environmental Needs Survey in India

Based on the project MOU for cooperation in the field of environmental conservation and energy signed between the Environmental Bureau, Osaka City and the Pollution Control Board, Maharashtra State, India in the previous fiscal year, an initial meeting was held to discuss specific needs and areas of cooperation. In addition, the “2nd Japan-India Business Online Seminar” was held. The seminar consisted of two themes: “Sustainable Energy and Environmental Monitoring Systems Contributing to the SDGs” and “Sustainable Transportation Mobility, Alternative Energy, and Modal Shift”. The seminar was attended by many key persons in the environmental and port and fields, who shared the latest information from various perspectives on each theme, contributing to the promotion of business development in both countries. The seminar was successful with a total of 91 participants. A summary of the seminar is as follows.

2nd Japan-India Business Online Seminar - Contribution to SDGs in the field of Environment and Port Logistics

Date:	25 February 2022, 14:00–17:30
Organizers:	Environment Bureau and Osaka Port and Harbor Bureau of Osaka City, Osaka Port Corporation and GEC
Supporters:	JETRO Osaka, Institute for Global Environmental Strategies
Partners:	Team E-Kansai, Team OSAKA Network, Osaka Port Development Association, SCM Program
Format:	ZOOM Online
Languages:	Japanese and English



2nd Japan-India Business Online Seminar



Meeting with the Pollution Control Board, Maharashtra State

(3) Public Relations and Outreach Activities for IETC

GEC participated in the following events and exhibitions and disseminated information through the IETC and UNEP Sustainability Action websites and SNS.

- Afunowa Sustainability Week Talk Event (online), 22 September 2021
- UN Week Event - Sophia University x UNEP-IETC (online), 18 October 2021
- Ecopro 2021 at Tokyo Big Sight (exhibition), 8–10 December 2021
- ECO-Enichi 2021 (online), 30 October 2021
- One World Festival (online): 2–28 February 2022



UN Week Event - Sophia University x UNEP-IETC



Ecopro 2021

(4) Support for UNEP Sustainability Action

GEC managed the UNEP Sustainability Action website and organised regular team meetings. In addition, the following meetings and events were held.

Roundtable Dialogue on Sustainability (Global Dialogue-Opening Session)

Date:	7 December 2021, 15:50–17:00
Format:	ZOOM Online
Participants:	UNEP, Ministry of Foreign Affairs, Ministry of the Environment, Fast Retailing, Seven & i Holdings, Rakuten Group and Mr. Daimaou Kosaka
Summary:	Under the theme of “What must be done to make our society more sustainable?”, panelists introduced their activities and challenges in their missions for a sustainable society and had a lively discussion on sustainability.



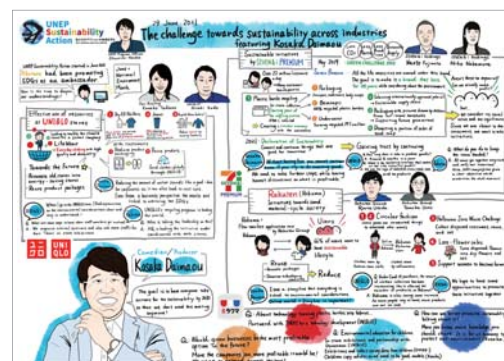
Panelists of Opening Session

Workshop on Plastic Waste Reduction - Toward Realizing the Osaka Blue Ocean Vision (Global Dialogue “Osaka Special Event”)

Date:	7 December 2021, 17:10–18:10
Format:	ZOOM Online
Participants:	UNEP, Osaka City, Toray Industries, Osaka Sangyo University, Greater Manchester (UK), and Mr. Daimaou Kosaka
Summary:	A wide range of case studies were presented, including an update information on plastics from UNEP, Osaka City's efforts to realize the “Osaka Blue Ocean Vision” shared at the G20 Summit, citizen-participatory waste reduction actions, plastics reduction technologies and Greater Manchester's efforts to tackle plastics.

Talk Event for June-Environmental Month - Sustainability Challenges Across Industries!

Date: 29 June 2021
 Format: ZOOM Webinar
 Participants: UNEP Sustainability Action Team members (Fast Retailing, Seven & i, Holdings, Rakuten Group), Mr. Daimaou Kosaka
 Summary: With Mr. Kosaka as a guest speaker, each team member company from different industries shared their sustainable efforts and challenges and had a lively discussion on how to communicate to consumers that “each sustainable action protects the earth”.



Graphic record of the Talk Event with Mr. Daimaou Kosaka

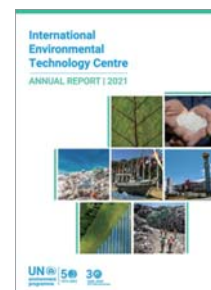
UNEP Sustainability Action - Opinion Exchange Meeting

Date: 16 March 2022, 15:00–16:20
 Format: Zoom meeting
 Participants: UNEP Sustainability Action Team Members, Mr. Kenji Fuma
 Summary: Team members shared information on mid and long-term sustainability policies, updates, current issues in Japan and other countries, followed by a presentation on the future activities of UNEP Sustainability Action. A lively exchange of views on activities took place with comments from Mr. Fuma, an expert in the field of SDGs and Sustainability Management.

Project on ‘Promotion and Delivery of Environmentally Sound Waste Management Technologies and Methods, and Advisory Support’ (commissioned by UNEP-IETC)

GEC carried out the below activities to support UNEP-IETC’s programme. (Note: Some of these activities were jointly conducted with the activity of IETC Collaboration Project (Commissioned by the Osaka City)).

- IETC International Advisory Board Meeting, 6 December 2021
- UNEP Global Dialogue Tuesday, 7–9 December 2021
- Ecopro2021 (exhibition), December 8–10, 2021
- Management of UNEP Sustainability Action website
- Outreach activities through websites and SNS.
- Creation of outreach materials (e.g., highlight videos)
- Production of IETC Annual Report 2021 in Japanese and English versions.



IETC Annual Report 2021 (English)

Support for Digitisation of Regional Industry



The GEC has served as secretariat to the Kansai Asia Environmental and Energy Saving Business Promotion Forum (Team E-Kansai) since May 2013. Building on Team E-Kansai initiatives thus far, our proposal “Support for advanced remote management system utilizing IoT in environmental field in Asia” was selected as the support project for digitization of regional industry in FY2021 subsidised by METI.

In this project, with the cooperation of collaborative organisations with IT-related know-how and knowledge, we will support the demonstration of remote management systems (prototyping, customer hearings, business feasibility evaluation and improvement, etc.)

conducted by two indirect subsidy companies. In addition to creating model cases for digitization, we have been finding candidate companies for business model demonstration and disseminating them.

Project frame

- Business management organisation: GEC
- Indirect subsidy company (demonstration company): Sanso Electric Co., Ltd. (Himeji City), Kotobuki Kankyoh Kizai Co., Ltd. (Osaka City)
- Collaborative institutions (IT vendors, research institutes, etc.): Nippon Software Knowledge Corp. (Maibara City), Osaka Institute of Technology (Hirakata City)

(1) Domestic seminar

Theme:	Promotion Seminar on IoT-based remote and management systems in the environmental field
Date:	December 17, 2021
Method:	Webinar by Zoom
Outline of the seminar:	Explanation of this project, demonstration case (Sanso Denki, Kotobuki Kankyoh Kizai), research introduction of remote management of aquaculture using ICT / IoT / AI (Osaka Institute of Technology), and case introduction (Horiba Advanced Techno)



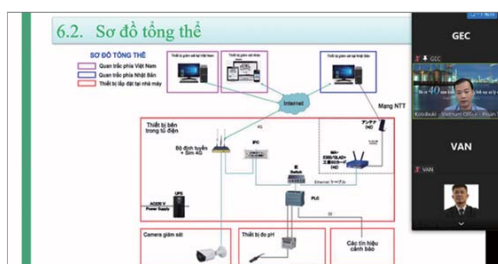
(2) Exchange Meeting on Remote System in Indonesia

Theme:	Exchange Meeting on Remote System utilizing Digital Technology
Date:	February 22, 2022
Method:	Online meeting by Zoom
Outline of the seminar:	Presentation from the National Research and Innovation Agency (BRIN), explanation of this project, demonstration case (Sanso Denki), technical introduction of environmental systems and equipment utilizing digital technology (3 companies), exchange of opinions with Indonesia side



(3) Exchange Meeting on Remote System in Vietnam

Theme:	Exchange Meeting on Remote System utilizing Digital Technology
Date:	March 10, 2022
Method:	Online meeting by Zoom
Outline of the seminar:	Explanation of this project, demonstration case (Sanso Denki, Kotobuki Kankyoh Kizai), technical introduction of environmental systems and equipment utilizing digital technology (3 companies), exchange of opinions with Vietnam side



Promotion of the Water Environment Business



The Shiga Prefectural Government established the Shiga Water Environment Business Promotion Forum (Team Water Shiga) in March 2013 to facilitate development of the water environment business by taking advantage of the accumulated results of water environment-related industries and research institutions as well as activities to conserve the water environment of Lake Biwa. The Prefectural Government not only provides information about recent trends in the water environment business, activities of pioneering companies, and various support measures, but also operates Team Water Shiga as a forum for matching and team-building to set up actual business projects, joint development, and so on.

Commissioned to conduct the 'Survey & Coordination for Water Environment Business Promotion' by the Shiga Prefectural Government, activities of the project included: (1) support for hosting/offering seminars and section meetings in Shiga prefecture, (2) support for participating in business exhibitions in Japan, (3) business matching on water treatment in Vietnam and China, (4) study on identifying technological needs and issues related to the water environment in the Asian region, and (5) business matching between trading companies and Team Water Shiga members.

(1) Support for seminar and session held in Shiga Prefecture

The Shiga Water Environment Business Seminars were held online in August 2021 and February 2022 to introduce various efforts by industry-academia-government collaboration to improve water treatment, mainly in Vietnam and China, as well as general research trends in the water environment field.

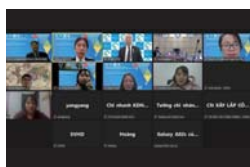
In addition, Asia Regional Sessions for relevant Forum members were held in August 2021 (online) and January 2022 (face-to-face), aimed at sharing and discussing information useful for supporting Forum members' overseas expansion. In the first session, how to develop the project was discussed among relevant members. In the second session, individual consultations were held between New Energy and Industrial Technology Development Organization (NEDO) and Forum members.



The booth at Messe Nagoya 2021



The booth at InterAqua2022



Business matching in Vietnam



Business matching in China

(2) Support for participating in business exhibitions in Japan

To secure new Forum members and promote sales by members through introducing the activities of the Forum, the GEC supported Team Water Shiga's booth at Messe Nagoya 2021 and InterAqua2022, which are two domestic exhibitions related to manufacturing and the water environment. During the exhibition, activities of the Forum such as the JICA project at Katt Ba Island in Vietnam were introduced.

(3) Business matching on water treatment in Vietnam and China

Business matching seminars between Japanese companies and organisations related to the water environment in Vietnam and China were held online. Details of the matching are listed below.

Countries	Business matching	Date	Number of participating Japanese companies
Vietnam	Business matching on water treatment in collaboration with Hanoi University of Construction	16 February 2022	5
China	Business matching with companies and organizations in Guangdong Province regarding water treatment	3 March 2022	3

(4) Survey on identifying water environment-related needs and related issues in the Asian region

Considering the needs of the members of Team Water Shiga, desk-based research on water treatment in Vietnam, which are priority countries, was conducted.

Reports on trends in wastewater regulations and water treatment policies, and challenges and needs related to water environment by industry in Vietnam was produced by experts with knowledge of the water environment.

(5) Business matching between trading companies and Team Water Shiga members

To support the overseas expansion of Forum members, the business matching was held in January 2022 with two trading companies that have overseas bases and abundant networks.



Business matching with trading companies

Seeds and Needs Surveys for Environmental and Energy Technologies, and its Promotion and Public Awareness-raising Activities



GEC, in collaboration with think tanks (Mitsubishi UFJ Research and Consulting and Innovare), has been commissioned by the Osaka Prefectural Government to conduct a study on advanced environmental technologies expected to contribute to achieving the long-term goals of decarbonisation and marine plastic litter countermeasures in the Osaka region. The study included seeds survey on innovative technologies related to decarbonisation measures and marine plastic litter measures that are expected to be put into practical use and incorporated into society between 2030 and 2050, also needs survey on domestic and overseas environmental issues to which businesses in Osaka and Kansai region can contribute and preparation of a technical information booklet for business operators and an environmental awareness booklet for prefectural residents.

Of this study, GEC was mainly responsible for conducting domestic and overseas needs assessments, as well as managing expert panels in the areas of decarbonization measures and marine plastic litter measures for the purpose of reviewing the study results, also preparing a booklet for businesses and prefectural residents. For the overseas needs assessment, GEC selected Vietnam, Indonesia, and Thailand, and conducted desk research.

Support for Tripartite Environment Ministers Meeting among China, Japan and Korea (TEMM) (commissioned by OECC)



The Tripartite Environment Ministers Meeting among China, Japan and Korea (TEMM) whose 22nd meeting had been postponed was held on 7 December 2022 by online mode. GEC participated in the TEMM22. The TEMM22 adopted the updated Tripartite Joint Action Plan (TJAP) 2021-2025 and confirmed the importance to promote Green Recovery from Global COVID-19 Pandemic and to implement the Article 6 of the Paris Agreement for GHG emission control and reduction.

In addition, GEC in charge of the support for the official launch of the Tripartite Environmental Pollution Prevention and Control Technology Cooperation Network Information Platform worked with Chinese and Korean implementation agencies.

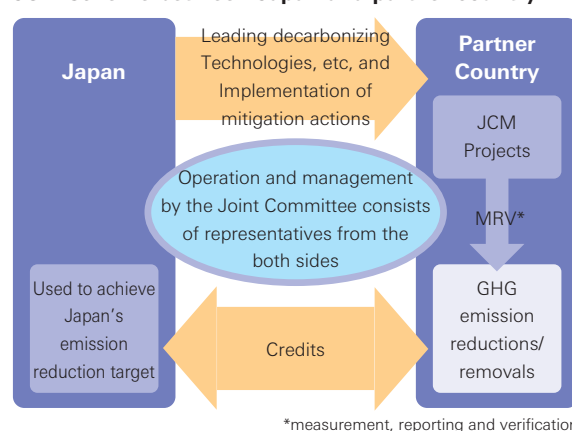
Technology Transfer for Developing Countries through the Joint Crediting Mechanism

What is the Joint Crediting Mechanism (JCM)?

The JCM is a mechanism based on bilateral agreements between Japan and developing countries. It facilitates the diffusion of leading decarbonising technologies, products, systems, services, and infrastructure as well as the implementation of mitigation actions, and contributes to sustainable development in developing countries. It quantitatively evaluates contributions to GHG emission reductions or removals by Japan and uses them to achieve Japan's emission reduction target.

The JCM contributes to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reduction or removal. To date, the following 17 countries have signed bilateral documents for introducing the JCM: Mongolia, Bangladesh, Ethiopia, Kenya, the Maldives, Vietnam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand and the Philippines.

JCM scheme between Japan and partner country



*measurement, reporting and verification

Photos from Model Projects that completed installation in FY2021



Vietnam

- Introduction of High Efficiency Boiler System to Food Factory
- Acecook Co., Ltd.
- Acecook Vietnam Joint Stock Company
- Sojitz Osaka Gas Energy Company Limited(SOGEC)



Thailand

- Introduction of Energy Saving Centrifugal Chillers to Machinery Factory
- Kansai Electric Power Co.
- Kansai Energy Solutions (Thailand) Co., Ltd.



Palau

- Introduction of 1MW Solar Power System on Supermarket Rooftop
- Sharp Energy Solutions Corporation
- Surangel & Sons Company

Financing Programme for JCM Model Projects



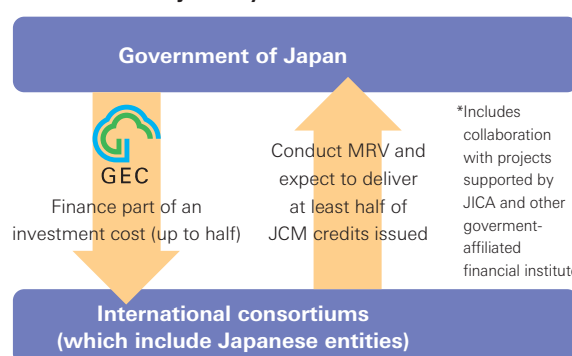
The Ministry of the Environment, Japan (MOEJ) provides financial support for several programmes and activities including the Financing Programme for JCM Model Projects to facilitate the development of JCM projects. The GEC is commissioned by the MOEJ to serve as an implementing organisation to manage these programmes and activities.

As for the Financing Programme for JCM Model Projects, the GEC has played the role since 2014.

The purpose of this programme is to financially support the implementation of projects that reduce GHG emissions by utilising leading decarbonising technologies in developing countries, and in return, to seek to acquire JCM credits towards achieving Japan's GHG emission reduction target.

The total number of JCM Model Projects reached 188, including those selected in FY2021. The total expected reduction is 1,983,612 tCO₂. Of these, 121 projects have started operations and are thus contributing to the reduction of CO₂ emissions.

JCM Model Projects by MOE

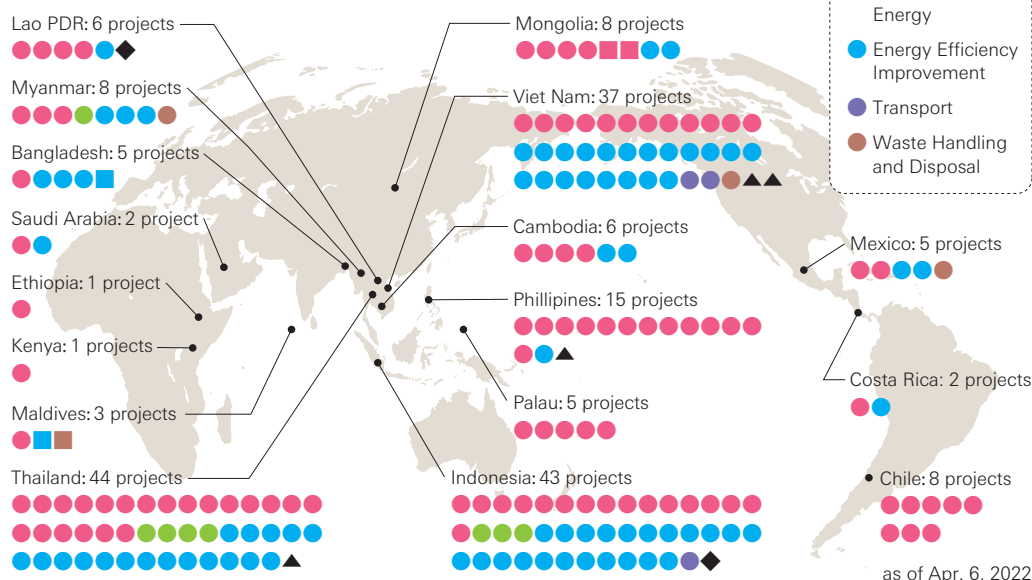


- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO₂ from fossil fuel combustion as well as construction costs for installing such facilities, etc.
- Eligible projects: those starting installation after the adoption of the financing and finishing installation within three years.

JCM Financing Programme by MOEJ (FY2013~2021)

Total 199 projects / 17 countries

● Model Project: 188 ■ ADB: 5 ◆ REDD+: 2 ▲ F-gas: 4



Each year, the GEC calls for, reviews and selects project proposals for the financing programme, and manages the selected projects. In FY2021, the GEC held open calls for proposals from April through October and selected 28 projects in total in consultation with the MOEJ, as listed in the table below.

JCM Model Projects Selected in FY2021

No.	Partner Country	Representative Participant	Title
1	Vietnam	JFE Engineering Corporation	Waste to Energy project in Bac Ninh Province
2	Vietnam	Sharp Energy Solutions Corporation	Introduction of 9MW Rooftop Solar Power System to Factories
3	Vietnam	ENDO Lighting Corporation	Introduction of High Efficiency LED Lighting with Dimming and Tunable Function to Office Building in Ho Chi Minh City
4	Indonesia	Sumitomo Forestry Co., Ltd.	Introduction of 3.3MW Rooftop Solar Power System in Woodworking Factories
5	Indonesia	FUMAKILLA LIMITED	Introduction of High-Efficiency Thermal Oil Heater System in Chemical Factory
6	Mexico	Sharp Energy Solutions Corporation	20MW Solar Power Project in Guanajuato
7	Thailand	Osaka Gas Co., Ltd.	Introduction of High Efficiency Once Through Boiler to Garment Factory
8	Philippines	MITSUI & CO., LTD.	60MW Solar Power Project in Cordón, Isabela
9	Philippines	Mizuho-Toshiba Leasing Company Ltd.	Tanawon 20MW Flash Geothermal Power Plant Project
10	Vietnam	Marubeni Corporation	Introduction of 12MW Rooftop Solar Power System to Commercial and Industrial Customers
11	Vietnam	Osaka Gas Co., Ltd.	Introduction of 9.8 MW Rooftop Solar Power System in Industrial Park
12	Vietnam	Asian Gateway Corporation	Introduction of 5.8MW Rooftop Solar Power System to Beverage Factory
13	Vietnam	The Kansai Electric Power Company, Incorporated	Introduction of 2.5MW Rooftop Solar Power System to Food Factory and Garment Factory
14	Vietnam	Tokyu Corporation	Introduction of High Efficiency Chiller and High Efficiency LED Lighting with Dimming Function to Shopping Center
15	Lao PDR	Liberal Solution Co., Ltd.	19MW Solar Power Project in Xiengkhouang Province
16	Indonesia	WWS-JAPAN Co.	6MW Mini Hydro Power Plant Project in Besay River, Lampung Province
17	Indonesia	Otsuka Pharmaceutical Factory, Inc.	Energy Saving by Introducing High Efficiency Autoclave to Infusion Manufacturing Factory 2



Indonesia

- Introduction of High Efficiency Boiler System to Carton Box Factory
- Japan Pulp & Paper Co., Ltd.
- PT Oriental Asahi JP Carton Box



Cambodia

- Introduction of 0.9MW Solar Power System at International School
- Asian Gateway Corporation
- Canadian International School of Phnom Penh (CIS)
- Overseas Cambodian Investment Corporation(OCIC)



Chile

- 3MW Solar Power Project in Chillan, Ñuble Region
- FARMLAND Co., Ltd.
- Land and Sea SpA
- Farmdo Energy Chile SpA



Mexico

- 30MW Solar Park Project in Guanajuato
- Sharp Energy Solutions Corporation
- Prana Power SAPI de CV
- Tampico Solar SA de CV



Myanmar

- Introduction of 8.8MW Power Generation System by Waste Heat Recovery for Cement Plant
- Global Engineering Co.
- Shwe Taung Cement Company Limited



Thailand

- Introduction of Gas Co-generation System and Absorption Chiller to Fiber Factory
- Kansai Electric Power Co., Inc.
- Kansai Energy Solutions (Thailand) Co., Ltd



Lao PDR

- Introduction of Amorphous High Efficiency Transformers in Power Grid
- Yuko Keiso Co., Ltd.
- Electricite Du Laos

No.	Partner Country	Representative Participant	Title
18	Indonesia	WWS-JAPAN Co.	2.3 MW Mini Hydro Power Plant Project in Melesom River, Lampung Province
19	Chile	Eurus Energy Holdings Corporation	9MW Solar Power Project in Casablanca, Valparaiso Region
20	Chile	Eurus Energy Holdings Corporation	9MW Solar Power Project in Yungay, Biobio Region
21	Chile	FARMLAND Co., Ltd.	3MW Solar Power Project Utilizing Farmland in Maule Region
22	Thailand	Kanematsu KGK Corp.	35MW Solar Power and Storage Battery Project in Suphanburi Province
23	Thailand	Sharp Energy Solutions Corporation	Introduction of 23MW Rooftop Solar Power System to Tire Factories
24	Thailand	The Kansai Electric Power Company, Incorporated	Introduction of High Efficiency Boiler, High Efficiency Chiller, and Solar PV System to Textile Factory and Food Factory
25	Thailand	The Kansai Electric Power Company, Incorporated	Introduction of 2MW Rooftop Solar Power System to Non-ferrous Metal Factory
26	Thailand	Tokyo Century Corporation	Introduction of 1.3MW Solar Power System to Food Factories (JCM Eco Lease Scheme)
27	Thailand	Tokyo Century Corporation	Introduction of 0.13MW Solar Power System to Auto Parts Factory (JCM Eco Lease Scheme)
28	Philippines	Oriental Consultants Co., Ltd.	Introduction of Energy Saving Air Conditioning System to Quezon City Hall Compound

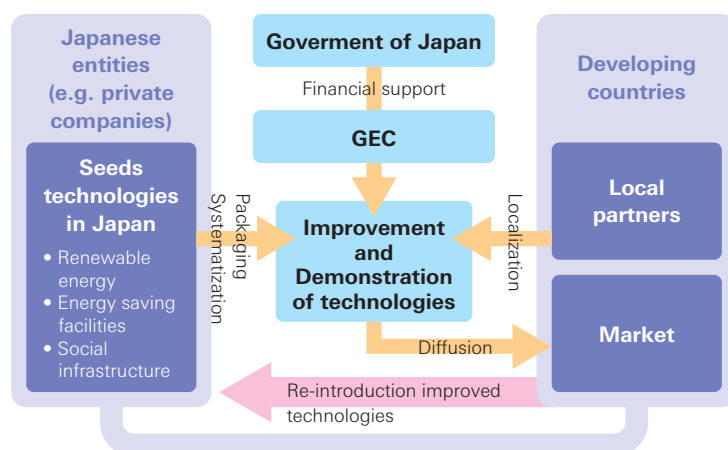
As of March 2022, the GEC has managed a total of 188 Model Projects and more than half of the projects have completed the installation of facilities. These projects have been, or are expected to be, registered as JCM Projects, and the GHG emission reductions will be appropriately calculated for issuing JCM credits through a robust process.

Financing Programme to Demonstrate Decarbonisation Technology for Realising Co-Innovation in FY2021



On behalf of the Ministry of the Environment, Japan (MOEJ), the GEC began implementing the 'Financing Programme to Demonstrate Decarbonisation Technology for Realising Co-Innovation' starting in 2019.

This financing programme aims to create innovations that are beneficial for both Japan and developing countries through collaboration (co-innovation). The purpose is to create a low-carbon society through renovation and dissemination of high-quality low-carbon technologies (including decarbonising technologies) and products, which are Japan's strengths, by systematising and packaging multiple technologies, and encouraging the uptake of such technologies and bringing benefits to the developers in Japan as a result.



GEC's Activities in FY2021

Each year, the GEC calls for, reviews and selects project proposals for the financing programme, and manages the selected projects. In fiscal 2021, the GEC held open calls

for proposals and selected new projects in consultation with the MOEJ and the evaluation committee of experts.

- A total of three projects were selected for funding under the financial programme. (Two projects were selected in first selection period, and one project in the second.)
- Project management: The GEC oversaw the progress of the projects that had been selected in fiscal 2019 and 2020 through monthly reports and meetings, and provided suggestions for improvement when needed.
- Intermediate evaluation: Eleven projects that had been selected in the fiscal year 2019 and 2020 were evaluated by the evaluation committee based on an intermediate progress report submitted by each project participant in February.
- Final inspection: The GEC conducted a review of the final reports (including evaluation of final reports and online-site inspection) and disbursement of financial support within fiscal 2021, in regard to the one project that had been selected in 2019.
- For many projects, it has been difficult to visit the project sites due to Covid-19. As a result, ten projects were carried forward to the budget of the next fiscal year.

New projects selected in FY2021 (3 projects)

No.	Country	Project Participants	Title
21-1	Viet Nam, Thailand	Sumisho Global Logistics Co., Ltd.	Low-carbon cold chain logistics model demonstrated project using high performance reefer containers
21-2	Thailand	Kaneka Corporation	Demonstration project of the stylish and high-efficiency BIPV system to the high-rise building in Thailand
21-3	Malaysia	Sumitomo Heavy Industries, Ltd.	Development and Demonstration of a CFB (Circulating Fluidized Bed) Boiler utilizing palm residue as a biomass fuel in Southeast Asia

Projects selected in FY2020 (4 projects)

No.	Country	Project Participants	Title
20-1	Mongolia	Zeneral Heatpump Industry Co.,Ltd.	The demonstration of a hybrid source (ground source / solar heat) heat pump heating system for extremely cold regions
20-2	Indonesia, Vietnam	Fukushima Galilei Co.Ltd.	Demonstration of High-performance ventilation, air conditioning, and showcase combined control to Food Supermarket in Asia
20-3	Thailand	Hasegawa Electric Industries Company Limited	Introduction and demonstration of load-linked flow control system technology for existing water-cooled air conditioning systems in hospitals and other buildings in Thailand
20-4	Indonesia	Mikawa Environmental Technology Inc.	Demonstration of GHG-free production of functional activated carbon using coconut-shell by integrating carbonization and activation process

Projects selected in FY2019 (8 projects)

No.	Country	Project Participants	Title
19-1	Thailand	Chubu Electric Power Co., Inc.	Development of Compressor Optimized Operations Service Utilizing IoT and Demonstration Project in Kingdom of Thailand
19-2	Cambodia, Laos, Philippines	Toyota Tsusho Corporation	Demonstration for Development and Introduction of Electric Vehicle in Asian Countries with Reusing Main Components Recovered from Spent Hybrid Vehicle
19-3	Philippines	Challenergy Inc.	Development of High Wind Speed Resistance Magnus Vertical Axis Wind Turbine Aiming for the Cost-Efficient and High-Resilient Micro-Grid System
19-4	Philippines, Vietnam, Laos, Thailand	Climate Experts, Ltd.	Demonstration Project of Mobile Container Refrigerator with High Humidity for Innovative Cold Chain for Fruits/Vegetables/Flowers in Developing Countries
19-5	Indonesia	Sugawara Industry Co., Ltd.	Verification for Cost Reduction and Low Carbonization of the Pavement Recycling Technology with Asphalt Wastes for Indonesia
19-6	Maldives	Tamaden Industry Co., Ltd.	Development of Hybrid Autonomous Power Control System with Renewal Energy in Small Remote Islands
19-7	Indonesia	Datatec Co., Ltd.	Demonstration Test Using an In-Vehicle Device (ISR: Indonesian version of the Safety Recorder) for Indonesian Commercial Vehicle to Improve Fuel and Logistics Efficiency
19-8	Philippines	Zenmov Inc.	Demonstration of Low-Carbon Society by Easing Traffic Congestion by Optimization of Public Vehicle Allocation and Utilizing Electricity Derived from Renewable Energy



No.19-3
Magnus Vertical Axis Wind Turbine



No.19-4
Mobile Container Refrigerator with High Humidity



No.19-5
Recycle Asphalt Mixing Plant

Pilot Project for Comprehensive Support throughout the Whole Hydrogen Supply Chain Abroad



This project started in May 2021 to provide financial support to projects that aim to produce hydrogen in a country with abundant renewable energy, and transport and utilise it in a small island country. The goal of this pilot project is to advance utilisation of hydrogen made with renewable energy while contributing to Japan's GHG emission reduction goals.

List of Projects Selected during the Fiscal Year 2021

Countries	Implementer	Project Title
Australia, Indonesia	Marubeni Corporation	Production of economical green hydrogen in South Australia, transportation of hydrogen by metal hydride to Indonesia and utilization of hydrogen through fuel cell in an industrial town in Indonesia
Australia, Palau	Sojitz Corporation	Demonstration Project on Green Hydrogen Production in Australia, its Transportation to Palau and Utilization by Fuel Cell and Fuel Cell Boat

Promoting the Utilisation of Financial Assistance Schemes Including JCM and Technical Assistance Schemes Including CTCN

Support for the Efficient Implementation of MRV Activities, Awareness Raising and Promotion for JCM



The GEC was commissioned in April 2021 by the MOEJ to support the efficient implementation of MRV activities related to the Financing Programme for JCM Model Projects, and to promote understanding and participation in the JCM scheme domestically and internationally.

Support for efficient implementation of MRV for JCM

This task involves supporting the process of MRV activities such as JCM project registration and credit issuance of JCM Model Projects. In fiscal 2021, the GEC supported 19 project registrations and 20 credit issuances for projects of which facilities were installed in the JCM Model Projects in coordination with the MOEJ, related institutions, and partner countries.

In FY2021, the joint committees with partner countries, which consist of government members of both Japan and the partner country and which implement the sequence of processes, were held with Mongolia and Bangladesh respectively by online due to the Covid-19 pandemic. Amount of the JCM credit to be issued were decided by the joint committees and issued 356,419 ton-CO₂ by Mongolia and 499 ton-CO₂ by Bangladesh. Accordingly, the GEC actively participated in various meetings with partner countries organised by the related institutions and gave presentations on the ongoing and past projects and shared the latest information based on accumulated knowledge and experience as the implementing organisation of the JCM Model Projects.

The GEC held a webinar for the representative participants together with the MOEJ, the Institute for Global Environmental Strategies (IGES) and Overseas Environmental Cooperation Centre (OECC) to explain the procedures of MRV activities after completion of installation of the facilities, focusing on the schedule and points to be noted during MRV activities.

Awareness-raising Activities for JCM

(1) Website and social media platform

• JCM website by GEC

New additions to the website include a webpage for each JCM Model Project that were newly selected for fiscal 2021, and the webpage for existing projects were updated.

In addition, a new webpage was added for information about call for proposal and selection result for Financing Program to Demonstrate Decarbonization Technology for Realizing Co-Innovation as well as Pilot Project for Comprehensive Support throughout the Whole Hydrogen Supply Chain Abroad that were newly started from fiscal 2021. Lastly, the webpage for the JCM brochure were updated to attract more viewers.

• Twitter

112 posts were made on Twitter to disseminate information regarding JCM news and events, which resulted in an increase in the number of followers by 40, totalling 1,013 as of February 2022.

(2) JCM Seminars in JCM Partner Countries

A series of webinars was held for the audience in Indonesia, Thailand, Vietnam, and Chile. The webinar was participated by government officials and business leaders from Japan and the above countries, and it aimed at sharing overview and progress of JCM and facilitating project development and scaling up those future projects.

With this year's theme 'Innovation for Carbon Neutrality through the JCM', the webinars introduced "Financing Programme for JCM Model Projects", "Financing Programme to Demonstrate Decarbonization Technology for Realizing Co-Innovation" and "Pilot Project for Comprehensive Support throughout the Whole Hydrogen Supply Chain Abroad" as well as good examples of each project.

Furthermore, individual meetings were held with those who expressed interest where they received guidance directly from the GEC.

• JCM Webinar for Indonesia

A webinar was held on 2 September 2021 with 413 attendees. The GEC and presenters also received requests for 84 individual meetings where they provided guidance on JCM.

• JCM Webinar for Thailand

A webinar was held on 27 September 2021 with 345 attendees. The GEC and presenters received 91 requests for individual online meetings.

• JCM Webinar for Vietnam

A webinar was held on 17 December 2021 with 286 attendees. The GEC received 55 requests for individual online meetings.

• JCM Webinar for Chile

A webinar was held on 2 February 2022 with 155 attendees. The GEC also received 68 requests for individual online meetings.

In addition, GEC joined JCM webinars organised by other organisations for Palau, Maldives, the Philippines, and Africa region to discuss JCM and JCM Global Match, as well as to hold consultation meetings.

(3) Presentation on JCM at International Conferences

GEC joined the following international conferences to provide a presentation on JCM.

• Asia-Pacific Climate Week

At a side-event organised by the Ministry of the Environment Japan on 8 July 2021, a representative from GEC gave a presentation on the recent progress of JCM in the Asia-



Indonesia JCM Webinar



Thailand JCM Webinar



Vietnam JCM Webinar



Chile JCM Webinar



JCM Symposium in Japan



Top page of the new JCM Global Match

Pacific region, as well as the potential synergy between JCM and the Technology Mechanism under the UNFCCC.

• COP26

At a side-event organised by the Ministry of the Environment Japan on 8 November 2021, a representative from GEC gave a presentation entitled “Contribution to SDGs by JCM Model Projects and Utilization of Guideline on Gender Equality for the JCM”.

• Environmental Issues in Central Asia and Caucasus and the Role of Japan

At this event organised by the Ministry of Foreign Affairs Japan on 16 March 2022, a representative from GEC gave a presentation on JCM and success stories.

(4) JCM Symposium in Japan

To further promote the JCM, an online JCM symposium was held on 9 December 2021 with 251 attendees.

During the symposium, the significance of the Japan’s new JCM target of cumulative GHG emission reduction for 100 million tons by 2030 was explained, and the financing programmes of other organisations that are compatible with the JCM as well as good examples of the large JCM projects were introduced.

Promotional Activities for JCM

(1) Identification of potential projects, challenges, and solutions

• Identification of Large Scale Projects

In order to identify large and effective JCM projects, GEC held consultation meetings with companies that showed interest in JCM in the past, as well as presentation meetings with business associations.

• Surveys

A survey was sent to 2,500 recipients to analyse how they were affected by Covid-19 and how they addressed the challenges. The feedback received will be used not only to identify and nurture potential projects, but also to improve the way the JCM is operated.

• JCM Consultation Meetings

Throughout the year the GEC met with companies who were preparing to submit a JCM proposal. The number of these meetings increased from 196 in 2020 to 226 in 2021.

(2) Renewal of JCM Global Match

For further improvement in convenience, the updates of the JCM Global Match such as simplification of matching procedure were made. As a result of active public relations activities such as introduction in seminars, the number of users reached 714 as of March 2022.

(3) Cooperative Approach with Financial Institutions

It is essential that financial institutions provide funds to JCM Model Projects. It should be also noted that they could help representative and cooperative participants of Model Projects to set up international consortiums. From this point of view, GEC has been trying to enhance its cooperative approach with financial institutions by promoting awareness of JCM among the financial institutions, and sharing information of business partners. GEC has been successful in establishing good relationships with major multilateral development banks and international and Japanese financial institutions. GEC will keep enhancing the relationships with more financial institutions.

(4) Survey on Contribution to SDGs

In order to assess the effectiveness of the “Guideline on Gender Equality for the JCM”, a survey was sent to the JCM project implementers whose project was selected during the last two fiscal years. The results showed that they have been working on their JCM projects

with the gender guideline in mind. However, there were also suggestions for GEC to provide additional information such as best practices for better understanding on the connection between JCM and gender equality, which GEC aims to provide in the coming year.

(5) Cooperative Approach with Non-JCM Country Entities

GEC explored the possibility of working cooperatively with companies from non-JCM partner countries by taking stock of the existing JCM projects for the ways in which these companies are connected JCM, and conducting consultation meetings with companies who were interested in applying for JCM in the future.

Support on Climate Technology Centre and Network (CTCN) Project Development



Commissioned by the Ministry of the Environment, Japan (MOEJ), GEC implemented the CTCN Technical Assistance project on “Technical Capacity Enhancement to Promote Waste-to-Energy (WtE) Technology in Vietnam” which was funded as MOEJ’s pro-bono support. Under this CTCN project, GEC investigated the Vietnamese current situation of waste management, analysed various solid waste treatment technologies including WtE technologies to be proposed as a suitable one for Viet Nam, developed draft WtE technology evaluation criteria, and provided e-learning training course for Vietnamese stakeholders such as local authorities.

In addition, GEC provided assistance on developing and following up the proposed CTCN Technical Assistance projects with developing countries to be submitted to the CTCN.

GEC also set up a webpage (<https://gec.jp/jp/category/ctcn/>) for awareness raising of the CTCN in Japan.

Support for Japan Fund for Joint Crediting Mechanism (JFJCM)



The Ministry of the Environment, Japan has been funding the Japan Fund for Joint Crediting Mechanism (JFJCM) established within the ADB since 2014 to accelerate the uptake of advanced low-carbon and decarbonising technologies in developing countries in the Asian region. Commissioned by the Ministry of the Environment, Japan, the GEC provided assistance on the evaluation process for the following projects:

- Palau: Disaster Resilient Clean Energy Financing – Additional Financing
- Maldives: Accelerating Sustainable System Development Using Renewable Energy (ASSURE) Project
- Indonesia: Geothermal Power Generation Project

Support for Japan Platform for Redesign: Sustainable Infrastructure (JPRSI)

Japan Platform for Redesign: Sustainable Infrastructure (JPRSI) was launched in August 2020 by the Ministry of the Environment, Japan as a place for ministries, local municipalities, the private sector, financial institutions, international organisations, experts, and others to network and share information. This year, the GEC collected and organised 136 technologies developed by JPRSI members and published a list on the JPRSI website in both Japanese and English.



JPRSI Solutions Webpage
(<https://jprsi.go.jp/en/technology-types/search>)

Distance learning

Due to the Covid-19 pandemic from 2020, an online training programme using the Internet is being implemented to substitute for the training in Japan. It consists of self-study via on-demand learning materials and real-time sessions for presentations and discussions among participants.

Japan International Cooperation Agency (JICA) Group Training Project

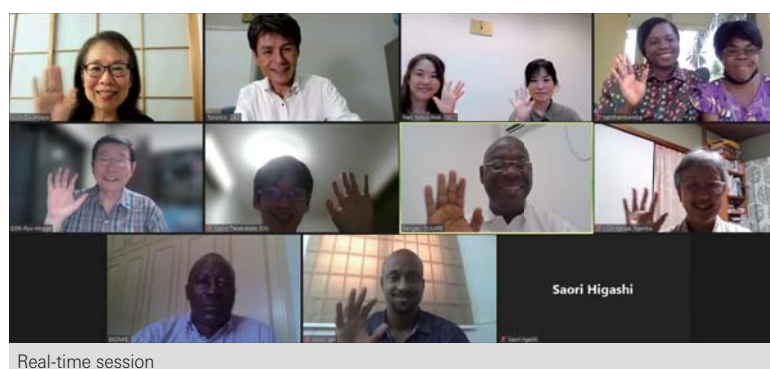


Commissioned by JICA, the GEC has carried out training courses for Improvement of Urban Solid Waste Management (Emphasis on Collection, Transportation and Final Disposal) in English as well as in French, which had been launched in FY2020. Due to the Covid-19 pandemic, the FY2020 training courses were continued into FY2021, resulting in a total of 4 training courses being implemented in FY2021. The training programmes were all provided online via on-demand materials with periodical real-time face-to-face sessions.

We will continue and strengthen the cooperation with the research institutions and other relevant organizations in order to meet the diverse range of needs in developing countries as well as to improve the online training even in such situations.

Urban Solid Waste Management (Emphasis on Collection, Transportation and Final Disposal) (A), (B)

Training Dates / Participants	Programme
FY2020 <Course A (English)> <ul style="list-style-type: none"> 1st distance learning: 12 January 2021 – 31 August 2021 2nd distance learning: 4 October 2021 – 12 November 2021 4 participants from 3 countries: Brazil (2), Cambodia, Jamaica <Course B (French)> <ul style="list-style-type: none"> 1st distance learning: 1 March 2021 – 31 October 2021 2nd distance learning: 11 January 2022 – 16 February 2022 4 participants from 4 countries: DR-Congo, Djibouti, Guinea, Niger 	Objective To develop leaders and core people who will play a major role in the planning and execution of waste management projects in their own countries. Collaborators Osaka City Environment Bureau, Fukuoka City, Kyoto City, Osaka City University, Osaka City University Hospital, Osaka Environmental Facilities Association, Nantan City Yagi Bioecology Centre, Senri Recycle Plaza, EX Research Institute Ltd., Kokusai Kogyo Co. Ltd., Takakura Environment Research Institute, Daiwa Itagami Co. Ltd., Kansai Recycling Systems Co., Ltd., Nomura Kohsan Co. Ltd., Kobe Environmental Creation Co., Ltd., Hitachi Zosen Corporation, etc.
FY2021 <Course A (English)> <ul style="list-style-type: none"> 1st distance learning: 1 July 2021 – 30 November 2021 2nd distance learning: 17 January 2022 – 3 March 2022 9 participants from 5 countries: Brazil (2), Cambodia, Cuba (2), Indonesia (2), Nepal (2) <Course B (French)> <ul style="list-style-type: none"> 1st distance learning: 7 June 2021 – 30 September 2021 2nd distance learning: 1 November 2021 – 8 December 2021 5 participants from 4 countries: DR-Congo (2), Djibouti, Gabon, Guinea 	1st distance learning (principally on-demand) Waste Management Administration, Environmental Administration and Waste Disposal of Japan; Waste Management in Osaka City; Environmental Hygiene in Developing Countries; Outline of Hazardous Waste Management; 3Rs Approach, etc. 2nd distance learning (virtual observation, real-time discussion, etc) Observation of Former Landfill Site, Introduction of Takakura Composting Method, Outline of Waste to Energy Technology, Observation of Resource Recycling Facility, Observation of Medical Waste Treatment Plant, Observation of Separation Collection in Kyoto City



Real-time session

GEC Networking Project for Former Training Course Participants



Since FY1998, the GEC has established a GEC Overseas Ex-participant Network in order to provide follow-up and accurately understand the current needs in developing countries. We are working to reinforce the network by operating a member (former trainee) website (renamed 'JICA-GEC Network' in FY2005) and organising local follow-up seminars. Starting in 2018, the GEC has moved to a system with a new network platform leveraging the increasingly popular SNS services.

In FY2021, 17 members from 8 and 9 participants in FY2020 course and in FY2021 course, respectively were newly registered.



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