

Global Environment Centre Foundation

Annual Report 2018



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Foreword

The Global Environment Centre Foundation (GEC) is engaged in various projects to support the conservation of the global environment, including through technical cooperation for developing countries and by addressing climate change mitigation. In particular, we are involved in a broad range of activities in support of the Sustainable Development Goals (SDGs), adopted and launched by the UN General Assembly in September 2015, while aiming to help reduce greenhouse gases under the Paris Agreement.

In FY2018, our activities to support the United Nations Environment Programme (UNEP) International Environmental Technology Centre (IETC) included the organisation of international symposia both in Japan and overseas focused on the global issue of plastic pollution, in coordination with partners including the City of Osaka as well as IETC. As part of the Project to Create and Support Core Local Businesses (commissioned by the Kansai Bureau of Economy, Trade and Industry), we have promoted overseas deployment of advanced Japanese environmental and energy-saving technologies, specifically in China and ASEAN, leveraging the Kansai-Asia Environmental and Energy-Saving Business Promotion Forum (Team E-Kansai) as a platform. Within the framework of international city-to-city cooperation, we also implemented projects under the Programme for the Promotion of Water Environment Business (commissioned by Shiga Prefecture) including improvement of water environment in Quang Ninh Province, Vietnam.

With regard to climate action, the 24th Conference of the Parties to the UN Framework Convention on Climate Change (COP 24) held in Poland in December 2018 adopted a rulebook for implementing the Paris Agreement to ensure its full implementation in 2020 and beyond. In June 2019, the Japanese government adopted a Long-Term Strategy under the Paris Agreement as a Cabinet decision, with the aim of achieving positive interaction between the environment and growth through innovation, substantially reducing national greenhouse gas emissions and making maximum contribution to the reduction of global emissions. In June 2019, the G20 energy and environment ministers' meeting in Karuizawa, Nagano Prefecture agreed on the G20 Innovation Action Plan on Energy Transitions and Global Environment for Sustainable Growth.

In an effort to reinforce the Joint Crediting Mechanism (JCM) promoted by the Japanese government in coordination with partner countries, GEC is engaged in the management of the equipment assistance programme to provide financial support for projects to combat global warming in the partner countries. We also implemented various initiatives to increase understanding of the JCM both in Japan and overseas, while managing the low-carbon technology innovation programme to improve and disseminate Japanese low-carbon technologies for developing countries. By implementing such programmes on behalf of the Ministry of the Environment, GEC supports initiatives to combat global warming overseas.

Furthermore, we have been enhancing international cooperation for human resource development among others, providing international training through the JICA Group Training Project, including courses on the improvement of solid waste management technologies and measures against air pollution caused by automobile exhaust.

Going forward, GEC remains committed to closer coordination and cooperation with other institutions for promoting positive action globally, leveraging our expertise, experience and national as well as international networks to contribute to the Sustainable Development Goals (SDGs) and measures against global warming under the Paris Agreement.

We would greatly appreciate your continued understanding and support of our activities.



July 2019

SUZUKI, Naoshi
President
Global Environment Centre Foundation

Technical
Cooperation
for
Developing
Countries

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

Building on GEC's rich experience and expertise, as well as its broad networks both in Japan and overseas, we are engaged in the operation of international meetings organised by IETC (such as workshops, symposia, seminars and visits).



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Project to Create and Support Core Local Businesses

Through the Kansai-Area Environmental and Energy-Saving Business Promotion Forum (Team E-Kansai), we are enhancing our networks with public and private institutions in China and the ASEAN area and helping to solve local environmental issues, aiming to disseminate the environmental and energy-saving technologies of Forum companies on a commercial basis.



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Promotion of Water Environment Business

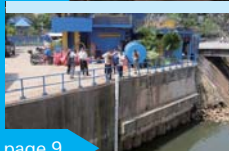
We are implementing a programme to help member companies and organisations of the Shiga Water Environment Business Promotion Forum develop projects and businesses overseas, including through the organisation of breakout sessions, research to identify water environment issues in Asia, and regional seminars and business matching events.



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

Our programme for TEMM, held annually since 1999, includes the provision of operational support for the ministerial meeting and related side events, as well as support for joint presentations among the three countries on environmental industry technologies.



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Research on Potential JICA Projects – Research for Introduction of Water Quality Monitoring Systems in Indonesia

A research project for the introduction of water quality monitoring systems in Indonesia was adopted as part of the research on potential projects conducted by JICA to help small firms expand their operations overseas. Within this framework, we conduct feasibility studies including on a remote water quality monitoring system requiring limited maintenance, equipped with a function for automatically cleaning water quality sensors and a data transmission function.

Addressing
Climate
Change
Mitigation

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Financing Programme for JCM Model Projects

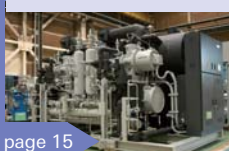
As an executing agency for assistance projects on behalf of the Ministry of the Environment, we provide financial support for the implementation of projects to combat global warming in partner countries, to be registered as JCM projects.



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Promotion Activities of the Joint Crediting Mechanism

We promote understanding of projects including for the financing of JCM both in Japan and overseas, facilitate the smooth operation of, and participation in, the JCM project assistance programme, and act as secretariat for the REDD+ project assistance programme.



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Evaluation and Verification of Technologies for Reducing CO₂ Emission

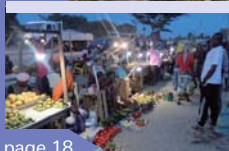
We conduct research to assess how the JCM scheme contributes to the introduction of excellent low-carbon technologies overseas.



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Support for Collaboration with the Asian Development Bank

We help the Ministry of the Environment review applications for projects to be financed by the Japan Fund for JCM, established by the Ministry under the Asian Development Bank to promote the dissemination of excellent low-carbon technologies to developing countries in Asia.



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Financing Programme to Demonstrate Advanced Low-Carbon Technology Innovation for Further Deployment in Developing Countries

As an executing agency for the grant programme of the Ministry of the Environment, we provide financial support for technological development to renovate and disseminate Japanese excellent low-carbon technologies in a way suited to the situation of developing countries.

International
Training

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Japan International Cooperation Agency (JICA) Group Training Project

Commissioned by JICA, we conduct training courses in Japan for engineers and administrators from developing countries with the objective of improving their capacity to solve and manage local environmental issues.



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GEC Networking Project for Former Training Course Participants

We have been implementing this networking project since FY1998 to follow up on former JICA participants and identify exact needs in developing countries. We are seeking to enhance the network thus developed by operating an exchange site and organising follow-up seminars.

SDGs																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

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



2018 International Symposium on Environment in Osaka

Under the FY2018 Project for Collaboration with the UNEP IETC, commissioned by the City of Osaka, the Global Environment Centre Foundation (GEC) conducted activities such as the planning and organisation of international workshops and other sessions in Osaka City, research on environmental needs in Thailand and India for promoting environmental technology transfer, and support for IETC public information activities. As a project commissioned by IETC, we also issued publications on single-use plastics and an overview of waste management in small island developing countries, both pertaining to the Integrated Waste Solutions at the National and Local Levels.

Support for Project for Collaboration with IETC (Commissioned by City of Osaka)

(1) Support for Organisation of 2018 International Symposium on Environment in Osaka

On Saturday 23 and Sunday 24 June 2018, we supported the management of the International Symposium on the Environment, jointly held with the UNEP IETC and City of Osaka. The symposium hosted various presentations and discussions to enable citizens to deepen their understanding of plastic pollution, which is the theme of this year's UN World Environment Day, and on the Sustainable Development Goals (SDGs), and to reflect on efforts to achieve the SDGs.



Keynote speech by Mr. Alverson, Director of UNEP IETC

Outline of the Symposium:

- Date	Saturday 23 and Sunday 24 June 2018
- Official name	2018 International Symposium on Environment in Osaka
- Venue	hu+g Hall, 5th Floor, hu+g Museum (Osaka)
- Organisers	Environment Bureau, City of Osaka and UNEP IETC
- Participants	About 120 (total of two days)
- Languages	English and Japanese



Panel discussion

(2) Survey on Environmental Needs in Asia

We conducted survey on environmental needs in Asia in Bangkok, Thailand and Mumbai, India (Maharashtra Province). Continuing from the previous year, we organised an environmental seminar in Thailand and prepared a needs survey report by analysing the conditions of waste management in local cities.

In Mumbai, India (Maharashtra Province), our activities included participating in events and meetings to identify emerging needs for environmental support and building partnerships with local government agencies and private businesses. A list of main activities follows:

• Bangkok, Thailand

Focusing on plastic pollution, one of the latest and most pressing global issues addressed by UNEP at its own initiative, we organised a seminar on the theme of the “Circular Economy”. A large number of participants gathered at the seminar for a broad range of important activities including information sharing among government officials, private businesses and associations from both Japan and Thailand, provision of global information from the UN and other international organisations, briefings on technologies by Japanese and Thai companies and business matching sessions.

Seminar: Plastics in a Circular Economy

- Date and time	7 March 2019, 9:00-15:30
- Organiser	UNEP IETC and Global Environment Centre Foundation (GEC)
- Co-organisers	Pollution Control Department (PCD) Ministry of Natural Resources and Environment, Thailand (MONRE), Department of Local Administration (DLA), Department of Industrial Works (DIW), Thailand (MOI), Ministry of Economy, Trade and Industry (METI Kansai), City of Osaka, and Team E Kansai
- Support	Embassy of Japan in Thailand
- Participants (110 people)	UNEP, PCD-MONRE, DLA-DIW, The Federation of Thai Industries, METI Kansai, City of Osaka, Embassy of Japan in Thailand, Japanese technology providers (Team E Kansai, Team Osaka Network), Thai technology providers, etc.
- Languages	English, Japanese and Thai

• Mumbai, India (Maharashtra Province)

This year's research on needs newly covered the city of Mumbai, Maharashtra Province. We conducted the following activities primarily aimed at building partnerships with local governments and related institutions.



Group photo at the India Supply Chain 2018 Conference

- First survey: Tuesday 10 – Saturday 14 April (participation in the India 3R Forum, visit to the city of Mumbai, etc.)
- Second survey: Wednesday 14 – Friday 16 November (participation in the India Supply Chain 2018 Conference, etc.)

On Thursday 15 November, we participated in the India Supply Chain 2018 Conference, organised by the Association of Supply Chain Professionals, to introduce the activities of GEC. Some 200 participants attended the event from Association member companies, government agencies and academic/research institutions across India, as well as from Japan (including representatives from the Japanese Consulate in Mumbai, private businesses with a local presence, the City of Osaka, and universities).

(3) PR/Outreach activities

In addition to participating in environmental events in Japan and overseas to introduce IETC projects, we conducted the following activities to support its public information and outreach.

• Participation in environmental events overseas

- Regional 3R Forum in Asia and the Pacific: Tuesday 10 – Thursday 12 April 2018 in Indore, India
- Fourth Session of the UN Environment Assembly (UNEA-4): Monday 11 – Friday 15 March 2019 in Nairobi, Kenya



Regional 3R Forum in Asia and Pacific (Indore, India)

• Participation in environmental events in Osaka

- Eco Ennichi 2018 (3 November 2018 at Osaka Hanahaku Memorial Hall)
- One World Festival (2–3 February 2019 at Osaka Kita Ward Citizen Centre)



Opening session of UNEA-4 (Nairobi, Kenya)

• Other activities

- Support for IETC's participation in EcoPro 2018
- Production of a poster to promote the reduction of single-use plastics (in Japanese)
- Japanese translation of the IETC website
- Assistance in the preparation of the IETC 2018 annual report (in English and Japanese)

Integrated Waste Solutions at the National and Local Levels (UNEP IETC-commissioned Project)

We conducted the following activities in support of IETC's focused programme "Integrated Waste Solutions at the National and Local Levels".

(1) Publication of "Single-Use Plastics: A Roadmap for Sustainability"

This publication was launched globally in June 2018 by Narendra Modi, Prime Minister of India, and the Executive Director of UNEP at the World Environment Day event in India.

(2) Publication of "Small Island Developing States: Waste Management Outlook"

This publication was officially launched in March 2019 by UNEP IETC, at a side event during UNEA-4.



UNEP publication "Single-Use Plastics: A Roadmap for Sustainability"



UNEP publication "Small Island Developing States: Waste Management Outlook"



Launch of the publication by IETC Director at UNEA-4

Project to Create and Support Core Local Businesses

Since May 2013, GEC has been serving as secretariat to the Kansai Area Environmental and Energy-Saving Business Promotion Forum (Team E-Kansai), in cooperation with METI Kansai.

Building on the Team E-Kansai initiatives thus far, METI Kansai commissioned us to undertake the Project to Create and Support Local Core Businesses in FY2018.

(1) Activities in key areas

For this project, we designated China (Guangdong and Liaoning Provinces), Vietnam, Indonesia and Thailand as key areas, and developed frameworks for cooperation with local business associations and government agencies with the support of coordinators. We have also supported the creation of new projects and the development of sales overseas through various events such as seminars, networking events and business matching.

List of activities in FY2018

Japan	• Seminar for investment in Nanhai District, Foshan, Guangdong Province, China	31 July 2018	Osaka City
	• Networking event on wastewater disposal technology with the Wastewater Management Service Association, Sichuan Province, China	31 August 2018	Osaka City
	• Preliminary briefing on needs in preparation for a water treatment proposal session for member breweries to the Vietnam Beer and Alcohol Beverage Association (VBA)	1 November 2018	Osaka City
	• Seminar for Water/Environment Business Collaboration in Asia, co-organised with Osaka Chamber of Commerce and Industry	14 December 2018	Osaka City
	• Participation in the 11th Kawasaki International Eco-Tech Fair and the Asia-Pacific Eco-Business Forum	7–8 February, 2019	Kawasaki City
China	• Participation in FBC Guangdong 2018 (Manufacturers' Business Negotiation) in Nanhai	12–13 September 2018	Foshan, Guangdong Province
	• First consultation for FY2018 on Japan-China joint projects, etc., in collaboration with the Science and Technology Agency, Guangdong Province, China	25–26 October 2018	Guangzhou, Guangdong Province
	• Second consultation for FY2018 on Japan-China joint projects, etc., in collaboration with the Science and Technology Agency, Guangdong Province, China	26 March 2019	Guangzhou, Guangdong Province
Vietnam	• Matching event in collaboration with the Vietnam Beer and Alcohol Beverage Association (VBA)	5–6 December 2018	Hanoi/Hung Yên Province
	• Matching event in collaboration with the National University of Civil Engineering, Hanoi	7 December 2018	Hanoi
	• Environmental technology seminar in collaboration with the Vietnam Textile and Apparel Association (VITAS)	22 January 2019	Nam Dinh Province
Thailand	• Environmental technology business matching event in collaboration with IETC, etc.	7 March 2019	Bangkok
Indonesia	• Water/Environmental Technology Business Matching Seminar and Networking Café in Jakarta	4–6 September 2018	Jakarta

(2) Information dissemination through the Team E-Kansai platform

• Provision of information through e-mail magazines

We sent a total of 24 e-mail magazines on a biweekly basis to provide information on specific Team E-Kansai projects (dispatch of missions, organisation of seminars, etc.), surveys and needs related to the environment and energy efficiency in Asia, and applications for projects to be supported by public institutions.

• Provision of information to full members through newsletters

We sent a total of three newsletters to our full members to provide information on needs supplied by local coordinators and on upcoming events. We also posted a total of eight reports from local coordinators (one from Liaoning Province, China, three from Guangdong Province, China, two from Thailand and two from Vietnam), available to full members only.



First consultation for FY2018 on Japan-China joint projects, etc., in collaboration with the Science and Technology Agency, Guangdong Province, China



Matching event in collaboration with the Vietnam Beer and Alcohol Beverage Association (VBA)



Matching event in collaboration with the National University of Civil Engineering, Hanoi



Environmental technology business matching event in collaboration with IETC, etc.



Water/Environmental Technology Business Matching Seminar and Networking Café in Jakarta

Promotion of 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 cumulative 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) Study on identifying technological needs and issues related to the water environment in the Asian region, and (3) Implementation of seminars, technical exchange meetings and business matching in Vietnam.

(1) Support for seminars and sessions held in Shiga Prefecture

Two Shiga Water Environment Business Seminars were organised, at the Nagahama Institute of Bio-Science and Technology in October 2018 and at Collabo Shiga 21 in March 2019, to introduce updates on actual cases of business operation in Asia, financial support for the water environment business, and water environment needs in Asia identified through investigation.

Three closed Asia Regional Sessions for Forum members were also held at Collabo Shiga 21 in November 2018, February 2019 and March 2019 to share useful information such as the results of research, and planned seminars and other events.

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

In consideration of the needs from members of Team Water Shiga, surveys were conducted in Vietnam, the Philippines, and China as priority countries.

Through walk-in surveys and interviews with organisations such as local administrative agencies and business groups related to the water environment and Japan-related organisations in those countries, technological needs or issues concerning the water environment were identified. Details regarding the investigation are outlined below.

Period	Country/region	Main destinations	Objective
November 2018	Vietnam (Binh Duong)	Binh Duong Center of Natural Resources and Environment Monitoring (BREM), Vietnam Singapore Industrial Park (VSIP), Uyen Hung Industrial District, Chyang Sheng Viet Nam Factory, JICA Viet Nam Office HCMC Branch	Research on technological needs, problem, emission control, water quality automatic monitoring, etc. related to water environment
January 2019	Vietnam (Quang Ninh)	Cai Lan Industrial Park, Vinacomin, JETRO Hanoi	Research on technological needs, problem, etc. related to water environment
February 2019	Philippines	JICA Philippines Office, Hiblow Philippines, Baliwag Water District, Santa Maria Water District	Research on technological needs, problem, ODA project, emission control, etc. related to water environment
March 2019	China	Ecology and Environment Department of Hunan, Hunan Association of Environmental Pollution and Industry, Hunan Association of Environmental Pollution Control Industry, Changsha National High-Tech Industrial Development Zone, Hunan Pilot Yanghu Reclaimed Water CO., LTD., Lihe Technology Hunan CO., LTD., Hunan Bossco Environmental Protection Technology Co., Ltd	Research on technological needs, problem, emission control, business strategy of analyser/environment engineering companies, etc. related to water environment

(3) Implementation of technical exchange seminar on the water environment and business matching

A technical exchange seminar on the water environment was held in Quang Ninh Province, Vietnam in January 2019 to share information related to water environmental challenges and characteristics in both countries. The Shiga Prefectural Government introduced their efforts to date to promote the water environment-related business and the activities of the Shiga Water Environment Business Promotion Forum. In addition, the Quang Ninh Provincial Government presented their recent situation, measures and challenges concerning the water environment in Quang Ninh Province and Hal Long Bay. In addition, Japanese member companies of Team Water Shiga introduced their products and technologies. At the end of the seminar, individual consultations and business matching between Japanese companies and local stakeholders were arranged.

Technical exchange seminar on water environment

City	Period	Organizer
Viet Nam (Quang Ninh Province)	January 2019	Department of Natural Resources and Environment of Quang Ninh, Shiga Prefecture, Shiga Water Environment Business Promotion Forum



Technical exchange seminar on water environment

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) has been held annually since 1999, culminating in the implementation of cooperation projects under the Tripartite Joint Action Plan (TJAP, 2015–2019). As part of the project commissioned by the Overseas Environmental Cooperation Centre, Japan (OECC), GEC conducted several activities including: support and assistance for the ministerial meeting (20th TEMM, held on 22–24 June 2018 in Suzhou, China) (including related sessions such as the Working-Level Meeting) and one of its side events; support for establishing a web-platform of the Tripartite Cooperation Network for Environmental Pollution Prevention and Control Technologies, one of the cooperation projects under TJAP; and support for the preparation and implementation of the second China-Japan-Korea Environmental Industry and Technology Joint Exhibition at CIEPEC2018 (the 16th China International Environmental Protection Exhibition and Conference, held on 7–9 June 2018 in Beijing, China).



Mr. Nakagawa, then Japanese Minister of the Environment, at TEMM20



Environment Ministers of Japan, China and Korea signing the TEMM20 Joint Communique

Feasibility Survey for Introducing Remote Networking and a Maintenance-free Water Quality Monitoring System in Indonesia

In Indonesia, there is a need for continuous monitoring of rivers and industrial drainage to grasp the current conditions of river water quality and to strengthen regulations and guidance on pollution sources.

Indonesia Agency for Technology Evaluation and Application (BPPT) has developed a water quality monitoring system for rivers jointly with the Ministry of Environment and Forestry, and has introduced it at 19 locations nationwide. However, the system has problems such as contamination of the sensor part due to the high turbidity of river water.

The Remote Networking and Maintenance-free Water Quality Monitoring System, equipped with an automatic cleaning function and data transfer function, was developed by Japan project members to resolve such problems in Indonesia. A field survey to assess whether maintenance-free operation is possible for more than one month was implemented and its business development plan was considered.

This survey was conducted by utilising JICA's financial scheme, and GEC participated as a project member along with Tanahashi Electric Machinery, Horiba, Shiga Prefectural Government, Mitsubishi UFJ Research & Consulting, etc., and provided technical advice and support to plan the ODA project.



Project site for water quality monitoring system in Jakarta

Technology Transfer for Developing Countries through the Joint Crediting Mechanism



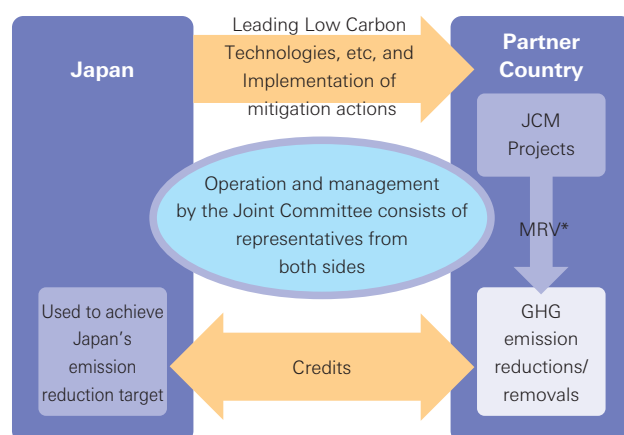
Introduction of 5MW Floating Solar Power System on Industrial Water Reservoir

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 low-carbon technologies, products, systems, services, and infrastructure as well as the implementation of mitigation actions, and contributes to sustainable development in developing countries. It appropriately evaluates contributions to GHG emission reductions or removals from Japan in a quantitative manner 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 removals. 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

Programmes and Activities Supported by the Ministry of the Environment, Japan

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

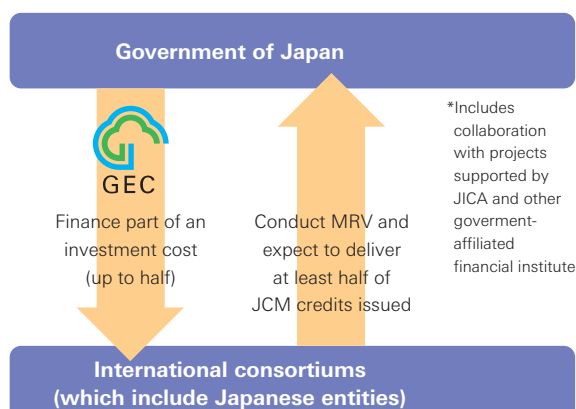
Financing Programme for JCM Model Projects

GEC has been supporting the MOEJ to implement the Financing Programme for JCM Model Projects. Since 2014, officially assigned by the MOEJ, GEC has been an implementing organisation of the Financing Programme for JCM Model Projects.

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

Each year GEC calls for, reviews and selects project proposals for the financing programme, and manages the selected projects. In FY2018, GEC held two open calls for proposals in April and August and selected 24 projects in total in consultation with the MOEJ (see Table below).

JCM Model Projects by MOE



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

JCM Model Projects Selected in FY2018

No.	Partner Country	Representative Participant	Title
1	Mongolia	Sharp Energy Solutions Corporation	21MW Solar Power Project in Bayanchandmani
2	Vietnam	Nihon Crant Co. Ltd.	Modal Shift from Truck to Cargo Ship with Freshness Preservation Reefer Container
3	Vietnam	Yokohama Water Co., Ltd.	Energy Saving by Introduction of Inverters for Raw Water Intake Pumps
4	Indonesia	Otsuka Pharmaceutical Factory, Inc.	Energy Saving by Introducing High Efficiency Autoclave to Infusion Manufacturing Factory
5	Indonesia	Hokusan Co., Ltd.	Introduction of CNG-Diesel Hybrid Equipment to Public Bus in Semarang
6	Palau	Sharp Energy Solutions Corporation	Introduction of 0.4MW Rooftop Solar Power System in Supermarket
7	Mexico	Sharp Energy Solutions Corporation	30MW Solar Park Project in Guanajuato
8	Myanmar	Global Engineering Co., Ltd.	Introduction of 8.8MW Power Generation System by Waste Heat Recovery for Cement Plant
9	Thailand	The Kansai Electric Power Company, Incorporated	Introduction of Gas Co-generation System and Absorption Chiller to Fiber Factory
10	Thailand	Tokyo Century Corporation	25MW Rooftop and Floating Solar Power Project in Industrial Park
11	Thailand	Toyota Motor Corporation	Introduction of 3.4 MW Rooftop Solar Power System in Technical Center and Office Buildings
12	Philippines	Chodai Co., Ltd.	2.5MW Rice Husk Power Generation Project in Butuan City, Mindanao
13	Philippines	Sharp Energy Solutions Corporation	Introduction of 4MW Rooftop Solar Power System in Tire Factory
14	Philippines	Chodai Co., Ltd.	0.16MW Micro Hydro Power System in Taguibo Water Supply Facility, Mindanao
15	Indonesia	Voith Fuji Hydro K. K.	Rehabilitation Project of Power Generation System at karai 7 Mini Hydro Power Plant
16	Mexico	Suntory Spirits Limited	Introduction of Energy Efficient Distillation System to Tequila Plant
17	Chile	Liberal Solution Co., Ltd.	2MW Solar Power and 4MWh Storage Battery Project in San Pedro de Atacama city
18	Myanmar	Kirin Holdings Company, Limited	Introduction of Biogas Boiler and Waste Heat Recovery System to Beer Factory
19	Kenya	Sharp Energy Solutions Corporation	38MW Solar Power Project in Makueni county
20	Lao PDR	Sharp Energy Solutions Corporation	11MW Solar Power Project in Savannakhet Province
21	Indonesia	Aura Green Energy Co., Ltd.	12MW Biomass Power Plant Project in Ache Province, Sumatera

For Further information on JCM:
JCM Official Website
<https://www.jcm.go.jp/>
GEC JCM Website
<http://gec.jp/jcm/>

No.	Partner Country	Representative Participant	Title
22	Indonesia	Tokyo Century Corporation	Introduction of High Efficiency Injection Molding Machine to Plastic Parts Factory
23	Thailand	TEPIA Corporation Japan Co.,Ltd.	Introduction of Biomass Boiler to Cooking Oil Factory
24	Thailand	Kanematsu KGK Corp.	Introduction of 0.8MW Solar Power System and High Efficiency Refrigerator to Food Factory

As of March 2019, GEC has managed total of 125 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.

Photos from Model Projects that completed installation in FY2018

Partner Country

- Representative Participant
- Project Participant
- Title



Indonesian

- Power Generation by Waste Heat Recovery in Cement Industry
- JFE Engineering Corporation
- PT Semen Indonesia (Persero) Tbk.



Cambodia

- Introduction of High Efficiency LED Lighting Utilizing Wireless Network
- Minebea Co., Ltd
- Shukaku Inc.
- Overseas Cambodian Investment Corporation
- Siem Reap Provincial Hall
- APSARA



Thailand

- Installation of Co-Generation Plant for On-Site Energy Supply in Motorcycle Factory
- Nippon Steel & Sumikin Engineering Co., Ltd.
- NS Plant Designing Corporation
- NS-OG Energy Solutions (Thailand) Ltd.



Mngolia

- Installation of 8.3MW Solar Power Plant in Ulaanbaatar suburb Farm
- Farmdo Co., Ltd.
- Everyday Farm LLC
- Bridge LLC



Vietnam

- Installation of Energy Saving Equipment in Lens Factory
- HOYA CORPORATION
- HOYA LENS VIETNAM LTD (HOLV)



Indonesia

- Introduction of LED Lighting to Sales Stores
- FAST RETAILING CO., LTD.
- PT. Fast Retailing Indonesia



Indonesia

- Introduction High Efficiency Looms in Weaving Mill
- Nisshinbo Textile Inc
- PT. NIKAWA TEXTILE INDUSTRY



Costa Rica

- 5MW Solar Power Project in Belen
- NTT Data Institute of Management Consulting, Inc.
- Generacion Solar Fotovoltaica Belen Sociedad Anonima Coope guanacaste R.L.,



Cambodia

- Introduction of 1MW Solar Power System and High Efficiency Centrifugal Chiller in Large Shopping Mall
- AEON MALL Co., Ltd.,
- AEONMALL (CAMBODIA) CO., LTD.



Myanmar

- Introduction of Energy Saving Brewing Systems to Beer Factory
- Kirin Holdings Company, Limited. ,
- Myanmar Brewery Ltd



Thailand

- Introduction of High Efficiency Ion Exchange Membrane Electrolyzer in Caustic Soda Production Plant
- AGC Inc.
- AGC Chemicals (Thailand) Co, Ltd



Thailand

- Introduction of LED Lighting to Sales Stores
- FAST RETAILING CO., LTD.
- UNIQLO (THAILAND) CO.,LTD



Vietnam

- Introduction of Energy Saving Equipment to Automotive Wire Production Factory
- YAZAKI PARTS CO., LTD
- YAZAKI EDS VIETNAM Co., LTD



Thailand

- Introduction of Co-generation System to Motor Parts Factory
- DENSO / PP (Thailand):
- Siam DENSO Manufacturing Co., Ltd. (SDM)



Thailand

- Introduction of Energy Saving Refrigerator and Evaporator with Mechanical Vapor Recompression in Amino Acid Producing Plant
- KYOWA HAKKO BIO CO. LTD., / PP (Thailand):
- THAI KYOWA BIOTECHNOLOGIES CO.,LTD.



Thailand

- Introduction of 2.0MW Rooftop Solar Power System for Power Supply in Factory
- Finetech Co., Ltd.
- Siam Brothers Corp., Ltd.
- Thai Merry Co., Ltd.



Myanmar

- Rice Husk Power Generation in Rice Mill Factory in Ayeyarwady
- Fujita Corporation
- Myaung Mya FM Biomass Power Co., Ltd
- Myanmar Agribusiness Public Corporation (MAPCO) Limited



Indonesia

- Introduction of 0.5MW Solar Power System to Aroma and Food Ingredients Factory
- Next Energy & Resources Co., Ltd.,
- PT. Indesso Aroma



Cambodia

- Energy Saving by Inverters for Distribution Pumps in Water Treatment Plant
- METAWATER Co., Ltd
- Phnom Penh Water Supply Authority



Chile

- Installation of 1MW Solar PV System on University Rooftop
- Waseda Environmental Institute
- MGM Innova Capital Chile SpA



Vietnam

- Introduction of High Efficiency Centrifugal Chiller to Rubber Products Factory
- YUASA TRADING CO., LTD.,
- VIETNAM NOK CO., LTD.



Philippines

- Introduction of 1.53MW Rooftop Solar Power System in Auto Parts Factories
- Tokyo Century Corporation
- Enomoto Philippine Manufacturing, Inc.
- Aikawa Philippines, Inc.



Philippines

- Introduction of 1MW Rooftop Solar Power System in Vehicle Assembly Factory
- Toyota Motor Corporation
- Toyota Motor Philippines Corp.

Indonesia

- Introduction of Absorption Chiller to Chemical Factory
- Tokyo Century Corporation
- PT. Timuraya Tunggal



Philippines

- Installation of 1.2MW Rooftop Solar Power System in Refrigerating Warehouse
- Tokyo Century Corporation
- TMU Solar Philippines Inc.



Indonesia

- Introduction of CNG-Diesel Hybrid Equipment to Public Bus in Semarang
- Hokusan Co.,Ltd.
- BLU UPTD Trans Semarang



Myanmar

- Introduction of Energy Efficient Refrigeration System in Logistics Center
- Ryobi Holdings Co., Ltd.
- Ryobi Myanmar Distribution Service Co., Ltd

Indonesia

- Energy Saving by Introducing High Efficiency Autoclave to Infusion Manufacturing Factory
- Otsuka Pharmaceutical Factory, Inc.
- PT. Otsuka Indonesia

JCM Model Projects by MOEJ (FY2013–2018)

- Energy Efficiency
- Effective Use of Energy
- Renewable Energy
- Transport
- Waste Handling and Disposal

**Total
128 projects**

Mongolia: 7 Projects

- Heat Only Boiler (HOB)
- 15MW Solar PV
- 2.1MW Solar PV in Farm
- 20MW Solar PV
- 10MW Solar PV
- 21MW Solar PV
- 8.3MW Solar PV in Farm

Myanmar: 7 Projects

- 700kW Waste to Energy Plant
- Brewing Systems to Brewery Factory
- Once-through Boiler in Instant Noodle Factory
- 1.8MW Rice Husk Power Generation
- Refrigeration System in Logistics Center
- 8.8MW Waste Heat Recovery in Cement Plant
- Brewing Systems and Biogas Boiler to Brewery Factory

Bangladesh: 5 Projects

- Centrifugal Chiller
- Loom at Weaving Factory
- 315kW PV-diesel Hybrid System
- 50MW Solar PV Power Plant
- Centrifugal Chiller

Saudi Arabia: 1 Project

- Electrolyzer in Chlorine Production Plant

Kenya: 2 Projects

- 1MW Solar PV at Salt Factory
- 38MW Solar PV

Maldives: 1 Project

- 186kW Solar Power on School Rooftop

Laos: 3 Projects

- Amorphous transformers
- 14MW Floating Solar PV
- 11MW Solar PV

Cambodia: 4 Projects

- LED Street Lighting
- 200kW Solar PV at International School
- Solar PV & Centrifugal Chiller
- Inverters for Distribution Pumps

Indonesia: 30 Projects

- Centrifugal Chiller at Textile Factory
- Energy Saving at Convenience Store
- Refrigerants to Cold Chain Industry
- Double Bundle-type Heat Pump
- Centrifugal Chiller at Textile Factory 2
- 30MW Waste Heat Recovery in Cement Industry
- 507kW Solar Power Hybrid System
- Regenerative Burners
- Centrifugal Chiller at Textile Factory 3
- Old Corrugated Cartons Process

Thailand: 28 Projects

- Energy Saving at Convenience Store
- 1MW Solar PV on Factory Rooftop
- Upgrading Air-saving Loom
- Centrifugal Chiller & Compressor
- Centrifugal Chiller in Tire Factory
- Co-generation in Motorcycle Factory
- Air Conditioning System & Chiller
- Refrigeration System
- Ion Exchange Membrane Electrolyzer
- Chilled Water Supply System
- LED Lighting to Sales Stores
- 12MW Waste Heat Recovery in Cement Plant
- Co-generation System
- Refrigerator and Evaporator
- 2MW Solar PV
- 3.4MW Solar PV
- Heat Recovery Heat Pump
- 5MW Floating Solar PV
- 30MW Solar PV
- Boiler System in Rubber Belt Plant
- Air-conditioning Control System
- Biomass Co-generation System
- Energy Saving Equipment in Port
- Co-generation in Fiber Factory
- 25MW Solar PV in Industrial Park
- 3.4MW Solar PV
- Biomass Boiler
- 0.8MW Solar PV and Centrifugal Chiller

Viet Nam: 18 Projects

- Digital Tachographs
- Amorphous transformers 1
- Air-conditioning in Hotel
- Air-conditioning in Lens Factory
- Container Formation Facility
- 320kW Solar PV in Shopping Mall
- Amorphous transformers 2
- Air-conditioning Control System
- Electricity Kiln
- High Efficiency Water Pumps 1
- Energy saving Equipment in Lens Factory
- Amorphous transformers 3
- Energy Saving Equipment in Wire Production Factory
- Amorphous transformers 4
- Energy Saving Equipment in Brewery Factory
- High Efficiency Chiller
- Modal Shift with Reefer Container
- Inverters for Raw Water Intake Pumps

Philippines: 8 Projects

- 15MW Hydro Power Plant
- 4MW Hydro Power Plant
- 1.53MW Rooftop Solar PV
- 1MW Rooftop Solar PV
- 1.2MW Rooftop Solar PV
- 2.5MW Rice Husk Power Generation
- 0.16MW Micro Hydro Power Plant
- 4MW Solar PV

Mexico: 6 Projects

- 2.4MW Power Generation with Methane Gas Recovery System
- Once-through Boiler and Fuel Switching
- 64MW Wind Farm
- 20MW Solar PV
- 30MW Solar PV1
- Energy Efficient Distillation System

Costa Rica: 2 Projects

- 5MW Solar PV
- Chiller and Heat Recovery System

Palau: 4 projects

- 370kW Solar PV for Commercial Facilities
- 155kW Solar PV for School
- 445kW Solar PV for Commercial Facilities
- 0.4MW Solar PV for Supermarket

Chile: 2 Projects

- 1MW Rooftop Solar PV
- 2MW Solar PV and 4MWh Storage Battery

- Upgrading to Air-saving Loom
- Centrifugal Chiller in Shopping Mall
- Smart LED Street Lighting System
- Once-through Boiler System in Film Factory
- Gas Co-generation System
- Once-through Boiler in Golf Ball Factory
- 1.6MW Solar PV in Jakabaring Sport City
- 10MW Hydro Power Plant
- Looms in Weaving Mill
- LED Lighting to Sales Stores
- Industrial Wastewater Treatment System
- 0.5MW Solar PV
- Gas Co-generation system
- Absorption Chiller
- 10MW Hydro Power Plant
- High Efficiency Autoclave
- CNG-Diesel Hybrid Public Bus
- Rehabilitation of Hydro Power Plant
- 12MW Biomass Power Plant
- Injection Molding Machine

Promotion Activities of the Joint Crediting Mechanism

GEC carried out various activities to promote the JCM scheme as outlined below.

(1) Seminar on JCM Project Implementation in Jakarta, Indonesia

More than 100 participants have attended for the seminar from both the public and private sectors in Indonesia and Japan.

In this seminar, various stakeholders presented the progress of respective JCM schemes, including The Ministry of the Environment, Japan (MOEJ), the Coordinating Ministry of Economic Affairs and the JCM secretariat of Indonesia and GEC. Japan International Cooperation Agency (JICA) explained about overseas loans and investments scheme. Furthermore, 7 representative entities who are implementing the JCM projects were invited to present the progress and experiences. At the end, Toyama city introduced several projects within City-to-City Collaboration Programme for Low-Carbon Society scheme.



(2) Seminar on JCM Project Implementation in Bangkok, Thailand

By far the largest JCM-related gathering outside Japan, more than 150 participants have attended for the seminar from both the public and private sectors in Thailand.

Government officials of both countries, Japan and Thailand and other related organizations have presented the progress and experiences of respective JCM schemes. Also, the project participants of JCM Projects and those of City-to-City Collaboration Programme for Low-Carbon Society Projects have presented the progress of the projects related to energy efficiency and renewable energy. Furthermore, the effort of eliminating greenhouse gas was presented by Thai leading companies and banks. At the end, the Business Matching for technology selling and buying companies was conducted with the purpose of building possible future JCM Projects and 21 companies have participated in it.



(3) 'JCM Model Project Symposium 2018 –Overseas Development of Environmental Infrastructure through JCM Project –' in Tokyo, Japan

This symposium was attended by more than 200 participants from a wide range of industries. MOEJ presented the latest situation of JCM Projects. Afterwards, the trend and the vision of overseas development of infrastructure were explained by GEC. Then 4 entities who are implementing infrastructure development reported the background and experience of the projects. At the end, four entities who are engaged in project feasible study were invited to have a panel discussion with all the participants of the symposium, with the theme of "The current situation of JCM partner countries and the keys of project discovery".



(4) Developing JCM REDD+ MRV methodology

REDD+ stands for 'Reducing Emissions from Deforestation and forest Degradation, plus the sustainable management of forests, and the conservation and enhancement of forest carbon stocks'.

In order to promote examination of MRV (Measurement, Reporting and Verification) on REDD+ under JCM, GEC consigned the development of MRV methodology to Waseda University as a target for the “REDD+ project by suppressing slash and burn cultivation in Laos / Luang Prabang Province” conducted from FY2015 through FY2017. The study in 2018 was aimed at i) study and preparation of methodology and ii) study and preparation of PDD (draft). Part of the implementation was assisted to the Lao National Research Center for Agricultural and Forestry (NAFRI) from Waseda University.

Evaluation and Verification of Technologies for Reducing CO₂ Emission (Commissioned by MOEJ)

In order to assess the effect of the overseas projects that were implemented for reducing CO₂ emission, and also to prioritize the focus areas for future projects, GEC conducted a survey, commissioned by the Ministry of the Environment, in cooperation with Institute for Global Environmental Strategies (IGES) and other entities. In this survey, the following reviews were conducted to evaluate how the JCM scheme contributes to the introduction of advanced low carbon technologies.

(1) Verification of CO₂ reduction effect after the project implementation:

For JCM Model Projects supported by the Financing Programme that have issued JCM credits, the amounts of CO₂ reduction estimated in the PDDs (project design documents) were compared with the actual amount of credits issued to evaluate and verify the reduction effect.

(2) Evaluation and verification of superiority of low carbon technologies used under the JCM scheme:

GEC gathered information on business-as-usual (BAU) situation for low carbon technologies in 10 countries mainly in Asia and analyzed the superiority levels required for low carbon technologies to be introduced under the JCM scheme.

(3) Case studies for evaluation and verification of JCM scheme effectiveness:

Case studies were conducted to evaluate and verify whether the JCM scheme has positive effect on the introduction of advanced low carbon technologies to achieve CO₂ emission reduction. In the case studies, GEC conducted comparative analysis on biomass power generation technology and refrigerator technology in Thailand, and refrigerator technology in Vietnam.

Support for Collaboration with the Asian Development Bank

Since FY2014, the Ministry of the Environment, Japan (MOEJ) has contributed funds to the Asian Development Bank (ADB) and established the Japan Fund for JCM (JF-JCM) to support JCM low carbon technology projects.

Commissioned by the MOEJ, GEC evaluated certain low carbon technologies that may be eligible for the JF-JCM project, and also supported the MOEJ in its review of the project that applied for the JF-JCM.

Renovation and Demonstration of Advanced Low-Carbon Technologies to Adapt to Developing Countries' Needs

Financing Programme to Demonstrate Advanced Low-Carbon Technology Innovation for Further Deployment in Developing Countries

On behalf of the MOEJ, GEC has been implementing a financing programme to demonstrate advanced low-carbon technology innovation for further deployment in developing countries since 2015.

The MOEJ has been promoting this 5-year financing programme since FY2014, with the aim of contributing to global environmental conservation by promoting the renovation and demonstration of advanced low-carbon technologies in line with the local specific circumstances of each developing country such as environmental regulations, culture and customs, resource restrictions and climate. Financial support is provided to cover part of the expenses (on an annual basis, for up to three fiscal years) for development and demonstration projects which contribute to reducing the CO₂ emissions derived from energy consumption.

Examples of low-carbon technologies

Social Infrastructure

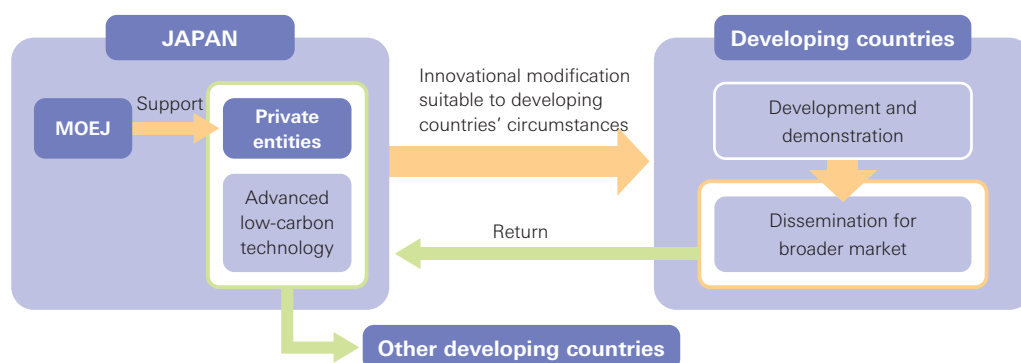
- Low-carbon public transportation system
- Optimized OM system of water facilities
- Waste management technology
- District cooling system

Energy saving devices

- High-efficiency motor with inverter control
- High-efficiency air conditioners and chillers
- High-efficiency air compressor system

Renewable energy & distributed energy

- Electric power generation, heat generation, and/or cogeneration with the use of renewable resources
- Self-reliant or distributed low-carbon energy system
- Heat pump system



GEC's Activities in FY2018

- Calls for proposals: GEC did not call for new project proposals as the final year of this 5-year financing programme.
- Continued support for the projects selected in the previous years: GEC continued to provide support for 12 projects carried forward from FY2016 and FY2017.
- Difficulties arose in the continuation of two projects starting from FY2017 due to financial reasons of representative project participant. MOEJ and GEC decided to accept the replacement of the representatives and provide the support to the successors.
- Progress management: GEC oversaw the progress of all the projects in FY2018 through monthly reports, meetings, and site inspections, and provided suggestions for improvement when needed.
- Evaluation: All the projects were evaluated by the independent committee based on an interim progress report by each project participant. Since FY2018 was the last fiscal year for this financing programme, the committee also conducted the final review to evaluate the performance of each project completed in FY2018.
- Through five-year financing programme 31 projects in total were completed by the end of FY2018. One project will be continued in FY2019 due to the delay in the project implementation caused by the replacement of the representative participants. Once a project is completed, the recipient of the financial support is required to measure and report the CO₂ emission reductions of the project to the MOEJ for three years.

Continued projects from FY2016–FY2017 (12 projects)

No.	Country	Project Participants	Title
16-2	Indonesia	Kyudenko Corporation	Development of an energy management system (EMS) supplying renewable energy steadily
17-1	Indonesia	Daiki Axis Co., Ltd.	Commercial Development of High Efficiency Biodiesel Fuel Production Process Utilizing Various Low-Quality Fat and Oil
17-2	Thailand	HANSHIN ENGINEERING CO., LTD.	Development of Energy-saving Submerged Mechanical Aerator/Agitator for Wastewater Treatment System in ASEAN
17-3	Philippines	KOMAIHALTEC Inc.	Development and Demonstration Project of absorbing surplus energy from wind turbine generators with typhoon resistant system by mobile power pack in small scale islands of the Philippines.
17-5	Vietnam	ICHIKAWA KANKYO ENGINEERING CO.,LTD.	Intermediate treatment system renovation for RPF production in Vietnam
17-6	Thailand	Techno System Co., Ltd	Technology development for manufacturing of torrefied pellet from old rubber wood without using fossil fuel
17-7	Sri Lanka, Maldives	CollaboTech, Inc.	Installation and demonstration test project for battery-combined roof-top solar power generation system in South Asia
17-9	Vietnam	MILAI Corporation	Innovative experiment of high efficiency waste-to-energy and low-carbon transport technologies creating zero-emissions infrastructure in Vietnam
17-10	Malaysia etc.	Vioce Co., Ltd.	Development of the high drainage processing technology by methane-gas power generation system using feces and urine, and membrane treatment at pig farms in Southeast Asian countries
17-11	Saudi Arabia	KANEKA CORPORATION	The verification test of CO ₂ emissions control technology by the high performance solar power generation system adopted to desert conditions.
17-12	Tanzania	WASSHA Inc.	Development and demonstration of an environmental value visualization platform for the expansion of CO ₂ reduction through the charging service using solar energy generation
17-13	Indonesia	GIKO Corporation	Development of continuous compaction and carbonization process for low density waste and exhaust heat utilization system



No.17-2
Energy-saving Submerged Mechanical Aerator/Agitator



No.17-3
300kW Wind turbine generators with typhoon resistant system



No.17-3
Electric motorcycle with mobile power pack and charging stations



No.17-7
Energy Storage System_5kWh



No.17-9
EV Truck Recharged with Renewable Energy



No.17-10



No.17-11
High performance solar power generation system adopted to desert conditions.



No.17-12
Scenery of a market using LED lantern charged with solar energy



No.17-13
Continuous compaction and carbonization system for low density waste

Japan International Cooperation Agency (JICA) Group Training Project

Country Report

Report prepared by a participant on the environmental administration system and the environmental issues of the country concerned. The reporting session held at the beginning of the training course is intended to minimise the perception gap between the participants and the instructors concerned.

Action Plan

Plan prepared by a participant at the end of the training course on how to improve the environment of his/her country, building on the insight gained in the training period. The final presentation session is intended to improve the feasibility of the Action Plan through advice provided by the audience (mainly lecturers).



Job report presentation

Commissioned by JICA, GEC has carried out two training courses that are designed for engineering or administrative government officials in developing countries. These courses were entitled 'Improvement of Solid Waste Management Technologies (Basic, Techniques)', and 'Control of Air Pollution from Motor Vehicles'.

At the beginning of each course, the participants from each country presented their own 'job report'* in order to share the challenges that their country faces. They worked on developing 'action plans'* through participating in the course and shared amongst themselves how the knowledge and expertise gained during the programme could be applied to their country's policy-making.

Training courses which are popular in developing countries will continue to be provided, based on coordination with the relevant organisations, in order to meet the diverse range of individual needs. We will also remain vigilant regarding any emerging demand for training in new areas of interest and will bolster the cooperation with research institutions and other relevant organisations.



Visit to a waste paper recycling plant

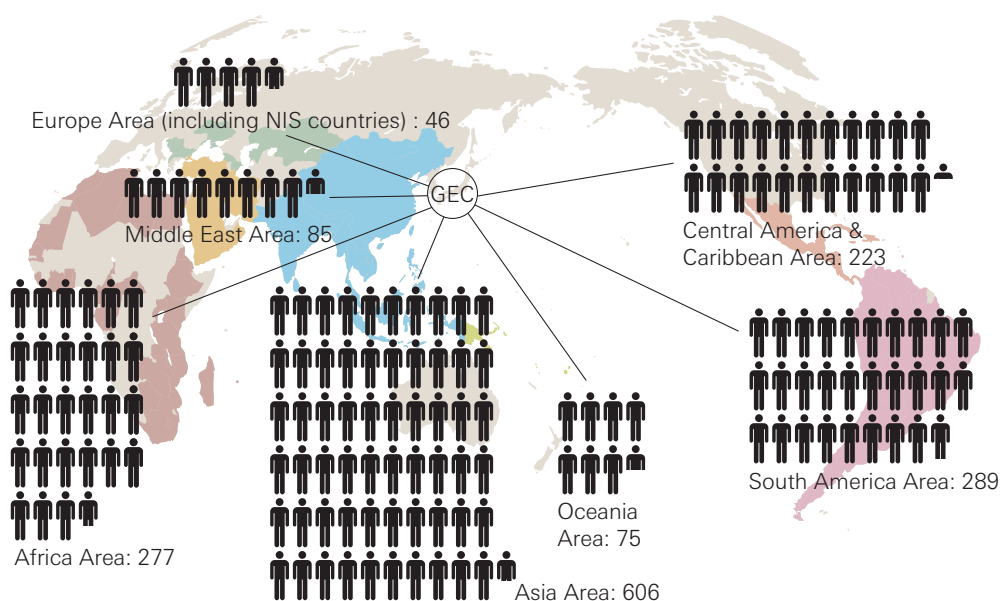
Training Dates/Participants	Programme
Improvement of Solid Waste Management Technologies (Basic, Techniques)	
2018	<u>Objective</u>
17 May – 10 July	To develop leaders and core people who will play a major role in the planning and execution of waste management projects in their own countries.
6 participants:	<u>Collaborators</u>
Botswana (1)	UNEP-IETC, Osaka City Environment Bureau, Fukuoka City, Kobe City, Kyoto City, Fukuoka University, Osaka City University, Osaka City University Hospital, Kitakyushu
Liberia (1)	Eco-Town Center, Nantan City Yagi Bioecology Center, Senri Recycle Plaza, EX Research
Myanmar (1)	Institute Ltd., Kokusai Kogyo Co. Ltd., Takakura Environment Research Institute, Daiei
South Sudan (1)	Kankyo, Daiwa Itagami Co. Ltd., Kansai Recycling Systems Co., Ltd., Kawase Co., Ltd.,
Timor-Leste (1)	Nomura Kohsan Co. Ltd., Sunny Metal Corporation, Kyoei Mesona Inc., Campo Recycle
Zimbabwe (1)	Plaza, Hitachi Zosen Corporation, etc.
	<u>Lectures</u>
	Introduction to Waste Treatment; Introduction to Intermediate Treatment Facilities; Introduction to Sanitary Landfill Technology; Introduction to Hazardous Waste Treatment Technology, etc.
	<u>Site Visits</u>
	Waste Collection and Transportation Work, Waste Incineration Plant, Home Appliance Recycling Facility, bio-gas Facility, Citizen Cooperation for Segregation, Sanitary Landfill Disposal Site, etc.

Training Dates/Participants	Programme
Control of Air Pollution from Motor Vehicles	
2018 22 August – 28 September	<u>Objective</u> To develop a concrete action plan for automobile pollution countermeasures in each participating country. <u>Collaborators</u> Osaka City University, Osaka City Environment Bureau, Kyoto City, Kinki District Transport Bureau, Kinki Regional Development Bureau, Plaintiff's Group in Amagasaki Air Pollution Suit, Osaka Environmental Technology and Research Co. Ltd., Horiba Ltd., Chuo Fukken Consultants Co. Ltd., Osaka Toyopet Corporation, Japan Meteorological Corporation, Suuri-Keikaku Co., Ltd, Comotec Corporation, Hino Motors Ltd., Omron Corporation, etc. <u>Lectures</u> Countermeasures Against Automobile Air Pollution; Physico-chemical Characteristics of Particulate Matter (PM2.5), Transportation Demand Management, etc. <u>Site Visits and Workshops</u> Atmospheric Continuous Monitoring Station, Automobile Inspection Centre, Countermeasures against Air Pollution at Route 43, Simplified Passive Sampling Measurement, Analysis of Meteorological Data and Forecast, Atmospheric Dispersion Simulation, etc.
8 participants: Algeria (1) Bosnia-Herzegovina (1) Brazil (1) China (1) Iran (1) Iraq (1) Sri Lanka (1) Thailand (1)	

GEC Networking Project for Former Training Course Participants

Since FY1998, 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 participant) website (renamed "JICA-GEC Network" in FY2005) and organising local follow-up seminars.

Since last year, GEC has been working on transitioning to a system with a new network platform leveraging the increasingly popular SNS services. We launched the new system on a pilot basis, registering 22 new members (14 participants in FY2018 and 13 participants in FY2017). We now have 1,601 members in total, including the existing registered members.



Establishment of Global Environment Centre Foundation (GEC)

Establishment of UN Environment International Environmental Technology Centre (IETC)

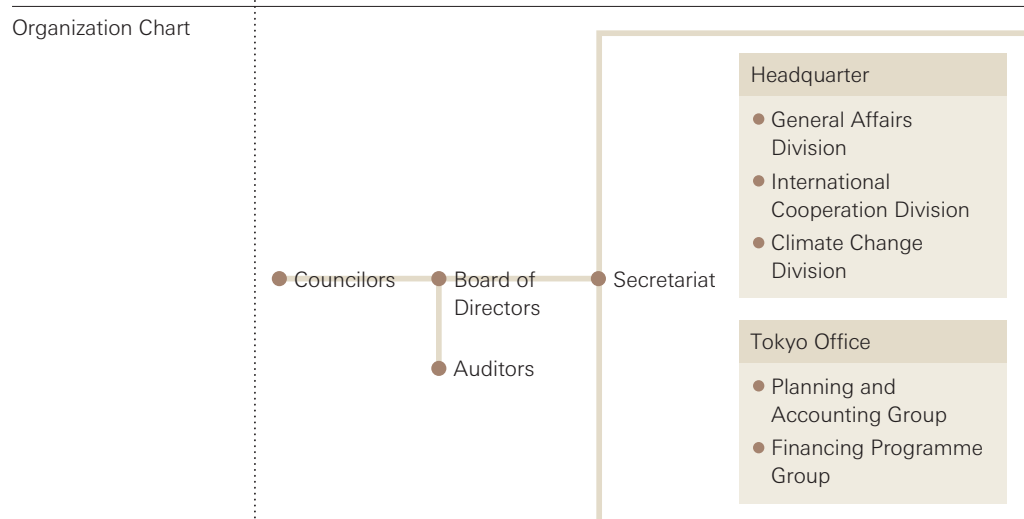
August 1989	In the lead-up to the International Garden and Greenery Exposition, the Municipality of Osaka announced the invitation of international organisations active in the field of global environmental conservation, in line with the spirit of the exposition and in order to share the experience of Osaka in environmental conservation.
April 1990	The International Garden and Greenery Exposition was held under the theme of 'Symbiosis between Nature and Humans.'
July 1990	At the Houston Summit, held in the US, Prime Minister Kaifu announced an initiative to establish a presence of the UN Environment Programme (UNEP) in Japan.
August 1990	At the second special session of the UNEP Governing Council, Naohiro Kumagai, Japanese Ambassador to Kenya, proposed the establishment of the International Environmental Technology Centre (IETC).
May 1991	In its 16th session, the UNEP Governing Council unanimously adopted the establishment of IETC, to promote the application, implementation and adaptation of environmentally sound technologies in the developing world.
October 1992	Mostafa K. Tolba, Executive Director of UNEP, and Koji Kakizawa, Parliamentary Vice-Minister for Foreign Affairs, signed an agreement to set up IETC in Osaka.
April 1994	IETC officially started operation.

Establishment of GEC

July 1991	The Municipality of Osaka established a Preparatory Office for Establishment of UNEP International Environmental Technology Centre (IETC) Osaka.
January 1992	Global Environment Centre Foundation (GEC) was launched as a juridical body in support of UNEP, with basic funds provided by the Prefecture and Municipality of Osaka.
October 2009	An application was submitted to change GEC to a public interest incorporated foundation following the promulgation of the Three Acts for Public Interest Foundation Reform.
March 2010	GEC was certified by the Prime Minister as a public interest incorporated foundation.
April 2010	GEC was re-established as a public interest incorporated foundation.
April 2014	GEC opened its Tokyo Office.

Outline

Name	Global Environment Centre Foundation (GEC)
Date of Establishment	28 January 1992
Office Location	[Headquarter] 2-110 Ryokuchi-koen, Tsurumi-ku, Osaka 538-0036 Japan Telephone: +81-6-6915-4121 Facsimile: +81-6-6915-0181 [Tokyo Office] Hongo Ozeki Bldg., 3-19-4, Hongo Bunkyo-ku, Tokyo 113-0033, Japan Telephone: +81-3-6801-8860 Facsimile: +81-3-6801-8861
Endowments	1,754,160,000 yen
Activities	(1) Projects in support of IETC stated aims of technical transfers and spreading information on environmentally sound technologies (ESTs) to promote environmental conservation in major urban areas of developing nations. (2) Collection, dissemination, surveying & research of information on environmental conservation in developing nations & the world as well as global warming countermeasures to promote technical cooperation and foster human resources in developing nations. (3) Other projects required to achieve GEC's stated aims.
Number of Staff	54



(as of 1 July 2019)



Overview of the Global Environment Centre Foundation

Board Members of the GEC

Councilors	AONO, Chikahiro	Director General, Environment Bureau, Osaka City Government
	FUJITSUKA, Tetsuro	Managing Director, Sustainable Society Promotion Consultant Association
	KATAOKA, Shigehiro	Attorney
	MIZUNO, Minoru	Professor Emeritus, Osaka University
	MORIOKA, Tohru	Professor Emeritus, Osaka University Professor Emeritus, Kansai University
	NAKAMURA, Daisuke	Senior Executive Director - Environmental Management, Department of Environment, Agriculture, Forestry and Fisheries, Osaka Prefectural Government
	NISHINO, Yasuko	Director General, Kansai Centre of the Japan International Cooperation Agency
	SUZUKI, Yutaka	Director, Institute for Global Environmental Strategies, Kansai Research Centre
	TANIGUCHI, Yasuhiko TSUDA, Megumu	Head Director, Environmental Management and Technology Centre General Manager, CSR and Environment Department, Osaka Gas Co., Ltd.
President	SUZUKI, Naoshi	
Executive Director	KITATSUJI, Takuya	
Executive Director, Tokyo Office	KIMURA, Yuji	
Directors	FUKUOKA, Masako	Associate Professor, Department of Environmental Engineering, Osaka Institute of Technology
	MAKIYAMA, Ako	Executive Director Director, Industry Division, Osaka Chamber of Commerce and Industry
	MATSUKURA, Katsuhiro	General Manager, Economic Research Department, Kansai Economic Federation
	NISHIMURA, Nobuya	Professor, Graduate School of Engineering, Osaka City University
	OTSUKI, Yoshinobu	Former General Manager, Environmental Management Office, Department of Environment, Agriculture, Forestry and Fisheries, Osaka Prefectural Government
Auditors	TAKI, Hideo	Director, Osaka Gas Foundation of International Cultural Exchange
	MIYAMOTO, Hiroshi	Former Manager of Community Welfare and Services Division, Chuo Ward Public Health and Welfare Center, Osaka City Government

(as of 1 July 2019, honorific omitted; name in alphabetical order <Surname>)

Overview of the UNEP IETC

Name	United Nations Environment Programme (UNEP) International Environmental Technology Centre (IETC)
Agreement	The agreement between Japanese Government and UNEP was signed on 30 October 1992.
Mandate	Transfer of environmentally sound technologies to developing countries and countries with economy in transition with a focus on waste management.
Contacts	Office: 2-110 Ryokuchi-koen, Tsurumi-ku, Osaka 538-0036 Japan Telephone: +81-6-6915-4581 Facsimile: +81-6-6915-0304 Email: ietc@un.org IETC homepage: https://www.unenvironment.org/ietc/

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