Global Environment Centre Foundation

Annual Report 2014

All years listed in this Annual Report are expressed according to the Japanese fiscal year from 1 April to 31 March.
Terms marked with an asterisk (*) are defined in the margin.

Foreword

The international community is preparing a new legal framework for global warming countermeasures, in which all countries will participate. It is expected to be agreed at the 21st Conference of the Parties (COP21) of the United Nations Framework Convention on Climate Change (UNFCCC) to be held in Paris from November 2015. The major agenda of COP21 is to develop an international mechanism to reduce greenhouse gas (GHG) emissions through a concerted effort between developed and developing countries after 2020.

The Government of Japan has announced the country's goal in view of this framework, which is to achieve a 26% reduction of GHG emissions by 2030 in comparison to 2013. This proposal was submitted to the UNFCCC secretariat in July.

I succeeded Dr. Hideo Miyahara as the president of the Global Environment Centre Foundation (GEC), and I recognise the significance of the responsibility assumed.

GEC mainly engages in various projects of the Joint Crediting Mechanism (JCM), which the Japanese Government proposes toward global warming countermeasures. I am of the opinion that we should further enhance our endeavours in this area. The JCM is designed to help developing countries attain sustainable, low-carbon societies by introducing excellent technologies to mitigate global warming. GEC supports corporations pursuing global warming countermeasures overseas by operating and managing the financing and commission programmes endorsed by the Ministry of the Environment of Japan (MOEJ). The projects that come under these programmes and that we seek to have registered as JCM projects include financing programmes for JCM projects in developing countries, collaborative projects with organisations, such as the Japan International Cooperation Agency (JICA), project planning studies (PS) for discovering and formulating project materials, feasibility studies (FS), REDD+ verification studies for pursuing GHG emission reduction through forest protection, and low-carbon technology innovation studies for modifying Japanese low-carbon technologies to be adopted in developing countries. Through cooperation with Japanese municipal governments and enterprises in Osaka, Kyoto and elsewhere, GEC will further promote Japanese low-carbon technologies in other countries as we conduct FS on developing low-carbon cities.

For efficient operations, we opened our Tokyo office in April 2014 and developed our operational structure to enhance effectiveness, including the staffing reinforcement.

GEC also engages in projects besides JCM-related endeavours such as 'Support project to the United Nations Environment Programme (UNEP) International Environmental Technology Centre (IETC)', 'Human resource enhancement project in developing countries', and 'Support project to the companies in the Kansai region for overseas business expansion' commissioned respectively by Osaka City Government, JICA, and the Kansai Bureau of Economy, Trade and Industry. Through these activities, GEC aims to contribute to developing countries and earn the trust of local communities.

GEC will continue its efforts in international environmental cooperation with developing countries, striving to be indispensable in the Kansai region. Furthermore, we will broaden our perspectives beyond Kansai to Japan and worldwide in our global warming countermeasures.

Your continued understanding and support of GEC activities are much appreciated.

August 2015

SUZUKI, Naoshi
President
Global Environment Centre Foundation

Support for the activities of UNEP International Environmental Technology Centre to promote their environmentally appropriate technologies

GEC was commissioned by the Osaka City Government to conduct the FY 2014 United Nations Environment Programme (UNEP) IETC Cooperation Project, and it conducted the following: 1) planning and implementation of international workshops in Osaka City, 2) support for planning/operation of cooperation projects between the Osaka City Government and UNEP IETC and 3) information dissemination on behalf of the UNEP IETC.

Planning and implementation of the international workshop in Osaka City

- **Support for organising the International Workshop on 'Technologies for Holistic Waste Management'**

GEC organised 'the International Workshop on Technologies for Holistic Waste Management', in Osaka between 17 and 19 March 2015. It was jointly hosted by UNEP IETC, UNITAR-CIFAL Jeju International Training Centre (JITC) and GEC with Osaka City's cooperation. This workshop aimed to promulgate environmentally appropriate technologies for holistic waste management in the Asia-Pacific region. The participants included 63 people, including those who represented national or regional governments in Asia (19 participants from 11 countries and 14 cities), as well as administrative officials from Japan and representatives of international organisations, private companies and universities. Participants exchanged information concerning the introduction and promotion of technologies for holistic waste management in developing countries. Furthermore, they participated in lectures and practical sessions as well as a tour of waste management facilities. As a co-host, GEC engaged in planning and organising the workshop.

Workshop Overview

Title	International Workshop on 'Technologies for Holistic Waste Management'
IDates	17–19 March 2015
Venue	Hotel New Otani Osaka
Hosts	UNEP IETC, UNITAR-CIFAL JITC and GEC
Support	Osaka City Government
Participants	63 participants, including representatives of administrative bodies (national and regional governments), international organisations, private companies and universities
Languages	English and Japanese


Workshop participants


Workshop venue


Group session led by IETC


Tour at the Kansai Recycling Systems Co. Ltd.

On Day 1, the Director General of the Osaka City Government's Environmental Bureau, the Director of UNITAR CIFAL Jeju/JITC and of UNEP IETC delivered opening addresses. Keynote lectures were delivered on the subject of national policies regarding holistic waste management and expertise developed in the Kansai district, presented by IETC, MOEJ and Kansai University. In the afternoon session, the Osaka City Government gave a presentation entitled 'Developing a Low-Carbon City through City-to-City Cooperation'. Representing all participating cities, the participants from Bangkok (Thailand), Kota (India), Vientiane (Lao People's Democratic Republic) and Penang (Malaysia) presented case studies from their own countries. The session was fruitful, prompting many questions and lively discussions.

IETC led the second day of the workshop, during which participants were introduced to diverse technologies in the fields of power generation based on agricultural waste biomass and e-waste processing. A lecture described the Sustainability Assessment of Technologies (SAT) developed by IETC. The subsequent group session was enthused with active discussions and opinion exchange. Finally, all participants joined in the analytical evaluation of optimal technology. Holistic waste management requires a cross-sectional strategy. With the SAT methodology, people from different specialisations can participate in organising and analysing selection criteria based on an understanding of socio-economic and environmental perspectives to enable the selection of sustainable technology. The participants understood the

efficacy of the SAT methodology through this group session.

On the final day, Day 3, facility tours were organised in conjunction with the Kansai Recycling Systems Co., Ltd. and Higashiyodo Incineration Plant of Osaka City Environment Bureau. The party visited a waste management facility with the latest technology. At the Kansai Recycling Systems, the participants attended a lecture on recycling electric household appliances and materials in Japan, followed by a visit to the factory, where they learned regarding the work involved in recycling household appliances. At the Higashiyodo Incineration Plant, they watched a video presentation on incineration and power generation facilities. Then, they visited a series of facilities for the incineration, power generation, exhaust gas treatment and ventilation.

The participants valued this three-day programme, commenting on the informative content, including introductions to a wide range of technologies, as well as the interactive approach to the organisation of the workshop. The workshop proved to be successful in covering the broad topic of holistic waste management, despite its brevity. We expect that this workshop has served as an opportunity to promote the excellent environmental technologies of Osaka, the Kansai district and Japan to the Asia-Pacific region through UNEP IETC's projects on holistic waste management.

Support for the planning and operation of the cooperation projects between the Osaka City Government and UNEP IETC

• Support for the Introductory Training Session on Holistic Waste Management

UNEP IETC, Asian Institute of Technology, UNITAL-CIFAL Jeju/JITC and the Osaka City Government co-hosted the introductory training session on holistic waste management in Bangkok, Thailand from 28 to 30 October 2014, with the support of GEC. Approximately 60 people from 13 countries (India, Republic of Indonesia, Republic of Kazakhstan, Kingdom of Cambodia, Kyrgyz Republic, Democratic Socialist Republic of Sri Lanka, Republic of Tajikistan, Federal Democratic Republic of Nepal, Kingdom of Bhutan, Socialist Republic of Viet Nam, Malaysia, Republic of the Union of Myanmar and Mongolia) participated in the training session. They represented governmental bodies, international organisations, NGOs and academic institutions. IETC launched a consortium of universities to develop an academic curriculum on holistic waste management, aimed at resolving urban environmental issues. They subsequently developed training modules, working together with the Asian Institute of Technology (Thailand), Tongji University (China), University of New South Wales (Australia) and Kyoto University. This curriculum was introduced as a pilot case in the training session, in which four training modules were conducted over the three-day programme. Various lectures on waste management were delivered, and the international participants from many countries and cities provided valuable feedback. Based on the findings of the training session, IETC plans to develop a master programme on holistic waste management to be implemented by the consortium in 2016. GEC will continue to support this project.

Training Session Overview

28 October	• Opening and keynote lecture • Module 1: Waste Overview, Characterisation and Material Flow Management • Group work and presentations • Module 2: Resource Efficiency and Circular Economy
29 October	• Group work and presentations • Module 3: Waste Treatment and Disposal Technology • Group work and presentations
30 October	• Module 4: Waste Management Policy, Governance and Financing • Group work and presentations • Training session roundup • Conclusion

Workshop participants

Group discussion

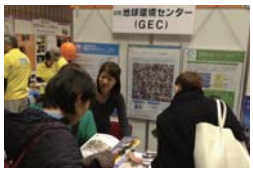
Information dissemination on UNEP IETC's activities

• Preparing Japanese translation of UNEP IETC monthly reports and other materials

GEC translated IETC's monthly reports into Japanese (11 issues covering the period from April 2014 to February 2015) and IETC Strategy 2015–18, both written in English, and delivered to IETC after having been proofread by the Osaka City Government. IETC and the Osaka City Government will discuss how to disseminate these materials and designate certain websites for their publication.

• Participation in environment-related events in Osaka

GEC provided a booth to promote IETC at One World Festival, held in Osaka City on 7 and 8 February 2015. This was the largest public event on international cooperation in western Japan. This FY2014 event attracted some 26,000 visitors. Many people visited GEC booth, including ordinary citizens as well as people associated with universities, secondary schools and other educational institutions, personnel from international organisations and operators of environmental conservation projects. They expressed considerable interest in IETC and its activities. GEC will continue its efforts in promoting IETC to a wider audience through this event and in finding similar opportunities for public relations activities.



Public Relations activity at One World Festival

Support Project for Formulating a Platform to Create and Accumulate New Industries

GEC has undertaken the role of secretariat for the Kansai-Asia Environmental and Energy Saving Business Promotion Forum (Team E-Kansai) jointly with the Kansai Bureau of Economy, Trade and Industry since May 2013. We have helped Team E-Kansai member firms to promote system-based projects that leveraged their proprietary technologies for environmental preservation and energy conservation to offer solutions to meet the local needs of various Asian communities.

Based on the past initiatives of Team E-Kansai, GEC won a commission from the Ministry of Economy, Trade and Industry (METIJ) for the FY 2014. This was an open call project, 'Support Project for Formulating a Platform to Create and Accumulate New Industries'. For this endeavour, GEC pursued the creation and foundational reinforcement of an internationally competitive business cluster working in the environmental and energy conservation.

• Activities in priority areas

For this project, we drew on past enterprise forums by Team E-Kansai and other organisations and developed frameworks for cooperation with local governments and industries in China (Guangdong and Liaoning provinces), Vietnam and Thailand among other countries. By strengthening the bilateral public–private partnership, GEC also pursued business matching, follow-ups and other support for individual businesses.

Activities in the FY 2014

Japan	• Cooperated with the JETRO Osaka and Osaka Prefecture in 'the Business Negotiation Sessions for Environmental and Energy Enterprises' (22 July 2014) • Organised 'the Seminar for Environmental and Energy-saving Business Launches in Asia' (30 July 2014) • Held the Networking Café in China (31 July 2014) • Held the Networking Café for opinion exchange with JICA participants (15 October 2014) • Held individual consultations with coordinators for Thailand and Vietnam (9 March 2015)


The Environmental and Energy-Saving Business Promotion Seminar in Asia (in Osaka City)

China	• Cooperated with the Consulate General of Japan in Guangzhou and the JETRO Guangzhou in PR activities at 'the 4th International (Guangdong) Energy Conservation Expo' (18–20 September 2014) • Held local seminars and conducted field surveys in Shanghai, Guangdong and Liaoning provinces (14–21 October 2014) - Co-hosted 'the Energy-saving Technology Forum' in Shanghai with the Osaka City Government and Shanghai Municipal People's Government - Held the Shanghai Networking Café - Round-table discussion with the Foshan Environmental Protection Bureau of the Nanhai District - Held the Shenyang Networking Café and visited the Department of Environmental Protection of Liaoning Province • Received the delegation party from the Hunchun International Cooperation Demonstration Zone, Jilin District (4–5 November 2014) • Supported the Shunde district business seminar in the Guangdong province (27 November 2014) • Participated in the 8th Japan–China Energy Conservation and Environment Forum A project pursued by four Team E-Kansai member enterprises was selected as the projects for signing cooperation agreement between Japan and China. Three companies participated in the signing ceremony.
Viet Nam	• Concluded the MOU with three Vietnamese state owned enterprises Aiming to smoothly operate pioneering projects in Vietnam and promote business collaborations for member enterprises, Team E-Kansai concluded MOUs with three Vietnamese state-owned enterprises and organisations, including Vietnam Beer Alcohol Beverage Association (VBA). • Conducted field survey in Vietnam (22–27 September 2014) Visited the Ho Chi Minh City Department of Natural Resources and the Environment, natural rubber manufacturers, VBA, Vietnam Paper Corporation (VINAPACO) and Vietnam National Textile and Garment Group (VINATEX).In addition, we conducted follow-ups on the proposals made by Team E-Kansai's Vietnam System Solution Team and interviews to survey local needs. • Co-hosted a booth at the Vietwater 2014 event jointly with the Shiga Prefectural Government and the Osaka Chamber of Commerce and Industry (12–14 November 2014) (1) Displayed corporate presentations, presentation at 'the Technical Seminar' and PR activities at the booth (2) Held Ho Chi Minh City Networking Café (12 November) GEC organised a socialising event inviting participating firms from Vietwater as well as corporations and organisations rolling out business in Vietnam
Thailand	• The coordinators helped with networking for Japanese environment-related businesses that operated locally, and dialogues with prospective local counterparts. They also provided follow-up support to Japanese companies that considered roll-outs in Thailand (throughout the year).
Indonesia	• Field survey in Indonesia (31 August to 6 September 2014) GEC conducted a field survey in Indonesia, which was recently added to the priority areas, on the feasibility of solution-oriented businesses in the domain of environmental and energy conservation. We visited the Ministry of Industry and Trade, the Department of Public Works and other administrative offices, as well as industrial bodies such as the Indonesian Palm Oil Association and chambers of commerce, to gather a diversity of information on specific environmental challenges and business collaboration prospects. • Organised the Environmental and Energy-Saving Business Promotion Seminar in Indonesia (8 December 2014) Three participating specialists delivered reports on the field survey in Indonesia which was conducted in September. • Local follow-up in Indonesia (25–28 February 2015) GEC provided local operators with the information on technologies that were relevant to the local needs which we had learned through the field survey

Energy-Saving Technology Forum (Shanghai City)

VIETWATER 2014 (Ho Chi Minh City)

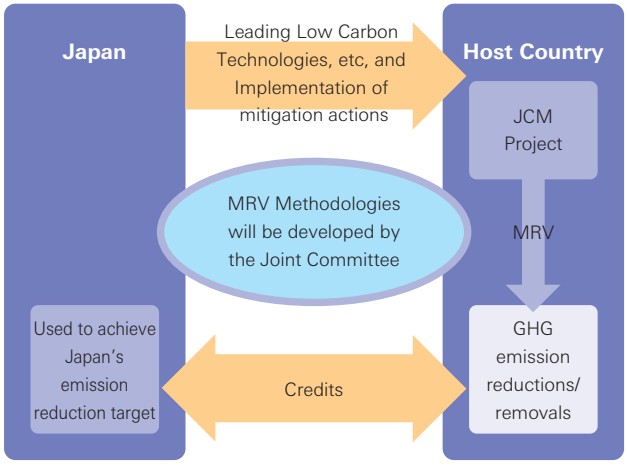
Study Programme for the Joint Crediting Mechanism (JCM) Project

GEC was commissioned by the Ministry of the Environment, Japan (MOEJ) to conduct a Feasibility Study Programme for the Joint Credit Mechanism (JCM) Project.

In this, GEC served as the secretariat to manage the progress of various studies in the JCM, to be conducted in developing countries by private entities. These studies include Project Planning Studies (JCM PS); Feasibility Studies (JCM FS); and REDD+ Verification Studies (REDD+).

Basic concepts of the Joint Crediting Mechanism (JCM)

- Facilitating the diffusion of leading low carbon technologies, products, systems, services and infrastructures as well as the implementation of mitigation actions, and contributing to the sustainable development of developing countries.
- Appropriately evaluating Japan's contributions to greenhouse gas emission reductions or removals in a quantitative manner, by applying measurements, reports and verification (MRV) methodologies, and using these to achieve Japan's emission reduction target.
- Contributing to the ultimate objective of the UNFCCC by facilitating global actions for greenhouse gas emission reductions or removals, complementing the CDM.



Source: "Recent Development of The Joint Crediting Mechanism (JCM)" (published by in January 2015 the Government of Japan)

JCM is a mechanism based on bilateral agreements between Japan and developing countries to address the local needs in these countries. Such needs should be met by implementing GHG emission reduction projects that leverage advanced technologies, products and services. The amount of emissions reduced is converted into credit points, which will then account for Japan's contribution to anti-climate-change efforts. Japan signed a bilateral document for the implementation of the JCM with 12 countries (as of March 2015). Initially, an agreement was made with Mongolia in January 2013, followed by Bangladesh, Ethiopia, Kenya, the Maldives, Vietnam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia and Mexico. Furthermore, Thailand, Saudi Arabia and the Republic of Chile are due to sign by the end of the fiscal year 2015. The results of the survey for the fiscal year 2014 are as follows:

• Adoption of Studies

Calls for JCM PS, JCM FS and REDD+ were publicly announced to Japanese private business entities and an advisory panels of experts (JCM Project Support Committee) were set up to evaluate the submitted proposals. As a result, 27 study projects were adopted (7 JCM PS including 2 candidates JCM PS in Asia for FY2014, 17 JCM FS and 3 REDD+) by the Ministry of Environment, Japan.

JCM PS (Project Planning Study)

Host Country	Business Entity	Title	Sector
Bangladesh	Toyota Tsusho Corporation	Saving Energy through the installation of High efficiency Air Jet Loom in weaving field	Energy Efficiency Improvement
Cambodia	METAWATER Co., Ltd. MATSUO SEKKEI	Energy Saving by Efficiency Improvement of Water Treatment Plants of Phnom Penh Water Supply Authority	Energy Efficiency Improvement
Indonesia	Fuji Electric Co., Ltd.	Installation of Combined Heat and Power System in Hotel	Energy Efficiency Improvement
Maldives	Pacific Consultants Co., Ltd. T.T.Network Infrastructure Japan	Installation of Solar PV and Storage Battery with Energy Management System (EMS)	Renewable Energy

Mongolia	SAISAN Co., Ltd. myclimate Japan	10MW-scale Solar Power Generation for Stable Power Supply	Renewable Energy
Vietnam	Hitachi Zosen Corporation, and K.K.Satisfactory international	Introduction of Energy-from-Waste Project in Ho Chi Minh City	Waste Management / Biomass Utilisation
Vietnam	Nippon Koei Co., Ltd.	Saving Energy by introducing optimum pumps in water purification plant	Energy Efficiency Improvement

JCM FS (Feasibility Studies)

Host Country	Business Entity	Title	Sector
Bangladesh	PEAR Carbon Offset Initiative, Ltd. Kurose Chemical Equipment Co, Ltd.	Waste Heat Recovery and Utilization in Textile and Garment Factories	Energy Efficiency Improvement
Costa Rica	Nissan Motor Co., Ltd.	Promotion of Electric Vehicle for Taxi Usage	Transport
Ethiopia	Mizuho Information & Research Institute, Inc	20MW-scale Geothermal Power Generation	Renewable Energy
Indonesia	Japan NUS	3.7MW Run-of-river Hydro Power Generation in Sulawesi	Renewable Energy
Indonesia	Nomura Research Institute, Ltd. AIKAWA Iron Works Co., Ltd	Introduction of High Efficient Old Corrugated Cartons Process at Paper Factory	Energy Efficiency Improvement
Indonesia	Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.	Waste Heat Recovery and Electricity Generation in Flat Glass Production Plant	Energy Efficiency Improvement
Kenya	LIXIL Corporation	Energy Saving by Micro Flush Toilet	Energy Efficiency Improvement
Lao PDR	Taiheiyo Engineering Corporation	Biomass Utilization in Cement Kiln	Waste Management / Biomass Utilisation
Mongolia	Kanden Plant Co., Inc.	Efficiency Improvement of Combined Heat and Power Plant by Thermal Insulation	Energy Efficiency Improvement
Myanmar	JFE Engineering Corporation	Introduction of Waste to Energy Plant in Yangon City	Waste Management / Biomass Utilisation
Myanmar	Nikken Sekkei Civil Engineering Ltd. The Japan Research Institute, Ltd.	Environment Improvement through Utilization of Biogas from POME Fermentation System	Waste Management / Biomass Utilisation
Palau	Inter Action Corporation	Solar Power Generation System	Renewable Energy
Sri Lanka	Obayashi Corporation Ex Research Institute Ltd	10MW-scale Biomass based Power Generation	Waste Management / Biomass Utilisation
Vietnam	Kyushu Electric Power Company Voith Fuji Hydro K.K.	40MW-scale Hydro Power Generation in Lao Cai Province	Renewable Energy
Vietnam	Kubota Corporation, Nikken Sekkei Civil Engineering LTD, The Japan Research Institute, Ltd.	Recovery and Utilization of Biogas from Mixed-treatment of Waste and Septage	Waste Management / Biomass Utilisation
Vietnam	Japan NUS	Introduction of Co-generation System Using Bagasse in Sugar Factory	Waste Management / Biomass Utilisation
Vietnam	Nippon Koei Co., Ltd. Ebara Corporation	Energy Saving for Irrigation Facility by Introducing High-efficiency Pumps	Energy Efficiency Improvement

REDD+ (REDD+ Verification Study)

Host Country	Business Entity	Title
Indonesia	Mitsubishi Research Institute, Inc.	Improvement of REDD+ Implementation Using IC Technology
Cambodia	Conservation International Japan, Asia Air Survey co., Ltd.	REDD+ in Prey Long Area and Seima Area
Lao PDR	Mitsubishi UFJ Research and Consulting	REDD+ in Luang Prabang Province

Energy Saving at Paper Factory (Indonesia)

Small Scale Solar Power Generation (Palau)

Energy Recycle of Biogas in the Process of Food Waste Treatment (Vietnam)

REDD+ in the Prey Long Area (Cambodia)

• Progress Management of the Adopted Studies

GEC managed all the adopted studies for their progress through the field survey reports and monthly reports submitted by respective business operators as well as by conducting in-person meetings. GEC also accompanied the operators to their field surveys regarding 5 PS projects and provided assistance in identifying current circumstances and challenges in terms of business prospects. In addition, GEC pursued the interim and final assessments leveraging various JCM Project Support Committees. Based on the results of these assessments, GEC

requested the project operators to modify the study content or make directional adjustments. Concerning Vietnam, Mongolia and Indonesia, we invited government officials and private business operators in each country to review meetings, which served as an opportunity for them to better understand each study project in terms of their results, and the current status and future challenges for the JCM projects to be established as business operations.

• Support for Monitoring, Reporting and Verification (MRV)

As to support for practicing monitoring, reporting and verification (MRV), GEC pursued three main types of tasks in relation to the financing programme for JCM projects for the fiscal years 2013 and 2014, namely development of the MRV methodologies and preparation of the Project Design Document (PDD); support for monitoring and information gathering/dissemination; and JCM project validation. 6 methodologies were additionally approved in the fiscal year 2014, of which 3 were registered as JCM projects.

Financial Support to Projects for Carbon Dioxide Emission Reductions (Financing Programme for JCM Model Projects)

GEC will conduct financing programmes for three years from FY2014 to FY2016 by utilising 'the financial support to projects for carbon dioxide emission reductions (Financing Programme for JCM Model Projects)' implemented by the Ministry of the Environment, Japan.

The tasks entailed are to subsidise the projects operating within the JCM framework for a necessary facility installation to confirm the completion of work and settle the relevant expenses.

In the first year (FY2014), we called for project proposals for the financing programme from private enterprises, conducted the selection, administrated the work for subsidy issuance and managed the progress of each project. The open call was held twice and 15 projects were selected as suitable for the subsidy through deliberation with the Ministry of Environment, Japan.

• Results for the FY2014

- GEC announced the public offering for the Financing Programme for JCM Model Projects on its website.
- Assessment for adoption: document-based assessment and interviews, followed by deliberations with the MOEJ. A total of 15 projects were adopted for the programme (including provisional decisions for subsidy issuance).
- Management of grant applications for accepted projects: verification of applications submitted by the approved (provisional) project operators, finalising grant authorisation.
- The approved projects for the fiscal year 2014 are as follows:

No.	Host Country	Representative Sector of the Implementation Organisations	Title
1	Indonesia	JFE Engineering Corporation	Power Generation by Waste-heat Recovery in Cement Industry
2	Indonesia	Itochu Corporation	Solar Power Hybrid System Installation to Existing Base Transceiver Stations in Off-grid Area
3	Indonesia	Toyotsu Machinary Corporation	Energy Saving through Introduction of Regenerative Burners to the Aluminum Holding Furnace of the Automotive Components Manufacturer
4	Indonesia	Ebara Refrigeration Equipment & Systems	Energy Saving for Textile Factory Facility Cooling by High Efficiency Centrifugal Chiller

5	Vietnam	Hitachi Zosen Corporation	Anaerobic Digestion of organic waste for Biogas utilization at Market
6	Vietnam	Nippon Express Co., LTD.	Eco-driving by Utilizing Digital Tachograph System
7	Maldives	Pacific Consultants Co., Ltd.	School Building Rooftop Solar Power Plant Project
8	Bangladesh	Ebara Refrigeration Equipment & Systems	Energy saving for air conditioning & facility cooling by high-efficiency centrifugal chiller (Suburbs of Dhaka)
9	Indonesia	KANEMATSU CORPORATON	Introduction of high efficient Old Corrugated Cartons Process at Paper Factory
10	Indonesia	Toray Industries, Inc.	Reducing GHG emission at textile factories by upgrading to air-saving loom
11	Kenya	Ingerosec Corporation	Solar Diesel Abatement Project
12	Palau	Pacific Consultants Co., Ltd.	Small-Scale Solar Power Plants for Commercial Facilities Project II
13	Palau	Pacific Consultants Co., Ltd.	Solar PV System for Schools Project
14	Vietnam	Yuko Keiso Co., Ltd.	Introduction of Amorphous high efficiency transformers in power distribution systems
15	Malaysia	NTT DATA INSTITUTE OF MANAGEMENT CONSULTING	PV power generation system for the office building

• Verification of Implementation Report and Issuance of Subsidies

Regarding Project No. 4, which had been completed, we conducted a local audit to verify the completion of work, received and assessed the implementation report, finalised the amount to be granted and issued the subsidies.

Energy Saving for Textile Factory Facility Cooling by a High Efficiency Centrifugal Chiller (Indonesia)

• Financing Programme in FY 2013

GEC processed the financing programme projects brought over from the fiscal year 2013, which did not complete the work within the said fiscal year. For these projects, GEC verified the progress and interim local audit, finalised the work completed and settled the expenses.

The following are the forwarded projects:

No.	Host Country	Representative Sector of the Implementation Organisations	Title
1	Mongolia	Suuri-Keikaku	Upgrading and Installation of Centralized Control system of High-Efficiency HOB
2	Indonesia	Lawson, INC	Energy Savings at Convenience Stores
3	Indonesia	Mayekawa MFG Co., Ltd.	Energy Efficient Refrigerants to Cold Chain Industry
4	Indonesia	Toyota Tsusho Corporation	Energy Saving by Installation of Double Bundle-type Heat Pump
5	Indonesia	Ebara Refrigeration Equipment & Systems	Energy Saving for Air-conditioning and Process Cooling at Textile Factory
6	Vietnam	Renova, Inc.	Integrated Energy Efficiency Improvement at Beer Factory
7	Vietnam	Mayekawa MFG Co., Ltd.	Energy Efficient NH3 Heat Pumps to Marine Products Processing Industry
8	Cambodia	Promaterials	Small-scale Biomass Power Generation by Using Stirling Engines
9	Bangladesh	Tepia Corporation Japan Co., Ltd.	Brick Production Based on Non-Firing Solidification Technology
10	Palau	Pacific Consultants Co., Ltd.	Small-Scale Solar Power Plant for Commercial Facilities in Island States

• Finalisation of local work completion audit

GEC conducted the on-site finalisation audit for completed work as follows: No. 10 on 11

December 2014, No. 1 on 15 January 2015, No. 3 on 18 January, No. 2 on 22 January, 19–20 February and 11 March, and No. 5 on 10 March.

• Projects withdrawn

The projects No. 6, 7, 8 and 9 were withdrawn owing to changes in investment environments, etc.

Dissemination of Information on the climate change countermeasures

GEC disseminated information to a wider audience on JCM projects for their content and results on countermeasures against climate change and on arguments at relevant international conferences. For this purpose, we organised side events at international conferences and symposia in Japan. GEC also published information on GEC website.

• Hosting the Global Warming Countermeasures Symposium 2015: For the Promotion of Commercialisation of Joint Crediting Mechanism Projects

On 17 February 2015, GEC hosted the Global Warming Countermeasures Symposium 2015: For the Promotion of Commercialisation of JCM Projects. The MOEJ introduced some initiatives for the development of the JCM and relevant processes (e.g., development of methodology), and GEC delivered a report on efforts to promote the commercialisation of JCM feasibility studies based on experience from projects during the 2014 fiscal year. Furthermore, each investigation organisation introduced their achievements in the investigations concerning 1 JCM PS, 2 JCM FS and 1 REDD+ in FY2014, and a discussion was held on the efforts and tasks needed for the commercialisation of JCM projects, and the development of the MRV methodology.

Promotion of the Efforts for Implementation (GEC Report)

Q & A Session

• Information dissemination at the 40th UNFCCC Climate Change Talks (SB40)

The UNFCCC held the 40th Climate Change Talks (SB40) in Bonn, Germany, between 4 and 15 June 2014. At the event, GEC organised an official side event entitled 'Promotion of JCM, NAMAs and other initiatives supporting mitigation actions in developing countries' in collaboration with the MOEJ and the Overseas Environmental Cooperation Center, Japan (OECC)'. The MOEJ explained the policies and activities involved in climate change mitigation actions. The presentation was given by the Indonesian Government, reporting on progress in the JCM in the country. GEC provided a detailed report on the Financing Programme for JCM Model Projects and other projects such as the JCM FS. OECC presented reports on their NAMA initiatives, the NAMA guidebook and the New Mechanisms Platform.

GEC also distributed the JCM guidebook at the official GEC/OECC joint booth.

• Information dissemination at the 20th Session of the UNFCCC Conference of the Parties to the United Nations Framework Convention on Climate Change (COP20)

GEC participated in the UNFCCC COP20 held between 1 and 12 December 2014 in Lima, Peru. GEC organised an official side event as well as other side events for the Japan Pavilion. GEC also ran an official booth, through which it introduced JCM FS to the audience.

NAMA: 'The Nationally Appropriate Mitigation Actions by Developing Countries'
It refers to self-motivated GHG emission reduction activities performed by developing countries and is an important concept for promoting emission mitigations in developing countries. The Cancun agreement (COP16) includes a provision that developing countries will practice NANA and that developed countries will support the activities of the developing countries.

(1) Information Dissemination at the Official Side Event

GEC, jointly with the MOEJ and OECC, held an official side event on 8 December. It was entitled 'Actions for low-carbon development in developing countries through the Joint Crediting Mechanism', and representatives from six member countries presented their respective JCM initiatives and future directions. The MOEJ, OECC and GEC presented the Japanese efforts in the JCM activities. The programme (in English) and the video clips showing the side event are published on the website of the International Institute for Sustainable Development.


Side Event


Presentation from GEC

(2) Information Dissemination at the Japan Pavilion Side Event

GEC hosted additional side events on the JCM at the COP20, which was held at the Japan Pavilion operated by the Government of Japan.

(i) Side Event 1: Development of the GHG Emissions Reduction Projects in Cities that use the Joint Crediting Mechanism (JCM) (cases of Ho Chi Minh City in Vietnam and Vientiane Capital City in Lao PDR)

This side event was held on 2 December, and the Hitachi Zosen Corporation, who pursued a financing programme for JCM Model Projects and JCM PS, delivered a presentation on their JCM projects in relation to waste management in Ho Chi Minh City, Vietnam. One case was the Financing Programme for JCM Model Projects, entitled 'Anaerobic Digestion of Organic Waste for Biogas Utilization at Market' and another was the JCM PS 'Integrated Waste Power Generation in Ho Chi Minh City', both approved by the MOEJ. They also presented the company's own initiatives and technologies regarding waste management plants.


Side Event

(ii) Side Event 2: Development of JCM Model Projects and Methodologies

Another side event, held on 9 December, was about the Financing Programme for JCM Model Projects and JCM FSs. Indonesia had its JCM project registered in October 2014 for the first time since the start of the JCM promotion scheme in 2013. Marking this occasion, personnel from the Nippon Koei Co. Ltd., a participating operator of this project, gave a presentation at the side event, describing their experiences in developing the JCM methodology, preparing the Project Design Document (PDD) and validation, leading to successful registration.


Introduction of JCM Registered Projects

(iii) Information dissemination at the official booth

The official booth was set up in the COP20 official venue. GEC offered information on Japanese JCM initiatives, particularly the JCM FSs and Financing Programme for JCM Model Projects pursued by GEC.


Attending Visitors at the Booth

Feasibility Studies for a Large JCM Project

In response to the FSs for a large JCM Project for the realisation of Low-Carbon Society in Asia for the FY 2014 commissioned by MOEJ, GEC was engaged in developing the large JCM projects, one for Ho Chi Minh City in Vietnam and another for Vientiane Capital in Lao PDR.

Feasibility Studies on supporting the Development of a Low-Carbon City through Cooperation between Ho Chi Minh City and Osaka City

Ho Chi Minh City is the largest city in Vietnam in terms of its population and economy. The environmental impact on the city is becoming increasingly serious owing to rapid urbanisation and economic growth. The city is said to be one of the most susceptible to climate change. To further develop the cooperation between Osaka City and Ho Chi Minh City in the areas of waste, water and sewer services as well as city railways to support the development of a low-carbon city and expand these areas further to cover energy-saving and transport services, we embarked on this project in the 2013 FY with the following two objectives:

(i) to export Osaka's excellent environmental technology and administration as a comprehensive system and discover and develop large JCM projects in the region, individually and as a package and

(ii) to establish a structure to operate, maintain and manage projects; for example, launching a cooperative organisation for the two cities to support the large-scale application of JCM projects from the perspective of the organisation and a system for creating a low-carbon city master plan, etcetera.

The mayors of these cities signed the Memorandum of Understanding on Developing Low-Carbon City between Ho Chi Minh City and Osaka City, which stated that JCM was to be utilised in efforts to realise the low-carbon city.

Based on this MOU, the Climate Change Action Plan for Ho Chi Minh City 2016–2020 (CCAP 2016–2020) was prepared in the 2014 FY. GEC provided support in the preparation of this action plan as well as in the implementation of the JCM FSs for two prospective projects to be applied to Ho Chi Minh City. Through these and other operations, we worked to strengthen inter-city cooperation, further promote public-private partnerships, and discover and develop new JCM-project cases.

(1) Support for the preparation of 'Ho Chi Minh City Climate Change Action Plan'

There is a current CCAP, covering the period of 2013–2015. This plan must be renewed for the next five-year period, 2016–2020. To assist the preparation of the revised action plan, we reviewed the impact of climate change, considering the current situations of Ho Chi Minh City and global and domestic trends in relation to climate change as well as the regional characteristics of the city.

For the preparation of the GHG inventory, we conveyed to Ho Chi Minh City the experiences of Osaka in preparing reports on GHG emissions and trend analyses by sector, which were indicated in the Osaka City Global Warming Mitigation Action Plan prepared by the municipal government. We also shared information on necessary systems and measures to be developed. GEC collaborated with the National Institute for Environmental Studies (NIES), Japan, which promoted the climate change simulation model to be used in developing countries (together with capacity-building initiatives for this purpose). Together, we provided technical support (two members of the relevant administrative sector of Ho Chi Minh Municipal People's Government came to Japan by invitation for training opportunities), with the use of simulation results by the Asia-Pacific Integrated Model (AIM) in mind.


The first working session (in Ho Chi Minh City)

With the Ho Chi Minh City Climate Change Bureau

(HCCB) as a main counterpart, we organised and operated five working sessions involving the municipality's relevant sections. Through these efforts, we developed a list of countermeasures against climate change, including JCM model projects, over the following 10 categories:

(i) land use
(ii) energy
(iii) road and transport
(iv) waste management
(v) water resource management
(vi) agriculture
(vii) health
(viii) industries
(ix) construction
(x) tourism

(2) Conducting JCM FSs

GEC conducted the following two JCM FSs, which were included in the CCAP as specific projects. For these JCM FSs, we aimed to register this project for the Financing Programme for JCM Model Projects and considered the system of their implementation and financial planning. We also developed the JCM Methodology and prepared the PDD, which were required for the registration application.

- Installing energy-saving technology in buildings (study conducted by Shimizu Corporation)
- Park-and-ride leveraging retail facilities and promoting bus use by offering eco-points (study conducted by Nikken Sekkei Research Institute)

(3) Promoting cooperation between local government and the public–private partnership

GEC pursued specific tasks related to the JCM projects under the cooperation between Ho Chi Minh City and the Osaka City Governments. While helping with the development of the CCAP, we elucidated the needs that should stir the sustainable development of a low-carbon city and promoted the transfer of Osaka's knowledge, skills, technologies, and systems regarding urban management and development. For discovering cases for JCM projects, GEC also hosted an opportunity for exchanging information with local private business operators in Ho Chi Minh City who were interested in the projects. On 10 July, with the help of the Japan External Trade Organization (JETRO) Ho Chi Minh office, we held a presentation session on commercialising JCM projects for Vietnam-based businesses. Furthermore, this project's subordinate body, the Team OSAKA consortium, worked to encourage more supporters from private corporations and further promoted public–private partnership to support the implementation of the projects. On 6 November, with the help of the Kansai Economic Federation, we held a presentation session on JCM project development in Ho Chi Minh City.

The presentation session on commercialising JCM projects for Vietnam-based businesses (in Ho Chi Minh City)

The presentation session on the JCM project development in Ho Chi Minh City (in Osaka City)

(4) Organising symposia etc.

(i) International workshop

We introduced the urban energy-from-waste project (pursued by Hitachi Zosen

Corporation), which the Team OSAKA consortium operated as a pilot case. We organised a workshop in Ho Chi Minh City on 18 August 2014 to share information of the project's FS progress. This workshop was attended by Mr. Kitagawa, the Senior Vice-Minister of Environment, Japan, and the vice chairman of the Ho Chi Minh City People's Committee. We held discussions with members of the relevant Ho Chi Minh municipal offices to better understand the progress of this project and its relationship with the JCM projects.

Senior Vice Minister of Environment of Japan, Mr. Kitagawa, addressing at the international workshop

(ii) International symposium

In relation to the countermeasures against climate change in Ho Chi Minh City, GEC held an 'International Symposium for the Development of Low-Carbon City for Ho Chi Minh City and Osaka City' on 16 January 2015. In this symposium, the progress of the CCAP preparations and JCM project implementations were reported in connection with the promotion of smooth transfer of the knowledge, skills, technologies and systems of urban management and development, which private companies in Osaka and other parts of Japan possessed.


International symposium


Seminar on creating low-carbon cities in Asia (in Yokohama City)

The Vice Mayor of Osaka City, Mr. Tanaka, and approximately 30 individuals from the Japanese side attended the symposium. Attendees from Vietnam included the Vice Minister of Natural Resources and the Environment (MONRE), Mr. Ha, Vice Chairman of the Ho Chi Minh City People's Committee, Mr. Cang, Director of the Department of Natural Resources and Environment (DONRE), Mr. Kiet, and approximately 70 representatives of relevant offices (the Ministry of Industry and Trade, the Ministry of Planning and Investment, the Ministry of Transport, the Ministry of Construction, the Ministry of Science and Technology, etc.) as well as the local press. The discussions concerned expertise and knowledge in urban management from Osaka and the method of utilising them in creating the low-carbon city that Ho Chi Minh City aims to attain. We also introduced some JCM Model Projects and their FSs that were ready for implementation as well as the JCM FSs that was under development to be commercialised in the near future. Having reviewed the content of steady progress made towards executing the projects, the two municipalities reconfirmed their continued bilateral cooperation in the development of CCAP 2016–2020 to be finalised by the end of 2015.

(iii) Side events at COP20*

With the cooperation of MOEJ and the MONRE, GEC held a side event at UNFCCC COP20 held in Lima, Peru, for the Japan Pavilion on 2 December (Day 2). We presented this FS and the content of the JCM projects on the subject of developing a low-carbon society in Ho Chi Minh City.

Side event at COP20
See p.11 for descriptions

JCM Feasibility Study of GHG Mitigation Project Contributing to Low-Carbon Historic City based on City-to-City Cooperation between Vientiane and Kyoto

Vientiane is the capital city of Lao PDR and is the largest city in terms of the population (approximately 800,000 people). While it holds a number of cultural and historic heritages, the city is undergoing rapid urbanisation, stimulated by population migration from surrounding areas, international tourism and rapid economic growth. Owing to delays in infrastructure and urban planning development, the city is experiencing an urban sprawl, with emerging problems including traffic congestion, air pollution, waste generation and GHG emissions in tandem with a growing population. Given these challenges that face Vientiane, Kyoto City has been in discussion with Vientiane Capital in view of the inter-city partnership based mainly on the citizen-level exchange. In April 2014, the Mayor of Kyoto City visited Vientiane, when the Mayor of Vientiane requested the visiting party for assistance in learning about Kyoto City's approaches to the environment, waste management, and tourism. As a result, the parties agreed to pursue this FS as a city-to-city cooperation project, drawing on Kyoto's experiences in practising unique and innovative environmental preservation and sustainable development as the world's historic and environmental city.

This study integrates the creation of a low-carbon city based on JCM with the conservation of cultural and historic heritage as well as the construction of its management and maintenance structure by providing Vientiane Capital with Kyoto City's experiences to create regulations, planning and environmental technologies in a comprehensive package. Such experiences have been accumulated through Kyoto's development as a historical and environmental city. It also aims to expand this project throughout the world as a model of sustainable development, highly visible in Asia through the 'League of Historical Cities'.

Through this study, we grasped current local conditions and strengthened the bond between Vientiane Capital and Kyoto City over many sessions of progress reviews and inter-municipal meetings. Furthermore, both municipalities signed the joint chair summary at the 2nd International Committee, with the vice governor of Vientiane Capital, Mr. Keophilavanh, present, reiterating the joint effort in developing a future low-carbon historic city.

Visiting the Vice governor of Vientiane Capital (Vientiane Capital Governor's Office)

Signing of the joint chair summary

(1) Development of the operational and management system for creating a low-carbon historic city in Vientiane Capital

GEC pursued the identification of environmental problems that faced Vientiane Capital and conducted studies to prioritise tasks for developing a low-carbon historic city. Based on the results, we liaised with Vientiane Capital and Kyoto City to discuss the basic components for Vientiane's low-carbon historic city development action plan. Through these activities, GEC engaged in efforts to discover and expand JCM projects to be executed after the FY 2015 to contribute to the creation of this low-carbon historic city.

The 2nd International Committee (in Vientiane Capital)

(2) Feasibility Study of JCM Projects


Test drive of the electric vehicle (in front of the Vientiane Capital Governor's Office)

In Lao PDR, where the majority of power supply relies on the hydraulic power generation, the most effective countermeasures against climate change (reduction of GHG emission) are possibly the reduction and replacement of automobile fuels. In the past, as part of the New Mechanism FS, we conducted a FS on a project to promote the use of bus services. Drawing on previous FSs on the promotion of the use of electrical vehicles conducted in other cities in Lao PDR, we undertook the same feasibility study in Vientiane Capital (executed by Mitsubishi Motors Corporation and Almec Corporation).

Regarding this project, we worked closely with the Embassy of Japan in the Lao PDR and the JICA Laos Office. We investigated the feasibility of introducing Japanese-made electrical vehicles running on the country's clean hydraulic-generated electricity as official-use vehicles for the Lao PDR's national governments and Vientiane Capital. The operational system and funding plans were also examined, considering the financing programme for JCM Model Projects. We also developed the JCM Methodology and prepared the PDD, which were required for registering the project as a JCM project.

(3) Information dissemination and PR activities


Seminar on creating low-carbon cities in Asia (in Yokohama City)

(i) Seminar on developing a low-carbon city in Asia

GEC participated in the seminar on developing low-carbon city in Asia, held on 29 October 2014. The seminar was hosted by MOEJ (co-sponsored by the Institute for Global Environmental Strategies), and GEC gave a presentation on this project as well as provided a poster exhibition with Kyoto City.

Side event at COP20
See p.11 for descriptions

(ii) COP20 side event*

With the cooperation of MOEJ and the Lao PDR MONRE, GEC held a side event at UNFCCC COP20 in Lima, Peru, for the Japan Pavilion on 2 December (Day 2). We presented this FS and the content of the JCM projects on the subject of creating a low-carbon historic city in Vientiane Capital.

A Programme-type Finance Scheme for JCM in Mongolia (Commissioned to the Overseas Environmental Cooperation Center, Japan)


The CHP3 in Ulaanbaatar

GEC developed monitoring plans and discussed how they should be implemented for some JCM projects to be pursued in Ulaanbaatar, Mongolia, and some other regions. These plans were based on the JCM methodologies for these projects, which had been developed by the OECC. The OECC conducted the FSs for these JCM projects, which included (a) the efficiency enhancement of a combined heat and power coal-fired thermal power plant (CHP3), (b) the installation of inverters to coal-mining equipment, (c) the installation of high-efficiency power transformers to Ulaanbaatar's power grid and (d) photovoltaic power generation.

For the development of these monitoring and execution plans, we discussed with the OECC the methodologies from the viewpoint of the coherence between the proposed JCM

methodologies applied to each project and the monitoring and execution of plans. In addition, we visited Mongolia in December 2014 to discuss with the Mongolian counterpart the project execution and inspect the sites for the projects. We then prepared the monitoring plans and proposals for the monitoring execution, which would be required for the quantitative evaluation of the GHG emission reduction for the JCM projects.

The Feasibility Study of Woody Biomass Power Generation in Penang, Malaysia, as part of the NEDO Promotion of Global Warming Countermeasures for the FY 2014

As a continued project of the FY2013, MOEJ-commissioned FSs for the large JCM Project to realise a low-carbon society in Asia, GEC assisted the NEDO's FY2014 Promotion of Global Warming Countermeasures (the FS of Woody Biomass Power Generation in Penang). To improve a system of holistic waste management in Penang and promote the introduction of woody biomass power generation technology, GEC provided support in terms of the systematisation of waste sorting as well as the development of strategies and plans for realising this, as part of this FS. We also helped coordinate the local and Japanese parties. GEC boasts a long-term cooperation with Penang, and with its extensive network with local agencies, we will continue to strive to support a successful validation process.

Osaka CDM Network Project

GEC founded the Osaka CDM Network in February 2004, in cooperation with the OISCA Kansai and the Osaka Urban Industry Promotion Center, for encouraging Kansai-based enterprises to become proactive in the CDM project. As the Network's chief representative, we provide support to Kansai-based enterprises for the expansion of businesses involved in global warming countermeasures.

- **Activities in the FY 2014**
- Holding the General Meeting and Providing Opportunities for Information Exchange
  - We conducted a survey for the Osaka CDM Network members regarding the direction the Network should take. Based on the results, we developed the Network's annual action plan.
  - We also provided some opportunities for members to participate in exchanging information on financing programmes for the JCM projects.
- Osaka Carbon Conference 2014

  Immediately after UNFCCC COP20 in Lima, Peru, we held the Osaka Carbon Conference 2014 at the Osaka Museum of History. We invited leading researchers involved in international negotiations on climate change and delegates from the Government of Japan and presented as the first instance in the Kansai district the latest news on the outcomes from the Lima conference. The event served as an opportunity to gain the latest information on domestically implemented measures and trends in anti-global warming businesses under the influence of the international climate.

Osaka Carbon Conference 2014

Human Resource Development in Developing Countries

The Japan International Cooperation Agency (JICA) Group Training Project

After receiving an entrustment from JICA, four training courses were provided to engineers and government officials of developing countries, following FY 2013. They were 'Improvement of Solid Waste Management Technologies (Basic, Technique)', 'Effluent Pollution Control Caused by Mining and Manufacturing Industries', 'Countermeasures against Automobile Pollution in Urban Areas' and 'Japan–Mexico Training Programme for the Strategic Global Partnership/Total Environmental Contamination Control'.

At the beginning of each training, a 'Country Report'* from participants in these countries was presented and each issue of the participating countries shared. At the end of the training, an 'Action Plan'* was presented to clarify each participant's activity goals back home.

Training courses popular in developing countries will continue to be provided on the basis of coordination with relevant organisations to respond to the changing needs of developing countries. Also, cooperation with research institutions and relevant organisations will be strengthened so that the demand for new types of training in the future can be met.

Country Report
A report prepared by each participant describing the environmental administration system, environmental situation and other related issues in his/her country. These Country Reports are presented at the start of the training course to minimise the gap in issue awareness between participants and instructors.

Action Plan
A plan prepared by each of the participants to improve the environment in their own country based on knowledge acquired during the training. Participants present their Action Plan and receive advice from the audience (mainly from course instructors and advisers) on how to improve its feasibility.

Training period	Nationality of participants	Main course contents
Improvement of Solid Waste Management Technologies (Basic, Technique)		
16 May – 4 July 2014	11 participant from Sudan (2), Tanzania (1), Nigeria (2), the Philippines (2), Brazil (1), South Sudan (1), Myanmar (2)	Purpose To foster talent who will take the initiative to plan waste treatment and operate treatment businesses in their own countries. Cooperating bodies Osaka City Environment Bureau, Fukuoka City, Kitakyushu City, Fukuoka University, Toyo University, Osaka City University, Osaka City University Hospital, Nantan City Yagi Bioecology Center, Miyako Ecology Center, EX Research Institute Ltd., Kokusai Kogyo Co. Ltd., Nomura Kohsan Co. Ltd., JPec Co. Ltd., Kansai Recycling Systems Co. Ltd., Kawase Co., Ltd., Kotoku Group, Sunny Metal Corporation, Daiei Kankyo, Kyoei Mesona Inc., etc. Lectures Introduction to Waste Treatment; Introduction to Intermediate Treatment Facilities; Introduction to Sanitary Landfill Technology; Introduction to Hazardous Waste Treatment Technology, etc. Facility tours and training sessions Waste Collection and Transportation Work, Waste Incineration Plant, Plastic Containers Recycling Facility, Composting Facility, Sanitary Landfill Disposal Plant, etc.
Effluent Pollution Control Caused by Mining and Manufacturing Industries		
1 August – 5 September 2014	22 participants from Argentina (3), Uruguay (3), Ecuador (3), Cuba (3), Paraguay (3), Peru (4), Bolivia (3)	Purpose To draw up effective solutions and policies to mitigate environmental destruction and pollution caused by hazardous substances contained in effluent from the mining and manufacturing industries. Cooperating bodies Kwansei Gakuin University, University of Hyogo, Japan Oil, Gas and Metals National Corporation, National Institute for Minamata Disease, MOEJ, Osaka City Public Works Bureau, Hisayama Town, Kanden Geo-Re Inc., Environmental Management and Technology Center, Osaka Environmental Technology and Research Co. Ltd., Kosaka Smelting and Refining Co. Ltd., Mitsubishi Material Techno Co. Ltd., Toray Industries, Inc., Taiyo Manufacturing Co. Ltd., etc. Lectures Mining pollution and Mine Safety Act in Japan; pollution control for hazardous materials; plant effluent regulations in Osaka City, mining effluent treatment technology at dormant/obsolete mining sites; salvation and compensation system for pollution victims, etc.


Observing Household Waste Collection (Osaka City Environment Bureau)


Matsuo Mine (Hachimantai City)

		Facility tours and training sessions waste water treatment in a metal plating factory, effluent treatment at a mining facility, a contaminated soil purification and regeneration plant, the Minamata Disease Municipal Museum, etc.

Countermeasures against Automobile Pollution in Urban Areas

3 October – 21 November 2014	14 participant from Angola (1), Botswana (1), China (2), Ethiopia (1), Ghana (2), Iran (1), Kosovo (1), Mexico (1), Mongolia (2), Nigeria (1), Tunisia (1)	Purpose To formulate and implement automobile pollution prevention plans etc. in target countries to resolve air pollution problems caused by city-based vehicles from the dual perspectives of environmental countermeasure technologies and urban transport policies. Cooperating bodies Osaka City University, Osaka City Environment Bureau, Osaka Municipal Transportation Bureau, Tokyo Metropolitan Research Institute for Environmental Protection, Kinki District Transport Bureau, Kinki Regional Development Bureau, Osaka Police Headquarters, Amagasaki Association for Pollution Patients and Their Families, the Aozora Foundation, Japan Automobile Federation, Kimoto Electric Co. Ltd., Osaka Toyota Motor Co., Ltd., Mitsubishi Fuso Truck and Bus Corporation, Suuri-Keikaku Co. Ltd., Hanshin Expressway Co. Ltd., Osaka Environmental Technology and Research Co. Ltd., Climate Consulting, LLC, Nittsu Research Institute and Consulting, Inc., DINS Sakai Co., Ltd., etc. Lectures Countermeasures against automobile pollution; physico-chemical characteristics of particulate matter (PM 2.5, etc.); urban noise measurement and analysis; simplified passive sampling analysis; atmospheric dispersion simulation, etc. Facility tours and training sessions Tours of the atmospheric continuous monitoring station, automobile inspection centre, chassis dynamometer, and traffic control centre. Case study of a traffic demand management, etc.

Car Maintenance Shop (Osaka Toyota Motor Co., Ltd.)

Japan–Mexico Training Programme for the Strategic Global Partnership: Total Environmental Contamination Control

9 May – 13 November 2014	1 participant from Mexico	Purpose To improve the general environmental measures ability of the participants, they will attend numerous JICA group research sessions and a wide range of lectures and observations for gaining the knowledge and experience required to fulfil this objective. Cooperating bodies Osaka City University, Osaka City Institute of Public Health and Environmental Sciences, etc. Lectures Overview of waste treatment; mining and plant effluent contamination countermeasures; countermeasures against automobile pollution, etc. Facility tours and training sessions Tours of the Museum of Natural History, urban resource recycling engineering, urban thermal environment, etc.

Measurement of Urban Thermal Environment (Osaka City University)

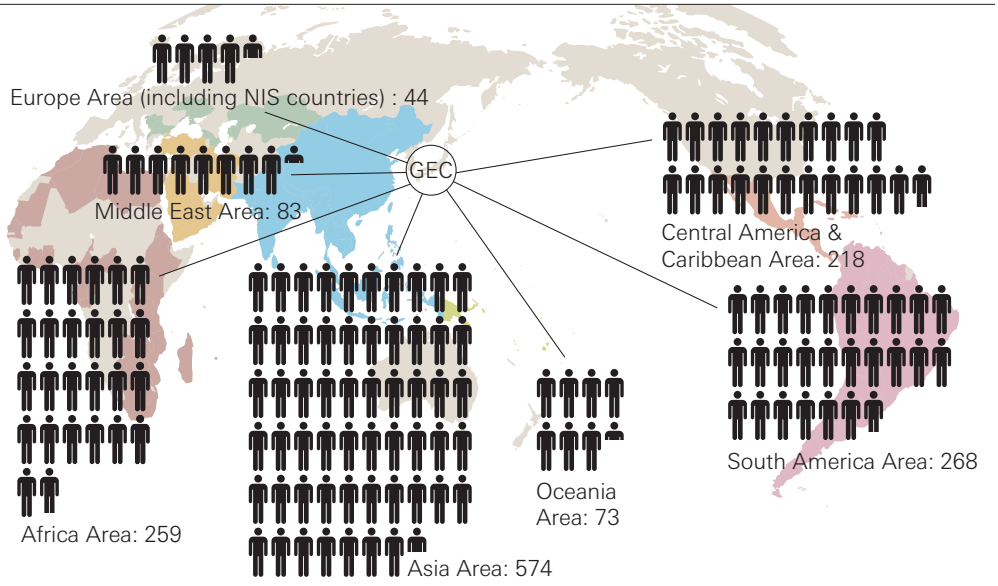
GEC Networking Project for Former Training Course Participants

Since FY 1998, an established network of overseas GEC trainees follow up on JICA training programmes to accurately understand the needs of developing countries. We have strengthened this network by exchanging information through our website and the email newsletter 'Connect the World', delivered to our members (individuals who have completed our training courses), as well as holding local follow-up seminars.

In FY 2014, 48 new training course graduates joined the network, and the total number of members reached 1,519 (in 120 countries).

GEC will continue to contribute to the growth of developing countries by supporting the activities of JICA training course graduates using these networks.

Network Member Distribution Diagram (As of March 2015)



Expanding the GEC Networking Project for Former Training Course Participants

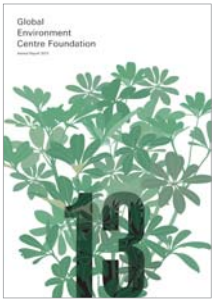
1998	Started conducting One Day Seminars and publishing the official newsletter
May 2001	Commenced the full operation of the GEC Information Board on the Internet
April 2002	JICA trainees participated in four environmental courses (given by Osaka City) and joined the GEC network
May 2003	Training text materials were made available online
April 2004	Country Reports, postings and photo albums were published online
April 2005	The website was renamed 'JICA-GEC Network'
January 2007	The email newsletter 'Connect the World' was launched
March 2009	Questions from training course participants were published online

Publications List

Publication Name	Format	Size / pages / date of publication
Progress of Financing Programme for JCM Model Projects and Feasibility Studies for JCM Projects by MOEJ in 2014	Booklet PDF	A4 / 40 pages / November 2014 (English, Indonesian, Mongolian) ❶
GEC Annual Report 2013	Booklet PDF	A4 / 24 pages / March 2015 ❷

*Publications in PDF format are available on the GEC's website.

❶



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Background of the Establishment

Establishment of the International Environmental Technology Centre

Beginning in the 1960s, Osaka City experienced a series of acute socio-environmental issues on the back of rapid industrialization, such as air, noise and water pollution and land subsidence. The city succeeded in substantially mitigating these problems, however, through the combined efforts of government and industry. Seeking to leverage these experiences for the benefit of others, the Osaka City Government actively cooperated with developing nations to help resolve their environmental problems, such as the formulation of a master plan to address air pollution in Shanghai, China.

In 1990, the International Garden and Greenery Exposition was held in Osaka based on the theme of 'harmonious coexistence between nature and mankind'. In anticipation of this event, Osaka City announced its intention in August of 1989 to invite an international environmental organization to the city as a way of carrying on the spirit of the exposition and taking advantage of Osaka's experience in environmental conservation. The announcement was followed by moves to attract relevant organizations, including an official invitation from Osaka Mayor Masaya Nishio handed to the Executive Director of the United Nations Environment Programme (UNEP) Dr. Mostafa K. Tolba during his visit to Japan.

These efforts culminated in July 1990 with a proposal by Japan's then Prime Minister Toshiki Kaifu at the G7 Summit in Houston to establish a UNEP facility in Japan. In August of the same year, Japan's Ambassador to Kenya Mr. Naohiro Kumagai made a proposal to the 2nd Special Session of the UNEP Governing Council to set up the International Environmental Technology Centre (IETC). In May of the following year, a resolution to establish IETC with the mandate of promoting the adoption, application and operation of Environmentally Sound Technologies (ESTs) in developing countries and countries with economies in transition was unanimously approved at the 16th Session of the UNEP Governing Council. In October 1992, UNEP Executive Director Tolba and Parliamentary Vice-Minister for Foreign Affairs Mr. Koji Kakizawa signed an agreement in Osaka on the founding of IETC in Osaka, which officially commenced operations in April 1994. Since April 2011, IETC operates in Osaka after its two offices were merged into one office.

Note: official positions listed above were current at the dates listed.

Establishment of the Global Environment Centre Foundation

Following the UNEP Governing Council's official decision to establish IETC in Japan, the Osaka City Government set up the UNEP/IETC Osaka Planning Office on 3 July 1991 to investigate IETC's operations and to facilitate the establishment of a support foundation to be launched at the start of 1992.

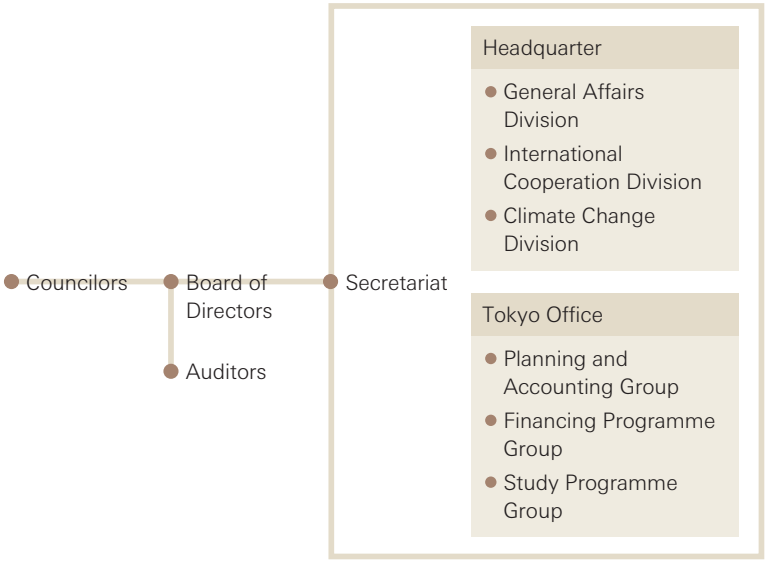
Following initial preparations by the Planning Office, the Global Environment Centre Foundation (GEC) was launched as a UNEP support entity on 28 January 1992 with a capital endowment from the Osaka prefectural and city governments.

In 2008, GEC subsequently filed an application for change of legal entity from an incorporated foundation to a public interest incorporated foundation on 27 October 2009 in response to the 2008 enforcement of the three laws relating to reform of the public interest corporation system. After receiving the approval of the Prime Minister, GEC made a new start as a public interest incorporated foundation on 1 April 2010.

GEC was founded with the aim of contributing to the conservation of the environment in developing nations and around the world by leveraging Japan's wealth of conservation knowledge and experience in support of UNEP's urban environment conservation activities in developing nations, and undertaking activities to promote international cooperation to protect the global environment.

GEC's Activities

In addition to providing various types of support to IETC such as project collaboration, GEC also acts as an intermediary between IETC and its affiliated institutions in Japan to help ensure that its activities proceed smoothly and efficiently. Through activities to protect the global environment including surveys & research, collection & dissemination of information, and hosting of training & seminars, GEC contributes to Japan's international efforts on the environment.

Name	Global Environment Centre Foundation (GEC)
Date of Establishment	28 January 1992
Supervisory Authorities	Cabinet Office, Government of Japan
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 UNEP 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	42
Organization Chart	

(as of 1 July 2015 / GEC's board members is listed on page 24)

Board Members of the Global Environment Centre Foundation

Councilors	KATAOKA, Shigehiro	Attorney
	KAWAKAMI, Yutaka	Corporate Auditor, The Kansai Electric Power Co., Inc.
	KITATSUJI, Takuya	Director General, Environment Bureau, Osaka City Government
	MIZUNO, Minoru	Professor Emeritus, Osaka University
	MORIOKA, Toru	Professor, Faculty of Environmental and Urban Engineering, Kansai University (Professor Emeritus, Osaka University)
	NAITO, Noboru	President, Environmental Management and Technology Center
	ONISHI, Yasunori	Director General, Kansai International Centre of the Japan International Cooperation Agency
	OTA, Susumu	Executive Managing Director, Overseas Environmental Cooperation Center, Japan
	SUZUKI, Yutaka	Director, Institute for Global Environmental Strategies, Kansai Research Centre (Professor Emeritus, Osaka University)
	TAKESHIBA, Seiji	Senior Executive Director - Environmental Management, Department of Environment, Agriculture, Forestry and Fisheries, Osaka Prefectural Government
	WASHIO, Shuji	General Manager, CSR and Environment Department, Osaka Gas Co., Ltd.
President	SUZUKI, Naoshi	Professor, Faculty of Engineering Science, Kansai University
Executive Director	TAKI, Hideo	
Executive Director, Tokyo Office	KIMURA, Yuji	
Directors	FUJIWARA, Yukinori	General Manager, Economic Research Department, Kansai Economic Federation
	HARADA, Tomoyo	Lecturer, Kyoto Seika University
	NAKANO, Ryoichi	Director, Economy and Industry Division, The Osaka Chamber of Commerce and Industry
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Auditors	KAGATSUME, Toshiaki	Technical Adviser, International Lake Environment Committee Foundation
	MIYAMOTO, Hiroshi	Former Manager of Community Welfare and Services Division, Chuo Ward Public Health and Welfare Center, Osaka City Government

(as of 1 July 2015, honorific omitted; name in alphabetical order <Surname>)

Overview of the UNEP DTIE IETC

Name	United Nations Environment Programme (UNEP) Division of Technology, Industry and Economics (DTIE) 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 economic transition with a focus on waste management.
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