

Global Environment Centre Foundation

Supporting organization of UNEP/International
Environmental Technology Centre (IETC)

Annual Report 2011



2011

contents

1	Foreword
	Support for UNEP/IETC's Activities and Other International Cooperation Activities
2	Supporting UNEP/IETC's Activities on Waste Management <ul style="list-style-type: none">– Organising WEEE/E-waste Management Workshop on Take-Back System– Support for Seminar on 'Management of Debris Created by the Tohoku Tsunami' International Experience Sharing– Promoting & Applying the Eco-Town Concept in the Asia-Pacific Region– Participation in the 8th Asia-Pacific Eco-Business Forum– Promoting the Dissemination of Information on ESTs– Surveys on Waste Management
5	International Cooperation in Developing Countries <ul style="list-style-type: none">– Project on Support for Building a Community-Based Recycle-Oriented System in Viet Nam's Ha Long Bay Area– Seminar on Integrated Solid Waste Management in Ho Chi Minh City, Vietnam: Activities to Support the 3Rs
	Surveys Concerning Global Environmental Problems
8	Contribution to Measures for the Mitigation of Climate Change <ul style="list-style-type: none">– New Mechanism Feasibility Studies– CDM/JI Feasibility Studies– Information Dissemination and Educational Activities Concerning Climate Change Measures– Duties as the Secretariat of the Osaka CDM Network
	Training of Environmental Technology
17	Human Resource Development in Developing Countries <ul style="list-style-type: none">– Japan International Cooperation Agency (JICA) Group Training Project– GEC Networking Project for Former Training Course Participants
19	Dissemination of Environmental Management Systems (EMS) <ul style="list-style-type: none">– Operating the 'Internal Environmental Auditor Training Course'
	PR and Educational Activities
20	PR Activities
	Others
21	Publications List
	Overview of the Global Environment Centre Foundation
22	Background of the Establishment
23	GEC's Activities
	References
24	Board Members of the Global Environment Centre Foundation
25	Overview of the UNEP/DTIE/IETC

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 Great East Japan Earthquake and the accident at the Fukushima Daiichi Nuclear Power Plant occurred last year have stimulated national debate about the safety of nuclear power, and we are about to reach a major turning point in terms of the swift resolution of the electricity shortage in Japan and a new medium- to long-term energy policy. In particular, with a view to achieving a new best energy mix, the Energy and Environment Council has been conducting various deliberations concerning the share of output for which nuclear power accounts and the level of measures in relation to renewable energy and energy conservation, and the Innovative Strategy for Energy and the Environment was formulated in September this year. The outlook presented by Japan to the rest of the world in regard to reducing greenhouse gas emissions is also grim. Amid this situation, the initiatives to reduce emissions of greenhouse gases that the Global Environment Centre Foundation (GEC) has conducted to date can be said to be increasingly important.

At the same time, administrative reforms in which nothing is sacred are being carried out in Osaka City as part of Mayor Hashimoto's 'great reset'. With reforms of extra-governmental organisations also part of this endeavour, rigorous reviews are being carried out and GEC is no exception to this. Having been established to demonstrate a commitment to the international community when the UNEP International Environmental Technology Centre (IETC) was first invited to Osaka, GEC leased facilities and provided support for the activities of the IETC on behalf of the Osaka municipal government, but as a result of the revised approach adopted by Osaka City of late, the municipality has embarked on a policy of providing direct support. One can say that GEC truly is facing its greatest test to date. Having said which, it is not the case that all operations are subject to direct support, so given GEC's achievements and experience in supporting IETC to date, we are aiming to further strengthen the collaboration between Osaka City and GEC, establishing a system in which we can implement effective support based on a clear division of roles that makes good use of the unique attributes of both parties. The details will be settled in due course, but in the meantime, GEC must move forward with improvements in its management environment, which is becoming increasingly demanding, and each and every member of staff must think about the situation seriously and demonstrate complete solidarity in their actions.

It is amid such major changes in both Osaka City and Japan as a whole that GEC has reached the milestone of the 20th anniversary of its establishment. Accordingly, it is necessary for us to go back to our starting point at the time of our establishment, and to demonstrate at the most fundamental level how GEC can contribute to global environmental conservation and improving the environment in developing countries, as well as showing what advantages its initiatives can generate for the citizens and companies of the Osaka City area. We would like to demonstrate GEC's contribution to society through such specific projects as reducing emissions in developing countries, providing environmental training for developing countries, and promoting the overseas deployment of the water and environmental technologies of companies in the Osaka area.

There is a mountain of challenges to be tackled. Accordingly, all of us at GEC - staff and executives alike - intend to work together and do our utmost to overcome these difficulties, so we would greatly appreciate your continued support and understanding for GEC's future activities.



October 2012

A handwritten signature in black ink, appearing to read 'H. Miyahara', written in a cursive style.

MIYAHARA, Hideo
President
Global Environment Centre Foundation

Supporting UNEP/IETC's Activities on Waste Management

ESTs

Environmentally Sound Technologies, as defined in Agenda 21, should protect the environment, are less contaminative, use various resources in a more sustainable manner, recycle more of their wastes and products and handle residual waste in a more acceptable manner than the technologies for which they were substitutes.

Regional Workshop on WEEE/E-waste Management on Take-Back System

The workshop's presentation materials are available on IETC's website.

Informal Sector

People involved in collecting and disposing of waste products outside the public service sector.

Organising WEEE/E-waste Management Workshop on Take-Back System

IETC is engaged in the management of WEEE/E-waste as one of the priority fields for its activities on waste management; to date, it has held workshops, compiled manuals, and implemented a pilot project in relation to this topic. At the workshop held in Osaka in July 2010, participants from developing countries expressed considerable interest in the development of policy frameworks for the WEEE/E-waste take-back system and funding mechanisms for sustaining such a system. Accordingly, IETC drafted a manual on the WEEE/E-waste take-back system and held a workshop to discuss this draft manual in Osaka on 13-15 July 2011, in collaboration with GEC.

On 13 and 14 July, training using the draft manual was provided for government officials from seven countries in Asia and Africa, and a dialogue session took place with electronic device manufacturers and researchers who were participating as observers. In the discussion, opinions were exchanged concerning such matters as the fact that there are various options in terms of WEEE/E-waste collection methods and operators, the question of at what point in the product life-cycle the cost of collecting and disposing of it should be imposed and on whom, the question of who should bear responsibility for the collection and disposal of imported second-hand goods, and what approach should be taken to the relationship with the informal sector*, which is heavily involved in the collection and disposal of WEEE/E-waste in developing countries. In relation to WEEE/E-waste management and collection, participants acknowledged that it was difficult to apply a single country's systems and processes to another country without modification, agreeing that it is necessary to consider the advantages and disadvantages of the systems and processes used in various countries, and introduce systems and processes tailored to the society in each individual country.

On 15 July, with additional participation by experts from Japanese home appliance manufacturers, trading companies, universities, research institutes and international organisations, an introduction was provided to a diverse range of initiatives on the collection and recycling of WEEE/E-waste.

In response to the discussions during the workshop, as well as revising the draft manual on WEEE/E-waste take-back system, IETC is considering to implement a take-back system pilot project and to hold a workshop on the participation of and collaboration with the private sector in relation to WEEE/E-waste management.



WEEE/E-waste Management on Take-Back System Workshop



Participants in the workshop

Support for Seminar on 'Management of Debris Created by the Tohoku Tsunami' International Experience Sharing

At the request of the Japanese government, to mark the passing of a year since the Great East Japan Earthquake on 11 March 2011, UNEP dispatched a mission by international experts between 27 February and 1 March 2012, in order to share international experience and knowledge on the management of disaster debris with officials from local governments in the disaster-afflicted areas. The team of international experts visited disaster-afflicted areas in Tohoku where, as well as meeting officials from local governments, they visited facilities for storage and recycling of debris, and shared experience and knowledge with those involved in dealing with the debris.

With the objective of enabling experts with abundant experience in dealing with disaster debris in various parts of the world and those involved in disaster prevention and waste management in Japan to share knowledge and experience concerning the management of disaster debris, IETC took the opportunity of this visit to Japan by international experts on management of disaster debris to hold the Seminar on 'Management of Debris Created by the Tohoku Tsunami' International Experience Sharing in Osaka on 6 March, and GEC provided organisational support for this. Approximately 50 participants from international organisations with offices in Japan, local governments, research institutes and the private sector attended the seminar, at which the international experts dispatched by UNEP presented key findings of their visit to Tohoku and exchanged opinions with the other participants.



Seminar on 'Management of Debris Created by the Tohoku Tsunami'

UNEP is planning to leverage the information shared, such as responses to the Great East Japan Earthquake by Japanese authorities and communities, as well as experiences and lessons from the disaster, in order to enable other countries to improve preparedness and post-disaster management for dealing with waste and debris generated by natural disasters in the future.

Promoting & Applying the Eco-Town* Concept in the Asia-Pacific Region

Since 2004, IETC has been implementing initiatives focused on promoting and applying the eco-town concept in the Asia-Pacific region, with the objective of encouraging sustainable industrial development, as well as promoting the 3Rs and integrated waste management in developing countries where economy is rapidly developing. As part of its support for IETC, GEC has been engaged in activities such as disseminating to developing countries information on recycling technologies and systems in Japanese eco-towns, and since FY2009, it has been implementing the Eco-Town Environmental Technology Database Development Project for Building Resource Recycling-oriented Societies in Developing Countries, which is funded by the Mitsui & Co., Ltd. Environment Fund.



Penang Eco-Town Workshop



Bandung Eco-Town Workshop

In FY2009, recycling technology needs surveys were conducted in Penang, Malaysia and Bandung, Indonesia, the pilot cities of IETC's project, and in FY2010, surveys were carried out among companies and local governments in Japanese eco-towns with recycling technologies that met those needs. In FY2011, based on the results of those surveys, the Eco-town Environmental Technology Database was compiled and published as new content in NETT21, the GEC Environmental Technology Database. As well as information on recycling technologies, the newly-compiled database contained information on recycling promotion initiatives by private companies and local governments, Japanese laws on the promotion of recycling, and support systems of local government to promote recycling.

In addition, taking the opportunity of the database compilation, GEC held eco-town workshops in Penang on 7 December and in Bandung on 9 December 2011, with the objective of facilitating the sharing of information and experiences of governments, the private sector and NGOs, in order to assist in the development and implementation of eco-towns in Malaysia and Indonesia.

Eco-Town

In Japan, the term 'eco-town' refers to regions approved by the Ministry of Economy, Trade & Industry (METI) and the Ministry of the Environment (MOE) where local governments are undertaking projects that leverage the region's attributes to reduce waste and promote recycling, and that utilize local industry clusters to foster green industries. Overseas, however, 'eco-town' is used in a broader context to denote regions seeking to achieve environmentally-friendly socio-economic development.

Eco-town Environmental Technology Database

Please refer to NETT21 on GEC website.

Penang Eco-town Workshop and the Bandung Eco-town Workshop

The workshop's presentation materials are available on GEC & IETC's website.



The Penang Eco-town Workshop was organised by GEC, the Penang State Government, the Penang Island Municipal Council, the Seberang Perai Municipal Council, and the Penang Institute, with IETC as the co-organiser. 140 participants from local governments, the private sector, communities, NGOs and educational institutions attended in the workshop, which featured presentations on the activities and initiatives of various stakeholders, aimed at promoting recycling and developing a resource recycling-oriented society. The Japanese participants introduced initiatives being undertaken by Kawasaki City, JETRO, Panasonic Environmental Systems & Engineering Co., Ltd., Canon Inc., and Mitsui & Co., Ltd., and local participants expressed considerable interest in these.

At the Bandung Eco-town Workshop, which was organised by GEC and the Bandung City Government and attracted 30 participants from local governments, NGOs and educational institutions, information was shared on the progress of initiatives following the Eco-town Workshop held by GEC on 21 September 2010, with a primary focus on local activities to promote recycling and the environmental education.

Participation in the 8th Asia-Pacific Eco-Business Forum

GEC participated in the 8th Asia-Pacific Eco-Business Forum, which was held at the Institute of Industrial Promotion Kawasaki in Kawasaki City on 8 and 9 February 2012. As well as sharing information about overseas examples of eco-town initiatives, this forum included sessions concerning such matters as smart cities, issues relating to the green economy toward Rio+20, the overseas promotion of venous industry, and



8th Asia-Pacific Eco-Business Forum

legislation and technology needs related to water pollution in Asia. In addition to introducing the Eco-town Environmental Technology Database that was compiled and published this year, GEC gave a presentation on examples of collaborative mechanisms involving local governments, the private sector, academia and local residents in Japanese eco-towns, as well as review and suggestion to the dissemination of information on Japanese eco-towns. Five participants from Penang, Malaysia and four from Bandung, Indonesia attended the forum and gave presentations on initiatives by local governments, NGOs and private companies aimed at promoting the development of eco-towns in their respective cities, as well as exchanging information and interacting with other participants.

Promoting the Dissemination of Information on ESTs

With the objective of promoting the application and transfer of environmental technologies in developing countries, GEC developed the Database on 'New Environmental Technology Transfer in the 21st Century' (NETT21) in 1996 and disseminates information via the GEC website. In FY2011, as well as publishing new content in the form of information on waste recycling technologies adopted in eco-towns in Japan, the initiatives of the private sector and local governments for promoting waste recycling in Japan, and laws and support systems for promoting waste recycling in Japan, funded by the Mitsui & Co., Ltd. Environment Fund, GEC also added new information on technologies for resource/energy recovery from sewage sludge, which were developed and evaluated under the Sewerage Technology Development Project Committee attached to Japan's Ministry of Land, Infrastructure, Transport and Tourism. Moreover, the existing content is being progressively updated. Via the GEC website, we receive many enquiries from overseas on Japanese environmental technologies, and we are striving to disseminate information on Japanese environmental technologies by responding to these.

The Number of Data Listings for Each Topic:

- Air Pollution Control Technology in Japan: 133
- Waste Management Technology in Japan: 41
- Water Pollution Control Technology in Japan: 76
- On-Site Green Technique (OGT) in Japan: 83
- Air Pollution Continuous Monitoring Technology in Japan: 83
- Water Pollution Continuous Monitoring Technology in Japan: 53
- Cleaner Production Technology in Japan: 235
- Waste Recycling Technologies and Recycling Promotion Initiatives in Eco-towns in Japan: 38
- Technologies for Resource/Energy Recovery from Sewage Sludge: 7
- Energy-Saving Technology at Business-Related Buildings: 69
- Soil and Groundwater Contamination Survey and Countermeasure Technologies: 37
- Japanese Advanced Environmental Equipment (provided by JSIM): 621

Total: 1,476 data listings as of 1 May 2012



NETT21

Surveys on Waste Management

In order to support the activities of IETC in the field of waste management, GEC has carried out surveys on waste and climate change, and WEEE/E-waste (surveys outsourced to Ursin Co., Ltd.). The survey results were provided to IETC.

[Content of the Survey on Waste and Climate Change]

- Formulation of draft guidelines for the introduction of Waste to Energy (recovery of energy from waste through the incineration of waste or RDF*)
- Overview of semi-aerobic landfill and summary of the effects for reduction of greenhouse gas emissions
- Compiling and summarising examples of greenhouse gas reduction through 2R (reduce and reuse) activities and waste-related CDM projects both within Japan and overseas

[Content of the Survey on WEEE/E-waste]

- Compiling and summarising information on WEEE/E-waste collection and recycling in Japan, etc.

RDF (Refuse Derived Fuel)

Solid fuel created from combustible refuse, such as kitchen refuse and plastic waste

International Cooperation in Developing Countries

Project on Support for Building a Community-Based Recycle-Oriented System in Viet Nam's Ha Long Bay Area

Ha Long Bay is situated in the northwest of the Gulf of Tonkin to the north of Viet Nam. One of the world's most visually stunning locations, it was designated as a UNESCO World Heritage site in 1994 but measures are now required to address the recent increase in pollution.

The 'Project on Support for Building a Community-Based Recycle-Oriented System in Viet Nam's Ha Long Bay Area' is a JICA grass-roots technical cooperation project being implemented by GEC in collaboration with Osaka Prefecture University for 3 years from October 2009 to September 2012. The project's activities aim to reduce the load of emissions into Ha Long Bay from floating communities and tour boats, and are carried out with the cooperation of local counterparts Ha Long Bay Management Department, the Women's Union and the Youth Union.



Ha Long Bay Location



A floating community in Ha Long Bay

FY2011 Activities

Main Activities	Content
Mangrove planting	<p>Mangrove planting was carried out in August 2011 with participation by local residents, among others, in order to promote exchange between members of the younger generation from Japan and Vietnam, as well as to increase awareness on environmental protection at Ha Long Bay. A total of 76 people took part - 16 participants from Japan, including a GEC staff member, and lecturers and students from Osaka Prefecture University and Sakai High School, and 60 from Vietnam, including members of the Youth Union, local university students, and elementary school students from floating communities and their parents - and planted 5,000 mangrove seedlings on islands in Ha Long Bay. The planting activities were carried out using environmental donations provided to GEC under the home appliance and housing eco-points systems.</p>
	 <p>Planting mangroves</p>
Waste Reduction	<p>As well as constructing a compost yard in one floating community, to enable organic wastes to be turned into compost, demonstrations of transporting waste generated by the floating communities to the mainland were carried out, such as transporting coal briquette ash to a cement plant. Moreover, in order to ensure that waste separation becomes firmly established, waste sorting bins were distributed to the households of one floating community and a seminar was held for local residents. At the same time, an environmental seminar was held for the operators of tour boats, with a view to promoting the on-shore pre-processing of the food to be cooked on board the boats, in order to reduce the volume of kitchen refuse and wastewater generated by such boats.</p>
	 <p>A compost yard built at a floating community</p>
Reduction of pollutant load in wastewater	<p>As a result of training community leaders and implementing seminars for local residents, in order to promote a reduction in the quantity of detergent use by using acrylic scrubbing pads to wash the dishes and encourage appropriate use of laundry detergent, activities to deal with wastewater from floating communities began to be carried out at all four such communities. Moreover, GEC held a residents exchange event on environmental protection among the four floating communities, with the objective of ensuring that the activities become firmly established throughout the floating communities, by promoting interaction between the residents in each floating community and exchanging and sharing information concerning activities to popularise the activities.</p>
	 <p>Demonstration of the use of acrylic scrubbing pads during a seminar for local residents</p>
Environmental education	<p>In order to ensure that environmental education continues to be carried out at floating primary schools, with a view to increasing environmental awareness among the residents of the floating communities, an environmental education textbook was compiled for primary school children with a companion volume for their teachers, concerning the importance of environmental protection, simple methods of measuring water quality, and wastewater measures that they can implement themselves, and carried out model lessons at all four floating primary schools, as well as holding briefing sessions for the teachers. The environmental education textbook* has been approved by the Quang Ninh Provincial Department of Education as an official textbook.</p>
	 <p>Model lesson at a floating primary school</p>



Environmental education textbook (for primary school students)

Main Activities	Content
Environmental leadership training	<p>Between 31 October and 11 November 2011, the Environmental Leadership Training course was held in Osaka and Shiga, with the objective of promoting locally organised environmental activities. A total of four participants were invited from the counterpart organisations involved in the projects in Ha Long Bay, namely the Ha Long Bay Management Department, the Women's Union and the Youth Union. Through the programme of lectures and site visits, the participants learnt about environmental protection initiatives undertaken by Japanese local authorities and private companies, as well as examples of environmental activities undertaken with participation of local residents, or on the basis of collaboration and partnership among local governments, private companies and residents.</p>



Education & Training of environmental activity leaders (Japan)

Seminar on Integrated Solid Waste Management in Ho Chi Minh City, Vietnam: Activities to Support the 3Rs

Following the conclusion in July 2011 of the agreement entitled 'Key Areas in Cooperation Between the People's Committee of Ho Chi Minh City (the Socialist Republic of Vietnam) and the Osaka City Government (Japan)', in response to a request from the Osaka municipal government, GEC provides support for the building of cooperative relationships between the two cities in the field of waste and the 3Rs, while seeking collaboration with relevant organisations, such as the Osaka Water & Environment Solutions Association (OWESA)*.



Waste management seminar

In FY2011, as well as conducting a field survey in November 2011, GEC held the Seminar on Integrated Solid Waste Management in Ho Chi Minh City (HCMC) on 16 February 2012 in HCMC. (Co-hosted with the Department of Natural Resources and Environment (DONRE) of HCMC and OWESA. Cooperation was also received from the Osaka municipal government and IETC.)

In addition to discussions about future approaches to cooperation between Osaka City and HCMC in the field of waste and the 3Rs, this seminar featured presentations by Osaka-based companies providing introductions to intermediate processing technologies that could contribute to resolving the issue of waste in HCMC. Moreover, the seminar resulted in the direction of cooperation in the field of waste and the 3Rs proposed by Osaka City (i. support for the formulation of policy on waste management and the 3Rs by HCMC; ii. cultivation of personnel dealing with waste management and the 3Rs in the HCMC municipal government; and iii. dispatch of a group to conduct a basic survey concerning waste and 3Rs technology) being compiled as the Co-Chairs' Summary, which was signed by the Osaka City Environment Bureau and DONRE.

On 17 February 2012, a tour of waste disposal facilities (landfill site, compost facility, and medical waste disposal facility) was conducted for Osaka-based companies, to enable them to acquire a more profound understanding of the current status of waste disposal in HCMC, as well as exchanging opinions and information with engineers at local waste disposal plants.

In response to the Co-Chairs' Summary, GEC will continue to collaborate with bodies including Osaka City, Osaka-based environmental plant manufacturers, and DONRE in HCMC, in order to resolve the problem of waste in HCMC and support efforts to promote the 3Rs, as well as contributing to the overseas transfer of waste management technologies from the Osaka and Kansai areas.

Osaka Water & Environment Solutions Association

The Osaka Water & Environment Solutions Association (OWESA) (Secretariat: Urban Infrastructure Technology Centre Foundation), whose membership consists of relevant bureaus and economic organisations, was established in Osaka City in April 2011, in order to contribute to regional revitalisation by supporting the overseas expansion of Osaka- and Kansai-based companies and to the resolution of overseas water and environmental problems through public-private partnerships. OWESA's main activities are focused on (i) the overseas promotion of water and environmental technology; (ii) support for the formation and commercialisation of overseas deployment projects for water and environmental technology; and (iii) support for the outsourcing of projects based on public-private partnerships. As one of the groups involved, GEC is cooperating in the overseas expansion of Osaka- and Kansai-based companies in the field of waste in particular, while making use of its achievements to date in the field of international environmental cooperation and its network of connections with international organisations such as UNEP.

Contribution to Measures for the Mitigation of Climate Change

United Nations Framework Convention on Climate Change (UNFCCC)

Also called the Climate Change Framework Convention. The ultimate objective of this Convention is to achieve the stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. It imposes various obligations on the contracting parties, such as the compilation of greenhouse gas emission and absorption inventories and the formulation and implementation of national plans for global warming countermeasures.

CDM (Clean Development Mechanism)

When a developed country (investor country) provides funds and technical assistance for the implementation of a project which leads to a reduction in greenhouse gas emissions in a developing country (host country), credits (CER) are issued for the amount of reduced emissions. A developed country can then use these credits to achieve its own emission reduction target.

JI (Joint Implementation)

Joint Implementation is a system whereby developed nations cooperate to implement projects to reduce greenhouse gases, with one developed nation (the host nation) issuing credits called Emission Reduction Units (ERUs) after converting a corresponding amount of Assigned Amount Units (AAUs), and the other developed nation (investor nation) able to use those ERUs to achieve their own emission reduction targets.

In the late 1980s, a number of countries began international negotiations aimed at dealing with the problem of global warming, which requires a response on a global scale. Many countries participated in the United Nations Framework Convention on Climate Change (UNFCCC)*, which was drawn up at the United Nations Conference on Environment and Development (Earth Summit) held in Rio de Janeiro, Brazil in 1992, and the Kyoto Protocol, which stipulated GHG reduction targets for developed countries, was adopted at the Third Conference of Parties to the UNFCCC (COP3), which took place in Kyoto in 1997. Moreover, the Kyoto Protocol also prescribed flexibility mechanisms, called the Kyoto Mechanisms, as mechanisms for supporting the achievement of those reduction targets by developed countries. These Kyoto Mechanisms consist of the Clean Development Mechanism (CDM)*, which involves cooperation between developed and developing countries, Joint Implementation (JI)*, which involves cooperation among developed countries, and the trading of emission quotas and carbon credits among developed countries (international emissions trading).

The Kyoto Protocol stipulates the reduction targets to be achieved during the first commitment period (2008-2012), and discussions began in 2005 concerning such matters as the reduction targets for the period from 2013. Against the background of a lack of participation in the Kyoto Protocol by the USA, which was the world's largest emitter of GHGs at the time, and an increase in GHG emissions from China, India and Brazil, the contracting parties began deliberations concerning long-term cooperative actions. However, due to conflicts between the interests of the various countries involved in negotiations, the specific international regime to be implemented from 2013 has not yet been clearly determined. In this process, Japan has announced that it shall not be obliged to implement reductions during the second commitment period of the Kyoto Protocol, and is arguing in favor of the construction of a new international framework to replace the Kyoto Protocol, under which obligations would be imposed fairly on all major emitting countries.

With regard to negotiations concerning the future framework for 2013 and beyond, at COP17/CMP7* in 2011, the so-called 'Durban Package' was adopted, which contained the decision that the second commitment period of the Kyoto Protocol would begin in 2013, as well as the decision to begin negotiations concerning a new legal framework to enter into force in 2020 and adopt this at COP by 2015, so developments in future negotiations will be the focus of attention.

Since FY1999, GEC has been commissioned by the Ministry of the Environment to conduct the CDM/JI Feasibility Study Programme, which involves conducting feasibility studies of projects undertaken based on the CDM and JI flexibility mechanisms (Kyoto Mechanisms) prescribed in the Kyoto Protocol. As the secretariat for these CDM/JI Feasibility Studies, GEC has endeavoured to expand the range of businesses within Japan that are participating in the use of market mechanisms relating to global warming countermeasures, by disseminating information that contributes to the discovery of promising CDM/JI projects and information concerning complex CDM/JI systems, procedures and regulations, and conducting information dissemination and educational activities within Japan, as well as managing the progress of CDM/JI Feasibility Studies (FS) conducted by private sector operators, among others.

However, in the project-based CDM/JI system, there have been many cases in which large-scale projects (projects that involve large reductions in GHG emissions) were exhausted in the early stages, and it is not possible to ensure the profitability of private sector investment with comparatively small-scale projects. Moreover, particularly in the case of CDM, projects are implemented in developing countries which have no GHG reduction targets, and the system requires that the difference between the likely emissions situation in the absence of this project (the baseline) and the volume of emissions after implementing the project be used as a credit to enable developed countries to achieve their reduction targets; accordingly, project operators are required to prove that this reduction would not have taken place without CDM

(in other words, if there had been no additional benefit resulting from the GHG reduction credit (certified emission reduction, or CER) due to CDM). This approach is based on the concept of 'additionality', in which credits are only given for reduction effects that are 'additional' to those that would have been achieved in the absence of CDM. Those implementing CDM projects are required to prove this additionality and the system incorporates a process that involves multiple checks of the appropriateness thereof, which is an obstacle to CDM project implementation.

These Kyoto Mechanisms, which make it possible to create credits and resell them to the places that need them, are meant to be incentives to attract private sector investment, but there are many cases in which, in addition to the fact that the process takes a long time to reach the project implementation stage, the aforementioned proof of additionality became a burden or the methodology for proving additionality was not approved, so the project ended up not being implemented. Furthermore, as these are private-sector-led projects, the project owners in the host country (a developing country) are required to curb the initial investment and, as a consequence, items such as Japanese-made technology and equipment, which perform well but are expensive, are rarely used.

The Japanese government has argued that Japan is contributing to worldwide GHG reductions with its advanced technological capacity, but that because there are many things that cannot be implemented as CDM, it is not receiving credits, so it is not being appraised properly on the international stage. Accordingly, it has advocated the construction of a new mechanism that would enable Japan's contribution to the world to be evaluated properly. This was formally proposed to the UNFCCC in the form of the 'Bilateral Offset Credit Mechanism (BOCM)'.

In response, among the CDM/JI Feasibility Studies (project commissioned by the Ministry of the Environment) in FY2010, GEC conducted three 'New Mechanism Feasibility Studies' on a trial basis, as specific case studies to contribute to the construction of the BOCM system. The number of studies carried out increased to 29 in FY2011.

New Mechanism Feasibility Studies

In FY2011, having been commissioned by the Ministry of the Environment, GEC put out a public call for New Mechanism Feasibility Studies (FS), selected them, managed their progress, and published their results. It was anticipated that these New Mechanism FS would detail the outcomes of studies that would contribute to the design of the institutional arrangements for the Bilateral Offset Credit Mechanism (BOCM) proposed by the Japanese government.

On 28 April 2011, GEC began publicly soliciting proposals for studies, and had received 77 proposals by the time of the deadline for submissions on 26 May. After GEC subsequently carried out document- and interview-based screening, followed by a review by a support committee consisting of experts in the flexibility mechanisms, 29 proposals were selected and adopted, and FS were carried out from 15 July by the applicant organisations.

List of 2011 New Flexible Mechanism Feasibility Studies*

Project Category	Title of Feasibility Studies	Countries
Waste Management	New Mechanism FS for Waste Management Activities	Thailand
	New Mechanism FS for Energy Application of Wastes and Wastewater Originated in Processing of Agricultural Products	Indonesia
	New Mechanism FS for Energy Generation by Waste Management Activities, through Anaerobic Digestion as Model Technology	Malaysia
Biomass Utilisation	New Mechanism FS for Development of Castor Seed Industry Cluster	Sri Lanka
Transportation	New Mechanism FS for Development of Mass Rapid Transit (MRT) Network	Thailand
	New Mechanism FS for Urban Transport Management	Lao PDR
	New Mechanism FS for Development of Mass Rapid Transit (MRT) Systems	Indonesia, Viet Nam

COP (Conference of the Parties to the UNFCCC)

The supreme decision-making body of the UNFCCC. Held annually.

CMP (Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol)

The supreme decision-making body of the Kyoto Protocol. Held annually.

2011 New Flexible Mechanism Feasibility Studies

Please refer to the GEC website for further details on the study reports

List of 2011 New Flexible Mechanism Feasibility Studies*

Project Category	Title of Feasibility Studies	Countries
Renewable Energy	New Mechanism FS for Renewable Energy Development by Wind Power Generation in Low Wind Speed Conditions	Thailand
	New Mechanism FS for Development of Best Grid Electricity Mix Focusing on Renewable Energy Sources	Sri Lanka
	New Mechanism Feasibility Study for Renewable Energy Development Focusing on Geothermal Power Generation	Colombia
Energy Efficiency Improvement	New Mechanism FS for Energy Saving by Reducing Water Consumptions through Diffusion of Water-Saving Toilet Systems to Households	China
	New Mechanism FS for Energy Efficiency Improvement by Introducing Energy Management and Control Systems at Factories	China
	New Mechanism FS for Multiple Application of Energy Efficiency Improvement Measures at Coal Thermal Power Plants	Mongolia
	New Mechanism FS for Energy Saving at Buildings by Utilising Geothermal Heat Pump and Other Technologies	Mongolia
	New Mechanism FS for Promotion of Energy Efficiency Improvement through Institutional Development of Building and Energy Management Systems (BEMS) with Certificated Carbon Credits	Thailand
	New Mechanism FS for Energy Savings by Utilising LED Lights at Office Buildings	India
	New Mechanism FS for Energy Efficiency Improvement by Introducing High-Performance Industrial Furnaces to Aluminium Industry	India
	New Mechanism FS for Promotion of Energy Efficiency Improvement at Households through Introduction of Low-CO ₂ Houses and Diffusion of Energy-Efficient Appliances	Mexico
	New Mechanism FS for Integrated Energy Efficiency Activities at Beer/Beverage Factories Using Specific Energy Consumption Methods	South Africa
REDD+*	New Mechanism FS for REDD+	Indonesia
	New Mechanism FS for REDD+ and Bio-Fuel Production and Utilisation	Indonesia
	New Mechanism FS for Avoidance of Peat Aerobic Degradation by Peatland Rewetting and Rice Husk-based Power Generation Associated with Rice Production Increase	Indonesia
	New Mechanism FS for REDD+	Cambodia
	New Mechanism FS for REDD+ through Revegetation at Denuded Lands and Woody Biomass-based Power Generation	Viet Nam
	New Mechanism FS for REDD+	Brazil
	New Mechanism FS for REDD+ through Revegetation at Derelict Commercial Forested Lands and Fuelisation of Woody Biomass Chips for Cement Plants	Angola
Others	New Mechanism FS for Electric Generation based on Low-Level Coal Mine Methane and Integrated Energy Efficiency Improvement	China
	New Mechanism FS for CO ₂ Reduction through Utilising Off-Peak Power from Storage Batteries and Introducing Electric Vehicles	Thailand
	New Mechanism FS for CO ₂ Abatement through Utilisation of Blast Furnace Slags as Blending Material for Cement	Vietnam

REDD+

Reducing emissions from deforestation and forest degradation, and the role of conservation, sustainable management of forests, and enhancement of forest carbon stocks.



Example of deforestation in Indonesia

The survey items in the New Mechanism FS included the setting of the reference scenario, monitoring methods, GHG emissions and the reductions, measurement, reporting and verification (MRV) system for GHG reductions, ensuring environmental integrity, and contribution to sustainable development in host countries.

The reference scenario is similar to the baseline scenario in CDM, but whereas in CDM the baseline scenario for a CDM project activity is the scenario that reasonably represents GHG emissions that would occur in the absence of the proposed project activity, a broader interpretation can be permitted in the reference scenario in the BOCM. GEC sought study outcomes to ascertain how the reference scenario should be determined, and how to reflect the policies and situation in host countries and individual circumstances when doing so. Moreover, the BOCM did not have established institutional arrangements at the time, so simple methods for monitoring the parameters required in quantitative evaluation of the emissions resulting from the projects and activities targeted by the study were also an important focus

of the studies. In the FSs, it is not possible to carry out actual measurements in relation to proposals that are not yet operational, but the studies were required to show provisional calculations based on various preconditions and assumptions in a hypothetical situation. Moreover, in the FSs, the question of how the GHG reduction effect would be measured, how the results of those measurements would be reported, and how the reported reduction effect would be verified by a third-party organisation – that is to say, how measurement, reporting and verification would be carried out – was another crucial survey item.

In order to support the implementation of studies by FS entities, taskforces consisting of experts in specific technical fields were established under the auspices of GEC, and support was provided by such means as creating teams for specific fields (waste management, transport, energy conservation, and REDD+), which held meetings with the organisations implementing the studies in order to give advice from an expert standpoint regarding such matters as study implementation methods.

Moreover, the BOCM depends on bilateral discussions between Japan and the host country, so GEC held Host Country Consultative meetings in Indonesia, Thailand and Mongolia, with the objective of promoting understanding of the BOCM among the governments of host countries, as well as sharing information concerning the specific content of the projects envisaged to be implemented via this mechanism. Two Host Country Consultative meetings were held for each country; in the cases of Indonesia and Mongolia, one meeting was held locally and participants were invited to Japan (Tokyo) for the other, but the meetings for Thailand were both held locally. FS entities implementing FS in the country also participated in the Host Country Consultative meeting, providing an introduction to the content of the studies and their progress status, as well as the results thereof, thereby deepening mutual understanding and encouraging the building of cooperative relationships between FS entities and the governments of the host countries.

The FS were completed on 4 March 2012 and FS entities submitted their FS reports. These FS reports provide a detailed summary of the outcomes of the studies and in light of the fact that one of the objectives of the New Mechanism Feasibility Studies is to build up a stock of knowledge and experience, not only in Japanese but also in English editions of the reports were published on the GEC website, in order to disseminate information both within Japan and overseas, thereby conducting outreach focused on cultivating the BOCM.

CDM/JI Feasibility Studies

In the same way as the aforementioned New Mechanism FS, having been commissioned by the Ministry of the Environment, GEC put out a public call for CDM/JI Feasibility Studies (FS), selected them, managed their progress, and published their results. Although these CDM/JI FS were to focus on studies of projects to be implemented on the basis of CDM and JI, which were prescribed in the Kyoto Protocol and the institutional arrangements for which had already been established, when GEC issued a public call for submissions, emphasis was placed on the resolution of issues concerning CDM/JI and contributing to further institutional development in this regard. More specifically, the following types of proposal were solicited: (i) proposals involving the development of new methodologies or the revision of methodologies; (ii) proposals involving the development of standardised baselines; (iii) proposals that would contribute to remedying the regional distribution of CDM projects; and (iv) proposals that corresponded to the Programme of Activities (PoA) category of CDM/JI. Of these, (i), (ii) and (iii) focus on CDM projects alone.

In conjunction with the New Mechanism FS, GEC carried out the public call for submissions and selection process for CDM/JI FS. On 28 April 2011, GEC began publicly soliciting proposals for studies from private sector operators within Japan, and had received 12



First Consultative Meeting with the Republic of Indonesia (Tokyo)



First Consultative Meeting with the Kingdom of Thailand (Bangkok)



First Consultative Meeting with Mongolia (Ulaanbaatar)

2011 CDM/JI Feasibility Studies

Please refer to the GEC website for further details on the study reports



Example of a household biogas digester in Bangladesh



Cargo transport vehicles in Malaysia

proposals by the time of the deadline for submissions on 26 May. After GEC subsequently carried out document- and interview-based screening, followed by a review by a committee consisting of experts with a profound knowledge of flexibility mechanisms including CDM/JI (the same as the support committee for the New Mechanism FS), the successful proposals were selected and adopted shown in the list below, and FS were carried out from 15 July by the applicant organisations. The studies adopted all focused on CDM projects.

List of 2011 CDM/JI Feasibility Studies*

Project Category	Title of Feasibility Studies	Countries
1. New CDM Methodology Development		
Energy Efficiency	CDM FS for Energy Efficiency Project through Installing High Efficiency Air Conditioners, with New CDM Methodology Development	Vietnam
2. Development of Standardised Baseline		
Biomass Utilisation	CDM FS for Biomass-based Power Generation Project, with Development of Standardised Baseline of Off-Grid Electricity Generation	Cambodia
3. Remedy of geographical inequalities		
Renewable Energy	CDM FS for Wind Power Generation for Hambantota International Convention Centre	Sri Lanka
Waste Management	CDM PoA FS for Household Biogas Digester Promotion Programme	Bangladesh
	CDM PoA FS for Energy Utilisation of Broiler Chicken Manure	Kazakhstan
4. Programme of Activities (PoA) category of CDM/JI		
Transportation	CDM PoA FS for Fuel Efficiency Improvement through Introduction of Digital Tachograph to Cargo Trucks	Malaysia

More specifically, in relation to the CDM/JI FS, as described above, feasibility studies were carried out by the bodies that had submitted the proposals, in relation to the following types of proposal: (i) proposals involving the development of new methodologies or the revision of methodologies; (ii) proposals involving the development of standardised baselines; (iii) proposals that would contribute to remedying the regional distribution of CDM projects; and (iv) proposals that corresponded to the Programme of Activities (PoA) category of CDM/JI. In addition, the FS in category (i) involved a study aimed at developing new methodologies and submitting them to the CDM Executive Board, while the FS in category (ii) involved a study that would develop standardised baselines that could be proposed to the designated national authority (DNA) in each relevant host country. Of the three FS adopted in category (iii), two were related to PoA, one of which involved a study of the process involved in undergoing the validation review required to apply for registration of a project (including visits to the area concerned).

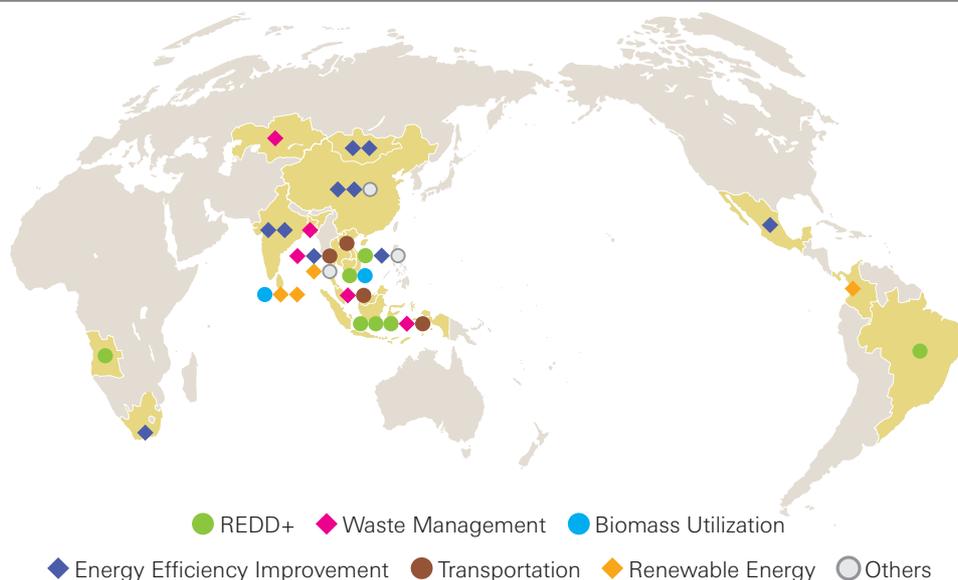
In the case of (i) new methodology development, as the application of methodologies approved by the CDM Executive Board is required in CDM, it is necessary to develop new methodologies that are applicable to actual projects and include techniques that are suited to project implementation in cases in which there is no extant approved methodology, or where only some of the conditions for application correspond, even if they appear applicable, or where those conditions are applicable in theory, but not suited to being implemented in regard to actual projects. Developing new methodologies would enable projects that had not come to fruition under CDM to become eligible as CDM projects, thereby securing additional benefits resulting from credits based on certified emission reductions (CER) and making it possible to implement such projects. This would broaden the scope of projects eligible for consideration as CDM and enable more projects to be implemented in a wider range of fields.

With regard to the standardised baselines referred to in category (ii), it is envisaged that the standardised baselines developed and approved for application at CMP6 will be applied universally to host countries (or groups thereof). The CDM project baselines are defined as the scenario that reasonably represents GHG emissions that would occur in the absence of the CDM project activity, and are very important as they form the starting point when calculating the emission reduction effect of CDM projects. In order to identify these scenarios, it is necessary to verify various data and information after gathering and collating it, so the

scenarios are basically set for each project, with their appropriateness – including the grounds for the scenario that has been set – being judged during the process of screening by the CDM Executive Board when the validation review or application for registration takes place. However, in the case of countries such as least-developed countries (LDC), even if endeavours are made actually to develop CDM projects, a great deal of time, effort and money is required before the baseline scenario can be identified, due to such issues as lack of availability of data, which can result in projects not being implemented, and this is one of the reasons why CDM projects are not implemented in countries such as LDC. A resolution concerning the development of standardised baselines was passed at CMP, in the hope that they would solve this problem. It can be expected that, by stipulating a universal baseline scenario for a particular host country, standardised baselines would simplify matters that hitherto had to be set for each project and, consequently, would contribute to reducing transaction costs, thereby increasing the possibility that more CDM projects would be implemented.

The term 'regional distribution' used in relation to (iii) refers to the problem that CDM projects are concentrated in so-called emerging nations, with China, India and Brazil accounting for approximately 75% of all registered projects. Increasing CDM projects in LDC and African nations has been discussed as an issue relating to CDM since CMP2, which took place in Nairobi, Kenya, but this has not led to any marked improvements. In terms of contributing to the resolution of this issue, improvements in institutional terms, such as the development of standardised baselines in category (ii), are important, as are efforts to support project development in countries where few CDM projects have actually been registered. Based on this perspective, FS will be conducted in regard to proposals from countries with fewer than ten registered CDM projects, which will contribute to the implementation of projects that will lead to such regional distribution being remedied.

A Programme of Activities (PoA), as referred to in category (iv), is a series of flows to which a number of projects are added as part of a programme that qualifies as a single large CDM/JI project. As it is necessary for each and every microscale project to pass a validation review and to identify baseline scenarios in order to do so, it has been quite difficult to implement such projects, due to issues such as the profitability of such projects. However, as a means of overcoming this, under the PoA (Programme of Activities) framework that has been approved as part of CDM/JI, if a large programme successfully clears the validation review process, projects can then be progressively added to this programme (with no upper limit on the number of projects that can be added), as long as they do not contravene the standards for



addition to the programme. Nevertheless, the number of proposals for PoA has not grown as much as had initially been anticipated, and many of the microscale proposals are closely intertwined with the lives of local citizens, so an increase in the number of PoA would be desirable. Consequently, it is anticipated that developing and implementing PoA proposals and increasing the number of projects added to such programmes will ensure a greater GHG emission reduction effect.

The CDM/JI FS were also completed on 4 March 2012 and the FS entities submitted their FS reports. These FS reports provide a detailed summary of the outcomes of the studies and in light of the fact that one of the objectives of this endeavour is to build up a stock of knowledge and experience, not only in Japanese but also in English editions of the reports were published on the GEC website, in order to disseminate information both within Japan and overseas. Moreover, an application for approval for one new methodology was submitted to the CDM Executive Board, and one standardised baseline was proposed to the designated national authority (DNA) of a host country.

Information Dissemination and Educational Activities Concerning Climate Change Measures

In order to conduct wide-ranging information dissemination and educational activities, such as climate change measures and discussions at international conferences about these, including the content and outcomes of New Mechanism FS and CDM/JI FS, GEC gathers information at international conferences, organises symposiums and events, and disseminates information via its website.

• Gathering information at international conferences and other events

GEC participated in the UNFCCC 34th Sessions of the Subsidiary Bodies (SB34, 6-17 June 2011, in Bonn, Germany), the 17th Conference of Parties (COP17, 28 November - 10 December 2011, in Durban, South Africa), and the meetings of the Ad Hoc Working Groups (AWGs) held in Panama in October 2011, and gathered the latest information about matters including trends in international negotiations concerning measures to alleviate climate change in relation to the flexibility mechanisms, among other topics.

• Organising the Global Warming Countermeasures Symposium 2011 'Exploring the Feasibility of New Mechanisms in Developing Countries'

In partnership with the Ministry of the Environment, GEC held the Global Warming Countermeasures Symposium 2011, in order to widely disseminate the latest information about measures to counter global warming and new mechanisms for doing so. The symposium was held at the Sabo Hall Annex (Tokyo) on 21 September 2011 and at the Osaka Museum of History on 22 September. Attracting 195 participants



At the Tokyo venue

to the Tokyo venue and 72 to the Osaka venue, this symposium featured presentations about such matters as trends in international negotiations concerning new mechanisms and Japan's proposal for one such mechanism, as well as activities to promote the dissemination of information in the regard and support for the construction of institutional arrangements through the implementation of feasibility studies. In addition, a report was given on the results of the FY2010 New Mechanism FS and CDM/JI FS.

• Organising the New Mechanism Feasibility Studies Symposium 2012 'Toward the Construction of the Bilateral Offset Credit Mechanism (BOCM)'

In partnership with the Ministry of the Environment, GEC held the New Mechanism

Feasibility Studies Symposium 2012 at the Iino Hall (Tokyo) on 27 February 2012, in order to report on the outcomes of the FY2011 New Mechanism FS, as well as widely disseminating the latest information about negotiations and decisions at COP17 concerning new mechanisms. The symposium attracted approximately 200 participants. As well as providing an introduction to the results of and latest trends in international negotiations concerning such matters as new mechanisms and CDM/JI, in order to achieve qualitative and quantitative improvements in future feasibility studies, this symposium featured presentations about proposals for improvements to feasibility studies carried out by the Ministry of the Environment, in light of the lessons learnt from progress management of feasibility studies carried out during the current fiscal year.



New Mechanism Feasibility Study Symposium 2012

• **Organising official side events at UNFCCC sessions**

At SB34, in partnership with the Ministry of the Environment and the Overseas Environmental Cooperation Centre, Japan (OECC), GEC organised an official side event on the sixth day of the meeting (11 June), entitled 'First Findings of New Mechanisms FS – based on Lao-Japan Cooperation in Transport Sector'. This side event featured an explanation of the New Mechanism Feasibility Study programme implemented in FY2010 and the three FS carried out under its auspices. One of these – the Feasibility Study on NAMA* in the Transport Sector of Laos – was taken up in greater detail, in order to explore in greater depth the results of the survey and the path to future commercialisation, with a presentation by representatives of the government of Laos concerning their country's climate change countermeasures and initiatives aimed at achieving sustainable urban transport, and a report on the outcomes of the study by Mitsubishi UFJ Morgan Stanley Securities Co., Ltd., which conducted the FS in question. Moreover, there were also introductions to initiatives by the Ministry of the Environment focused on new mechanisms and the OECC's New Mechanism Information Platform.



SB34 Side Event (Bonn, Germany)



COP17 Side Event (Durban, South Africa)

Furthermore, at COP17, in collaboration with the Ministry of the Environment, the OECC, the Japan International Cooperation Agency (JICA) and Keio University, GEC held an official side event on the second day of the conference (29 November). More than 70 people, including government representatives and experts from each country, participated in this side event, which was the scene of lively discussions. GEC provided an introduction to promising findings from the results of the FY2011 New Mechanism FS, while the presentation by Climate Experts Ltd. highlighted the specific example of the New Mechanism Feasibility Study for Integrated Energy Efficiency Activities at Beer/Beverage Factories Using Specific Energy Consumption Methods in South Africa, in which the company had participated, examining the issues considered therein and the envisaged outcomes of the study. Moreover, there were introductions that focused not only on mitigation, but also adaptation, as well as Japanese support for the development of inventories in developing countries and programs undertaken by institutions of higher education focusing on the problem of climate change.

NAMA (Nationally Appropriate Mitigation Actions by developing countries)

Climate change mitigation actions implemented in response to the individual circumstances of developing nations. The term was first referred to in the COP13 Bali Action Plan. Developing nations requested submission of a list of NAMAs in the COP15 Copenhagen Accord, and creation of the NAMA Registry was incorporated into COP16 Cancun. This registry contains NAMAs for which support is sought in order to facilitate their funding.

• **Disseminating information at UNFCCC sessions**

GEC put together an English-language booklet entitled *Japan's Initiative toward Establishment of New Mechanisms: Lessons Learnt from Case Studies 2010*, which provides an overview of the results of the three New Mechanism FS conducted in FY2010, with the objective of distributing it during SB34, including at the side event that it was organising.

Moreover, at COP17, GEC endeavoured to promote the widespread international dissemination of information through such initiatives as exhibiting an official booth jointly with IGES and displaying posters introducing the FY2011 New Mechanism FS and CDM/JI FS, as well as putting together a booklet providing an overview of the proposals for studies, and distributing this along with the booklet compiled for distribution at SB34.

• **Other information dissemination and educational activities**

At the 2nd Asia Forum on Carbon Update, which was held on 15-17 February 2012 in Bandung, Indonesia, GEC organised a parallel session entitled "Carbon Market Update Mechanism", in partnership with the Institute for Global Environmental Strategies (IGES) and Indonesia's National Council on Climate Change (DNPI). This parallel session featured an introduction by IGES to capacity development programmes relating to the market mechanisms and an overview of the domestic emissions trading system in Indonesia, as well as a report by GEC on the results of New Mechanism FS focused on proposals in Indonesia.

Furthermore, as well as compiling the information gathered at international conferences (UNFCCC sessions, etc.) and introducing the results of its analysis, GEC also uses its website to publish the outcomes of events that it has held, the results of FS, and various related publications, thereby promoting the widespread dissemination of information.

Duties as the Secretariat of the Osaka CDM Network

GEC serves as the secretariat of the Osaka CDM Network (O-CDM), members of which include private sector companies. The Osaka CDM Network is a network that was established jointly in February 2004 by GEC, the OISCA Kansai Branch and the Osaka Urban Industry Promotion Centre, in order to encourage active participation in CDM projects by Osaka-based companies, and conducts activities with the objective of



Osaka Carbon Conference 2011

offering a forum for the provision of information and exchange of opinions through workshops, as well as for practical activities. In 2008, it launched the Osaka Carbon Offset Concierge (OCONOMI) initiative to popularise carbon offset, which involves using the emission reduction effect achieved in one location (i.e. the credits, etc. generated from this) to offset emissions of greenhouse gases (GHG) such as CO₂ that inevitably arise from daily life and economic activities; since then, it has been implementing measures to achieve a low-carbon society.

In FY2011, as the secretariat of O-CDM, GEC managed the following activities.

- Holding study groups for members concerning the new mechanism (BOCM)
- Holding the Osaka Carbon Conference 2011 to report on the results of COP17
- Compiling a draft anthology of carbon offset case studies
- Disseminating information and responding to enquiries via the website

Moreover, membership was restricted to groups until FY2010, but GEC has implemented various initiatives to make the running of O-CDM smoother and enhance its activities, such as revising the organisation's regulations to make it possible to accept individual members as well, and establishing two types of membership category: 'full membership', for groups, and 'associate membership', for individuals.

Human Resource Development in Developing Countries

Japan International Cooperation Agency (JICA) Group Training Project

Having been commissioned by JICA, GEC held the following 5 training courses for engineers and government officials from developing countries. In addition, it continued to hold the Japan-Mexico Training Programme for the Strategic Global Partnership (formerly known as the Japan-Mexico Exchange Programme): Total Environmental Contamination Control course, a training programme which was launched in FY2010 and involves students and young engineers, among others, from Japan and Mexico participating in training courses in the counterpart country; two trainees participated in this course in FY2011.

The participants in each course presented a 'Country Report*' at the start of each course to share awareness of their nations' respective environmental issues, and an 'Action Plan*' at the end of the training specifying their intended objectives upon repatriation.

GEC will continue to provide training while coordinating with affiliates in order to respond to changing needs in courses that are in high demand in developing nations. We will also strengthen our partnerships with research & affiliate organizations to cater to the strong demand from developing nations for new environmental training.

Training period	Nationality of participants	Main course contents
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Japan-Mexico Training Programme for the Strategic Global Partnership: Total Environmental Contamination Control*

6 May– 9 December 2011	2 participants from Mexico	<p><u>Purpose</u> To develop the participants' capacity in the field of comprehensive environmental contamination control by providing a board range of relevant expertise and experience through participation in multiple JICA group training</p> <p><u>Cooperating bodies</u></p> <ul style="list-style-type: none"> • Osaka City University • Osaka City Institute of Public Health and Environmental Sciences • Osaka Bay Regional Offshore Environmental Improvement Centre (Phenix) • Osaka City Port and Harbor Bureau, etc. <p><u>Lectures</u></p> <ul style="list-style-type: none"> • Environmental policy frameworks • Urban solid waste management • Countermeasures against automobile pollution • Waste water treatment from mining industries • Urban heat environment measures, etc <p><u>Facility tours</u></p> <ul style="list-style-type: none"> • Seashore Sanitary Landfill Site • Osaka City University Botanical Garden • Minamata Disease Municipal Museum, etc.
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Mega-City Environmental Policy & Environmental Management System*

13 June– 29 July 2011	6 participants from India (1), Indonesia (2), Kosovo (1), Mexico (2)	<p><u>Purpose</u> To master pragmatic and practical methodologies, such as the framing of environmental policies, techniques of the environmental assessment, guiding corporation policies, Environmental Management Systems and methods of enlightening citizens.</p> <p><u>Cooperating bodies</u></p> <ul style="list-style-type: none"> • Osaka City Environment Bureau • Kyoto City • United Nations Centre for Regional Development • United Nations University • Senri Kinran University • Kwansai Gakuin University • Namazue Higashi Elementary School • Kubota Corporation • Rematec Corporation, etc. <p><u>Lectures</u></p> <ul style="list-style-type: none"> • Environmental administration in Osaka, Japan • Environmental Management System • Environmental impact assessment • Environmental policy and socioeconomic systems • Countermeasures of climate change, etc. <p><u>Facility tours</u></p> <ul style="list-style-type: none"> • Incineration plant • Recycling and sorting centre • Landfill site • Sewage treatment plant • Biodiesel fuel plant from waste edible oil • Environmental education activities at a primary school • Waste recycling facility utilizing subcritical water, etc.
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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 minimize the gap in issue awareness between trainees and instructors.

Action Plan

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

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



Practical exercise at a research institute

Mega-City Environmental Policy & Environmental Management System



Visit to Sewage treatment plant

Urban Solid Waste Management by Local Government



Field trip to landfill site in North port

Countermeasure against Automobile Pollution in Urban Area



Practical exercise in eco-driving at JAF

Waste Effluent Pollution Control Caused by Mining and Manufacturing Industries for Central and South America



Tour of a mine wastewater disposal facility (formerly the Matsuo mine)

Training period	Nationality of participants	Main course contents
Urban Solid Waste Management by Local Government*		
22 August– 19 October 2011	7 participants from Colombia (1), Cuba (2), Fiji (1), Makedonia (1), Uruguay (2)	<p><u>Purpose</u> To develop leaders and core people who can play a major role in making solid waste treatment plans and in implementing treatment businesses in their countries.</p> <p><u>Cooperating bodies</u> • Osaka City Environment Bureau • Fukuoka University and other universities • National Institute for Environmental Studies • Kokusai Kogyo Co., Ltd. etc.</p> <p><u>Lectures</u> • Outline of waste treatment • Sanitary landfill technology • Industrial waste treatment planning etc.</p> <p><u>Practical training/ Facility tours</u> • I Participation in volunteer beautification activities • Recycling facility • Waste incineration plant • Industrial waste treatment facility, etc.</p>
Countermeasure against Automobile Pollution in Urban Area*		
3 October– 18 November 2011	13 participants from Egypt (3), Lao P.D.R. (2), Mongolia (3), Pakistan (1), Philippines (1), Sri Lanka (3)	<p><u>Purpose</u> To formulate & 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 & urban transport policies.</p> <p><u>Cooperating bodies</u> • Osaka City University • Osaka City Environment Bureau • Ministry of Land, Infrastructure and Transport • Japan Automobile Federation (JAF) • Japan Vehicle Inspection Association • Suuri-Keikaku Co., Ltd. etc.</p> <p><u>Lectures</u> • Urban transport & the environment • Measures to deal with motor vehicle traffic • Examples of co-benefit CDM in the transport sector • Drivers' education (practical exercise in eco-driving), etc.</p> <p><u>Facility tours</u> • Traffic control centre • Example of road planning through regional cooperation • Case study of a traffic demand management (TDM), etc.</p>
Waste Effluent Pollution Control Caused by Mining and Manufacturing Industries for Central and South America*		
16 November– 16 December 2011	22 participants, from Argentina (6), Bolivia (2), Colombia (3), Costa Rica (3), Cuba (3), Peru (3), Venezuela (2),	<p><u>Purpose</u> To draw up effective solutions and policies to mitigate environmental destruction and pollution in relevant countries, caused by hazardous substances contained in effluent from mining and manufacturing industries.</p> <p><u>Cooperating bodies</u> • Osaka City Environment Bureau • Osaka City Public Works Bureau • National Institute for Minamata Disease • Yagi Bioecology Centre of Nantan City • International Institute for Mining Technology • Sumitomo Metal Mining Co., Ltd. • Kanden Geo-Re Inc, etc.</p> <p><u>Lectures</u> • Pollution control for hazardous materials • Soil contamination control measures • Industrial wastewater control • Mine safety laws, etc.</p> <p><u>Facility tours</u> • Hishikari mine • Examples of soil contamination measures • Treatment facility for wastewater containing heavy metals, etc.</p>

GEC Networking Project for Former Training Course Participants

In an effort to follow up on former JICA participants and ascertain the needs of developing nations, GEC established the 'GEC Network' for former training course participants in 1998, publishes the 'GEC PLAZA' newsletter and 'Connect the World' e-mail newsletter, and conducts follow-up seminars* to consolidate the network through the exchange of information.

In FY2011, GEC staff visited Ulaanbaatar in Mongolia, where atmospheric pollution has become a serious problem in recent years, to hold a follow-up seminar. In order to support the home country activities of former JICA participants of Countermeasure against Automobile

Pollution in Urban Area training course, which GEC implemented for three years from FY2009 to FY2011, GEC staff visited Mongolia between 4 to 10 March 2012, with the support of JICA, and held a local seminar, as well as seeing the current status of atmospheric pollution and the progress of measures to deal with this. The seminar, which was held on 6 March in Ulaanbaatar, was attended by approximately 50 people. The lecturers from Japan strove to disseminate their knowledge to the participants, and provide an introduction to the Capacity Development Project for Air Pollution Control in Ulaanbaatar City, a JICA technical support project currently being implemented in Ulaanbaatar, as well as giving presentations on topics such as 'Case Studies of Air Pollution in Osaka City' and 'Environmental Standards and Assessments of the Health Impacts of Air Pollution'. Former JICA participants provided an introduction to examples of various air pollution control measures that the city of Ulaanbaatar is working on at present. Moreover, on 7 and 8 March, GEC staff visited the Ulaanbaatar City Traffic Control Centre, an air quality monitoring station, as well as the traditional Mongolian dwellings called '*ger*', whose numbers are increasing in the city centre annually; through this visit, GEC staff were able to gain a proper understanding of the current state of local air pollution control measures, such as seeing the current situation in regard to the *ger* stoves that are believed to be one of the main causes of air pollution in Ulaanbaatar, as well as verifying the technology required to deal with this.



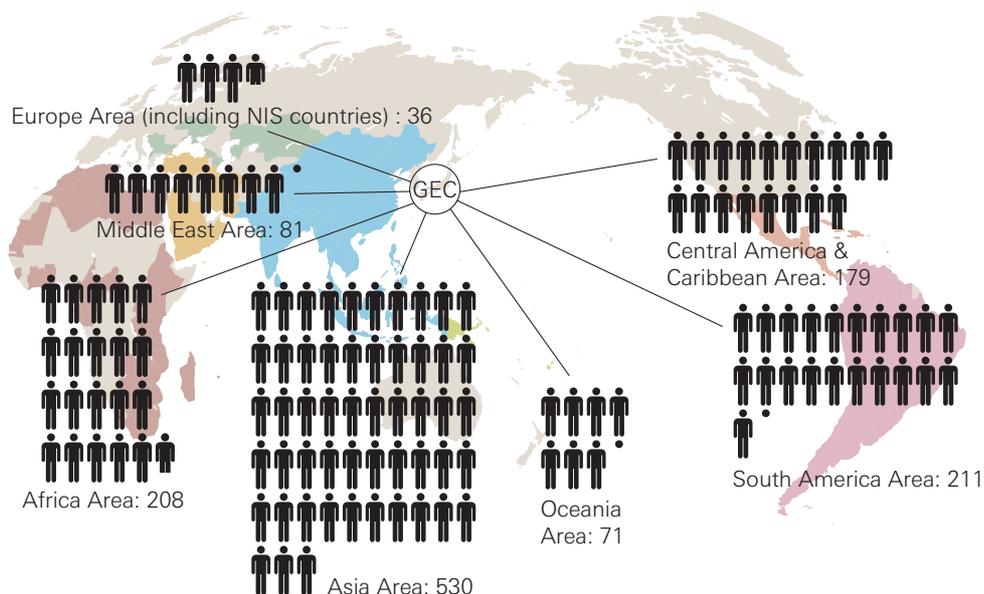
Follow-up seminar

Follow-up Seminar

Held in countries where Network membership is high, the theme of each seminar is intended to reflect the specific needs of that country. These seminars were previously known as 'One Day Seminars' until 2008.

- Thailand & Philippines (March 1999)
- Malaysia & Viet Nam (January 2000)
- Indonesia (February 2001)
- Egypt (March 2002)
- Thailand (March 2005)
- Cuba (March 2007)
- Philippines (March 2008)
- Indonesia (March 2009)
- Peru (February 2010)
- Viet Nam (March 2011)
- Mongolia (March 2012)

Network Member Distribution Diagram (As of March 2011)



Dissemination of Environmental Management Systems (EMS)

Operating the 'Internal Environmental Auditor Training Course'

GEC established the 'Internal Environmental Auditor Training Course' for environmental auditors in the private and public sectors. The course lectures provide essential information on creating and operating environmental management systems (EMS). In 2011, 12 people participated the course.

PR Activities

In FY2011, with the cooperation of associated parties, such as IETC and Osaka City, GEC held symposiums to provide citizens with a more profound understanding of climate change, in addition to conducting PR activities to promote public understanding of the reasons for the existence of GEC and IETC, as well as the content of their projects.

Date	Name of Event	Content	Remarks
25–27 May 2011	Small & Medium Enterprise Fair Venue: Intex Osaka	Display of panels about GEC (Exhibited in the Osaka city Water & Environment Solutions Association booth)	Exhibition
4–19 June 2011	Osaka City Environment Month event 'Environmental Exhibition' Venue: Eco Museum of Osaka	Display of panels about GEC/ IETC	Exhibition
11 & 12 June 2011	Eco Festival Day 2011 Venue: Tsurumi Park (Osaka)	An introduction to the activities of GEC/ IETC, environment quiz	Exhibition
5–7 July 2011	Water Expo 2011 Venue: Singapore	Display of panels and distribution of pamphlets about NETT21 (Exhibited in the Osaka city Water & Environment Solutions Association booth)	Exhibition
8 July 2011	Water quality analysis with JICA overseas trainees and primary school pupils Venue: Osaka Municipal Namazue Higashi Primary School	Promoting international understanding and interest in water-related environmental problems through interaction between primary school pupils from Osaka City and JICA overseas trainees	Environmental education
11 September 2011	Tsurumi Ward Festival Venue: Tsurumi Park (Osaka)	An introduction to the activities of GEC/IETC	Exhibition
1 & 2 October 2011	Global Festa Japan 2011 Venue: Hibiya Park (Tokyo)	An introduction to the activities of GEC/IETC	Exhibition
8 October 2011	ECO Festival 'Garage Sale in OSAKA TOWN' Venue: Osaka Castle Park	An introduction to the activities of GEC/IETC	Exhibition
23 October 2011	Biodiversity Symposium Venue: Osaka Museum of Natural History	An introduction to the activities of GEC/IETC	Joint
29 & 30 October 2011	Eco Art Festa Osaka 2011 Venue: Tempozan Harbour Village (Osaka)	An introduction to the activities of GEC/IETC	Joint
4 February 2012	One World Festival Talk Salon: 'Get to know UNEP! Learn about international environmental cooperation!' Venue: International House Osaka	Introduction to UNEP, IETC and GEC <ul style="list-style-type: none"> • The relationship between our water footprint and daily life • The current status of the waste problem in developing countries • Activities in Ha Long Bay, Vietnam 	Salon Joint
4 & 5 February 2012	One World Festival Venue: International House Osaka	An introduction to the activities of GEC/IETC	Joint
27 February 2011	New Mechanism Feasibility Studies Symposium 2012 'Toward the Construction of the Bilateral Offset Credit Mechanism (BOCM)' Venue: Tokyo Iino Hall	<ul style="list-style-type: none"> • Provision of the latest information about international negotiations concerning new mechanisms, including the BOCM • Presentation of the future direction of the BOCM FS • Report on the results of the FY2011 New Mechanism Feasibility Studies (176 participants) 	Symposium

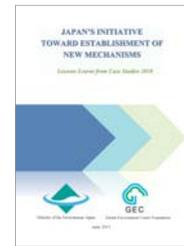
Publications List

Publications in 2011

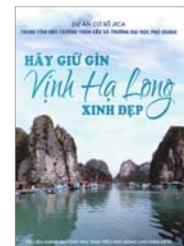
Publication Name	Content	Format	Size/pages/ date of publication
Japan's Initiative toward Establishment of New Mechanisms: Lessons Learnt from Case Studies 2010	Overview of the results of the three feasibility studies on the new mechanisms carried out in FY2010 (booklet for distribution on the day of the SB24 side event)	Booklet PDF	A4/22 pages June 2011 ¹
Waste Recycling Technologies Adopted in Eco-towns in Japan	Booklet concerning waste recycling technologies adopted in Japanese eco-towns, compiled as part of the FY2011 project to build the Eco-town Environmental Technology Database	PDF	A4/52 pages March 2012
Initiatives of Local Governments for Promoting Waste Recycling and Eco-town Programs in Japan	Booklet concerning initiatives undertaken by Japanese local governments to promote waste recycling, compiled as part of the FY2011 project to build the Eco-town Environmental Technology Database	PDF	A4/48 pages March 2012
Laws and Support Systems for Promoting Waste Recycling in Japan	Booklet concerning Japanese laws and systems to promote waste recycling, compiled as part of the FY2011 project to build the Eco-town Environmental Technology Database	PDF	A4/52 pages March 2012
Hãy giữ gìn Vịnh Hạ Long xinh đẹp (Protect Beautiful Ha Long Bay)	Environmental education textbook for primary school students at floating primary schools, compiled as part of the FY2011 Grass Roots Technical Assistance Project to Improve the Environment at Ha Long Bay, Vietnam	Booklet PDF	B5/16 pages December 2011 (Vietnamese edition)
Hãy giữ gìn Vịnh Hạ Long xinh đẹp - Tài liệu giảng dạy cho học sinh tiểu học (Dùng cho giáo viên) (Protect Beautiful Ha Long Bay - Primary School Teaching Materials (for Teachers))	Guidelines for teachers for using the environmental education textbook for primary school students at floating primary schools, compiled as part of the FY2011 Grass Roots Technical Assistance Project to Improve the Environment at Ha Long Bay, Vietnam	Booklet PDF	B5/36 pages December 2011 (Vietnamese edition) ²
Trồng Rừng Ngập Mặn Cho Hạ Long Thêm Xanh / Mangrove Planting for the Green of Ha Long Bay	Booklet detailing the importance of mangroves, types of mangroves in Ha Long Bay, and the planting methods used, compiled as part of the FY2011 Grass Roots Technical Assistance Project to Improve the Environment at Ha Long Bay, Vietnam	Booklet PDF	B5/40 pages March 2012 (Vietnamese & English edition) ³

Periodicals in 2011

Publication name	Contents	Format	Size/pages/ date of publication
GEC Newsletter No.30	An introduction to the activities of GEC	Booklet PDF	A4/8 pages October 2011 ⁴
GEC Newsletter No.31	An introduction to the activities of GEC	Booklet PDF	A4/8 pages March 2012 ⁵
Global Environment Centre Foundation Annual Report 2010 (English version)	Report on project of GEC for fiscal year 2010	Booklet PDF	A4/20 pages September 2011 ⁶



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Background of the Establishment

Establishment of the UNEP/DTIE/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.

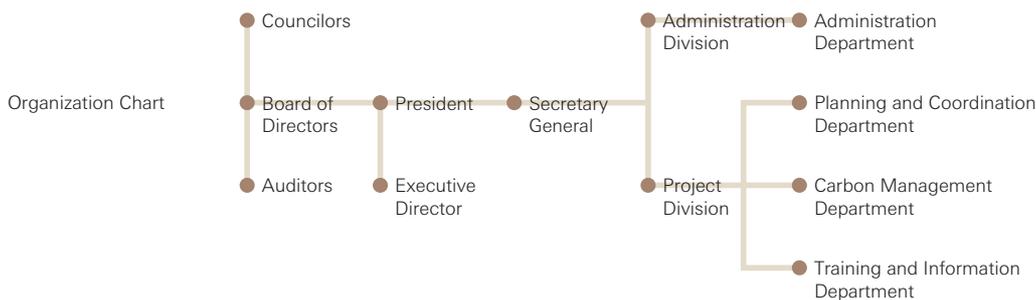
In 2008, GEC subsequently filed an application for change of legal entity from an incorporated foundation to a public interest incorporated foundation on 27 October 2009 in response to the 2008 enforcement of the three laws relating to reform of the public interest corporation system. After receiving 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.

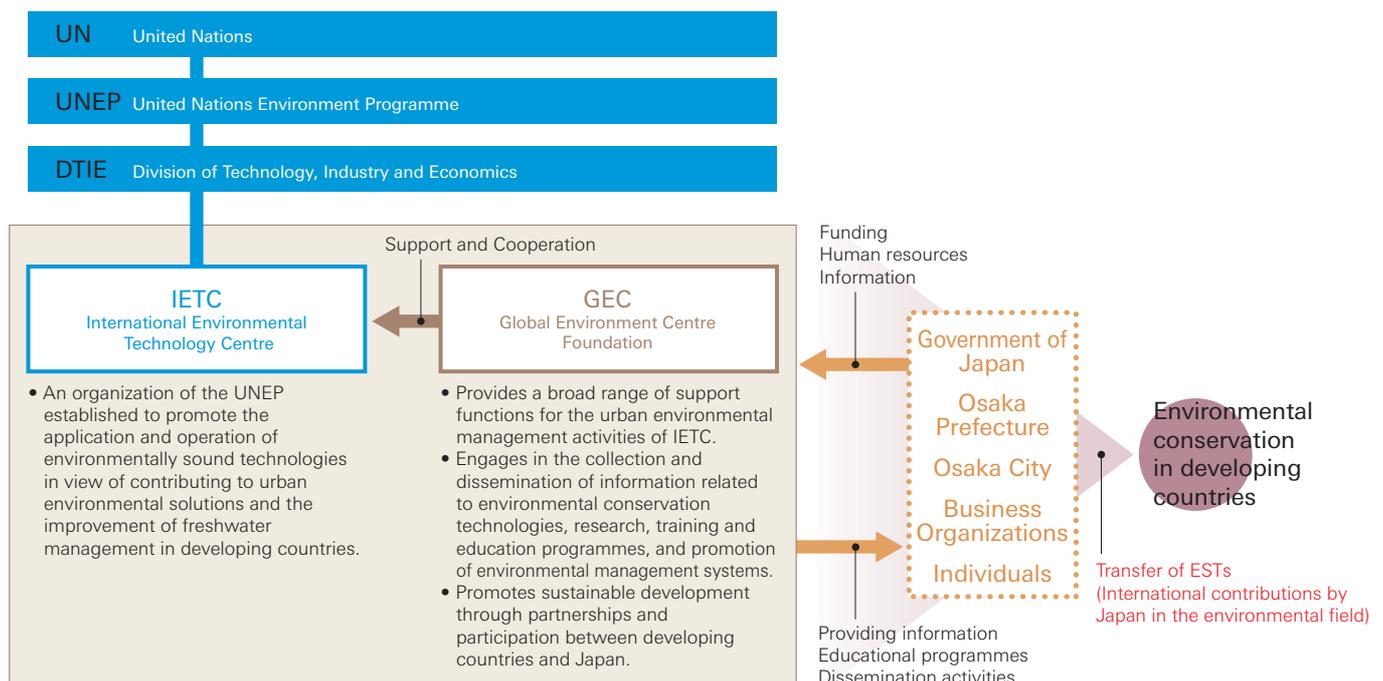
GEC's Activities

In addition to providing various types of support to IETC such as facility sharing and 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	2-110 Ryokuchi-koen, Tsurumi-ku, Osaka 538-0036 Japan Telephone: +81-6-6915-4121 Facsimile: +81-6-6915-0181
Endowments	1,754,160,000 yen
Activities	(1) Projects in support of UNEP/DTIE/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	24



(as of 1 October 2012 / GEC's board of directors is listed on page 24.)



Board Members of the Global Environment Centre Foundation

President	MIYAHARA, Hideo	President, National Institute of Information and Communications Technology
Executive Director	NISHIYAMA, Kenichiro	Former Director General for Environmental Policy, Environment Bureau, Osaka City Government
Directors	FUJIWARA, Yukinori	General Manager, Economic Research Department, Kansai Economic Federation
	HARADA, Tomoyo	Lecturer, Kyoto Seika University
	NAKAGAWA, Masataka	Director, Economy and Industry Division, The Osaka Chamber of Commerce and Industry
	OTSUKI, Yoshinobu SOURI, Norio	Senior Reseracher, Research Institute of Innovative Technology for the Earth Professor Emeritus, Osaka City University
Auditors	IWAMOTO, Kenichi	Certified Tax Accountant
	IWATANI, Motoi	Attorney
Councilors	INOUE, Yuichi	Corporate Auditor, The Kansai Electric Power Co., Inc.
	KAGAJYO, Toshimasa	General Manager, CSR and Environment Department, Osaka Gas Co., Ltd.
	KANEKO, Kumao	Chairperson, Japan Council on Energy & Security
	KATAOKA, Shigehiro	Attorney
	KATAYAMA, Toru	Executive Managing Director, Overseas Environmental Cooperation Center
	MIZUNO, Minoru	Professor Emeritus, Osaka University
	MORIOKA, Toru	Professor, Faculty of Environmental and Urban Engineering, Kansai University (Professor Emeritus, Osaka University)
	OE, Keiko	Senior Executive Director - Environmental Management, Department of Environment, Agriculture, Forestry and Fisheries, Osaka Prefectural Government
	SASAKI, Jyuichiro	Director General, Osaka International Centre of the Japan International Cooperation Agency
	SUZUKI, Yutaka	Director, Institute for Global Environmental Strategies, Kansai Research Centre (Professor Emeritus, Osaka University)
TAMAI, Tokuo	Director General, Environment Bureau, Osaka City Government	

(as of 1 July 2012, 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	Promoting the application of environmentally sound technologies (ESTs) in developing countries and countries in transition. Currently IETC focuses on waste management issues.
Contacts	Osaka Office: 2-110 Ryokuchi-koen, Tsurumi-ku, Osaka 538-0036 Japan tel: +81-6-6915-4581 fax: +81-6-6915-0304 e-mail: ietc@unep.org IETC homepage: http://www.unep.org/ietc
Staff (As of 31 March 2012)	Matthew Gubb, Director Surya Prakash Chandak, Senior Programme Officer Mushtaq Ahmed Memon, Programme Officer Ryuichi Fukuhara, Programme Officer Ainhua Carpintero, Associate Programme Officer John Peter Oosterhoff, Administrative/Fund Management Officer

Special Notes

On 11 March 2011, a magnitude 9.0 earthquake off the north-eastern coast of Japan triggered a series of tsunamis resulting in massive loss of life, environmental devastation and damage to infrastructure. Immediately following the tragedy, IETC coordinated with our Division of Technology, Industry, and Economics (DTIE) in assisting Achim Steiner, UNEP Executive Director to send letters expressing our deepest condolences and offering our full support to the Government of Japan. Since then IETC has been associating closely with concerned UNEP offices and the Ministry of Foreign Affairs of Japan (MOFAJ). A year after the massive earthquake and tsunami struck Tohoku, in collaboration with the MOFAJ, UNEP's IETC and Post-Conflict and Disaster Management Branch organized an international mission to the Japanese region of Tohoku to exchange experience on managing post-disaster debris. The mission visited Tohoku from 27 February to 2 March 2012. Then on 5 March UNEP held a media briefing in Tokyo and a seminar in Osaka on 6 March respectively to disseminate the information widely in Japan. The final mission report is available at http://www.unep.org/pdf/UNEP_Japan_post-tsunami_debris.pdf.

On 1 April 2011 in Nairobi, UNEP Executive Director Achim Steiner and H.E. Mr. Toshihisa Takata, Ambassador Extraordinary and Plenipotentiary of Japan to the Republic of Kenya signed an amended agreement between the Government of Japan and UNEP relating to IETC. Consequently the IETC Shiga Office was closed and IETC was consolidated in one office in Osaka effective 1 April 2011. IETC continues to maintain a close association with its supporting foundation, Global Environment Centre Foundation (GEC), and with the Osaka City Government. In addition, the International Lake Environment Committee (ILEC) in Shiga has begun coordinating with UNEP's Division of Early Warning and Assessment (DEWA) under a new Memorandum of Understanding signed between them.

On 13 October 2011 in Osaka, Matthew Gubb assumed the post of Director of IETC. On taking up the post, he paid a series of courtesy calls on the Government of Japan in Tokyo with the Executive Director of UNEP, and on the Osaka City Government with GEC. During October to December 2011, he also met with potential partners among the UN offices in Japan (ILO, UN ISDR, UNCRD, UNIDO, UNITAR, and UNU). He also initiated a review of IETC's projects and activities in order to develop a plan for a strengthened centre that will serve as a global centre of excellence on the full range of waste management issues.

Progress of implementation on IETC activities

The biennial implementation of the 2010-2011 UNEP Programme of Work (PoW) continued during the period from January to December 2011. This included two projects under UNEP's Resource Efficiency sub-programme, two projects under the Harmful Substances and Hazardous Waste sub-programme, and four other projects where IETC has some implementation responsibilities. Information on IETC's work in 2011 is provided below under two thematic headings, waste management and water and sanitation.



International mission in Tohoku (Sendai)



Final mission report of the International mission in Tohoku – "Managing post-disaster debris: the Japan experience"

Activity report from January 2011 to March 2012

Waste Management

During the 26th regular session of UNEP's Governing Council held in Nairobi from 21 to 24 February 2011, the Governing Council once again emphasized the importance of work being done in the field of waste management and adopted a further decision on the subject. Through this decision 26/3 the Governing Council asked UNEP to further expand its work on integrated solid waste management (ISWM), specific waste streams such as e-waste, and "waste to energy", and to undertake further consultations on its Global Partnership on Waste Management (GPWM).

IETC's work carried out in these areas during 2011 has been integrated into UNEP's sub-programmes and projects as follows;

Resource Efficiency sub-programme

- Technology assessments, technology policy and environmentally sound technologies to empower public and private organizations to advance resource efficiency;
- Policies and tools at the city level – Best practices to improve waste management, water & sanitation and energy efficiency for sustainable urban development;
- Developing the business case for scaling up investment in resource efficient, cleaner and safer technologies.

Harmful Substances and Hazardous Waste sub-programme

- Global Outlook on Harmful Substances and Hazardous Waste;
- Destruction Technologies for Harmful Substances and Hazardous Waste;
- Strengthening implementation and monitoring of the Chemicals and waste MEAs.

In preparation for the nineteenth session of the Commission on Sustainable Development, an Intersessional Conference on Building Partnerships for Moving towards Zero Waste was organized in Tokyo, from 16 to 18 February 2011 by UN DESA, UNCRD and Ministry of the Environment of Japan. IETC represented UNEP for the conference and made a presentation on the GPWM. The draft Chair Summary incorporated the UNEP's proposal of establishing the GPWM.

IETC undertook consultation with governments and other stakeholders on the terms of reference and implementation strategy for the GPWM in line with UNEP Governing Council decision 26/3 on Chemicals and Waste Management. The first consultation was held at the UNEP office in New York on 4 May 2011, and the second consultation was held on 29 and 30 June 2011 at the UNEP/DTIE office in Paris. Based on the suggestions during the consultation meetings a final draft of GPWM framework including implementation strategy was prepared. A working group meeting was held in Vienna on 5 and 6 December 2011 to discuss the work plans for the sponsored focal areas. The six initial focal areas and their "sponsors" or leads are;

1. Waste and Climate Change (International Solid Waste Association-ISWA);
2. Waste agricultural biomass (UNEP/IETC);
3. Integrated solid waste management (UNEP/IETC);
4. E-waste management (UNIDO);
5. Marine Litter (UNEP/Division of Environmental Policy Implementation-DEPI);
6. Waste Minimization (UNEP/IETC).

As secretariat for the GPWM, IETC continued to implement initial tasks for the GPWM. Development of a complementary information platform was initiated to provide a roster for information of waste management projects and activities around the world. Work was also started on mapping of waste management related programmes and activities by international organizations as well as on the assessment of capacity building needs in developing countries.

During the nineteenth session of the Commission on Sustainable Development held in New York from 2 to 13 May 2011, IETC organized a "Learning Centre" or side event on ISWM for an audience of Government and civil society representatives.

IETC continued to work on ISWM demonstration projects for municipalities based on a 3R approach (reduce, reuse, recycle). Projects for Bahir Dar in Ethiopia with UNEP funding and Pathum Thani in Thailand with funding from the Korea International Cooperation Agency (KOICA) were completed. A new project for Addis Ababa in Ethiopia was started with Norwegian funding. Two further new projects in Da Nang in Viet Nam and Kampot in Kingdom of Cambodia are being discussed with local partners under KOICA funding. In the People's Republic of China, the Ministry of Environmental Protection (MEP) has translated ISWM manuals (four volumes) into Chinese to build local capacity on waste characterization and quantification,



Global Partnership on Waste Management consultation meeting

assessment of current waste management system, target setting and identification of stakeholders concerns on ISWM and how to develop ISWM plan.

IETC continued work on demonstration projects under the first phase of the project "Converting Waste Agricultural Biomass into a Resource". Activities were completed in three areas/regions namely Sanghar district (Pakistan), Madhyapur Thimi Municipality (Nepal) and Monaragala district (Sri Lanka) in partnership with the Institute of Environmental Engineering and Management (Mehran University of Engineering and Technology, Pakistan), the Society for Environment and Economic Development (SEED) in Nepal and the National Cleaner Production Centre of Sri Lanka respectively. In all these places technologies were successfully demonstrated and there is a demand for further replication. An activity of Cabiao (Philippines) is being implemented in partnership with the Development Academy of the Philippines. The activities included characterization and quantification (baseline data) of waste agricultural biomass region concerned assessment of current patterns of use and disposal of waste agricultural biomass along with stakeholder's consultation workshops, identification and assessment of suitable technologies for the conversion of waste agricultural biomass into useful energy and finally design/procurement, installation and commissioning. The identification of technologies has been supported by use of the Compendium of Technologies on Converting Waste Agricultural Biomass into a Resource, which was developed by IETC in 2009.

IETC initiated a study on "Converting Waste Oil Palm Trees into a Resource" in partnership with Forest Research Institute, Malaysia. During the reporting period the main activities carried out included preparation of two reports; (a) baseline report on characterization and quantification of waste palm trees with future projections in Malaysia (b) assessment of current waste palm trees management system, practices and utilization at national and local levels.

IETC continued the implementation of the project "Converting Waste Plastics into Fuel" funded by the Government of Japan. The third and last phase of the three-year project involving demonstration activities, is currently taking place. The implementation of the technologies for the conversion of waste plastics into fuel is being undertaken in two cities in Thailand, Nakhon Ratchasima where solid fuel is being produced in the form of Refuse Derived Fuel (RDF) and Phitsanulok, producing liquid fuel. In both cases operation and maintenance plans have been developed and the performance of the technologies is being monitored. In Cebu (Philippines), paper and wood fuel (RPF) is to be produced from plastic refuse. A local manufacturer, as the supplier of the equipment, is currently working on the adaptation of the technology to suit local conditions.

In order to support the project, a workshop on Waste Plastics Management in Developing Countries was organized in cooperation with the National Institute of Advanced Industrial Science and Technology (AIST) from 1 to 4 March 2011, in Tsukuba, Japan. The objective of the workshop was to support the project "Converting Plastic Waste into Fuel" by: (a) bringing together developing countries and technology suppliers to discuss the problems encountered in technology transfer, and (b) bringing together partners from the countries where the project is being implemented to share their experiences and learn from each other.

IETC continued to work on issues relating to waste electrical and electronics equipment (WEEE) and electronic waste. After launching manuals for inventories and management systems, IETC produced a draft manual on "take-back" systems for WEEE and electronic waste management. Subsequently a well-attended training workshop was organized for stakeholders including governments, the private sector, academia and non-governmental organizations leading requests for IETC to continue its work in this field. In the People's Republic of China, the Ministry of Environmental Protection (MEP) translated IETC manuals into Chinese to build local capacity on electronic waste inventories and management systems.

IETC continued to refine its methodology for the assessment of technologies "Sustainable Assessment of Technologies," and is developing manual for further field tests and feedback.

IETC continued its collaborative activities with Kawasaki City, which commenced with the City's first annual Eco-Business Forum in 2005. The 7th Eco-Business Forum was held in Kawasaki on 14 and 15 February 2011 and followed by an International Eco-Tech Trade Fair (16-17 February). The Forum was organized in collaboration with the National Institute of Environmental Studies (NIES). The focus of IETC's collaboration with Kawasaki City is the promotion of "eco-towns" in Asia, with pilot projects being undertaken in Penang, Malaysia, Bandung, Indonesia, and Shenyang, China.

Water and Sanitation

IETC's water and sanitation initiatives have been integrated into the following UNEP's sub-programmes and projects;

Resource Efficiency sub-programme

- Technology assessments, technology policy and environmentally sound technologies to empower public and private organisations to advance resource efficiency;
- Policies and Tools at the City Level: Best practices to improve waste management, water & sanitation and energy efficiency for sustainable urban development;

Ecosystem Management Sub-programme

- Tools and methodologies for assessing and maintaining freshwater ecosystems/ Building capacity to incorporate ecosystem management into development processes.

Important milestone of the Iraqi Marshlands related project was that the national drafting team for the World Heritage nomination was officially appointed by the Iraqi Government. The drafting team is the core to prepare and to finalize the nomination file for the World Heritage Committee to inscribe the Iraqi Marshlands of Mesopotamia as a mixed site. It consists of two sub-teams for natural heritage parts and cultural parts, representing several relevant ministries. From now on, the project's capacity building activities will focus more on strengthening their capacity and skills to formulate the nomination file which should include all necessary components to protect the property in a sustainable way. Key challenges will be to formulate the proper management planning and to identify risk factors and potential actions in accordance with the World Heritage Operational Guideline. The project will continue to provide necessary technical assistance to the team together with our strategic partners. Follow-up tasks associated with the completion of Phases I, II, and III of the Iraqi Marshland project at the end of 2009 were conducted during this reporting period, including the external evaluation.

The Iraqi Marshlands Project evaluation of Phases I, II, and III by UNEP Evaluation Office (UNEP/EOU) was initiated upon the closure of the project. The evaluation was carried out by one international and one Iraqi national consultant. IETC facilitated to collect necessary information and to organize pilot project sites for the overall evaluation. The full final report would be available.

Cooperation with IETC's supporting organizations in Japan

IETC continued collaboration with its supporting foundations, Global Environment Centre Foundation (GEC) in Osaka and International Lake Environment Committee Foundation (ILEC) in Shiga (up until the closure of IETC's Shiga office at the end of March 2011) particularly to increase its visibility both within and outside Japan.

- Together with GEC, IETC participated in the One World Festival in Osaka from 5 to 6 February 2011 to make a panel exhibition and to introduce its programme, projects, and activities to the visitors as well as to cooperate with a quiz rally held at the venue.
- GEC organized two briefing sessions in Shiga and Osaka from 11 to 12 February 2011 for UNEP Special Envoy Ms. Tokiko Kato to share the results of her overseas missions with the public. IETC delivered the opening address at the session in Osaka.
- During the Environment Month in Osaka from 4 to 19 June 2011, IETC exhibited panels on its activities together with GEC and Osaka City Government at the Eco Museum Osaka.
- Together with GEC, IETC participated in the Eco Ennichi (= Festival) Osaka at the Eco Museum Osaka from 11 to 12 June 2011 to make panels exhibition and to introduce its programme, project and activities to the visitors as well as to hold quiz games on IETC, GEC, and environment.
- Together with GEC, IETC attended the Osaka Tsurumi ward's 37th Tsurumi Kumin Matsuri (= Festival) on 11 September 2011 and made joint panels exhibition to "support Tohoku" that was the festival's main theme.
- Together with GEC, IETC made panels exhibition for the Osaka City's international symposium on biodiversity at the Osaka Museum of Natural History on 23 October 2011 and new IETC Director's message was presented by GEC Executive Director on his behalf.
- Together with GEC, IETC participated the Eco Art Festa Osaka 2011 organized by Osaka City at Osaka Port Tempozan Harbor Village from 29 to 30 October 2011 to provide the participants with the information on environmental conservation, especial on waste management.



Eco Art Festa Osaka 2011

Other Activities

- UN Agencies in Japan jointly organized an International Women's Day event in Tokyo on 8 March 2011 and IETC provided information materials for display.
- To commemorate the World Environment Day 2011, an Osaka-based radio station (FM COCOLO) broadcasted a special programme on UNEP and UNEP in association with the World Environment Day together with the topics on International Year of Forests and UNEP Billion Tree Campaign on 5 June 2011.
- IETC Director attended the UN Day@Tohoku event at the Tohoku University in Sendai, Miyagi prefecture on 24 October 2011, organized by UNIC Tokyo with the concerned UN offices in Japan to show UNEP's respect to the commemoration of the earthquake and tsunami suffered by the Tohoku region in March 2011.

Global Environment Centre Foundation Annual Report 2011

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