



Global Environment Centre Foundation

Annual Report 2003

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Foreword

At the 2002 Johannesburg Summit, representatives of nations from around the world agreed to the Johannesburg Declaration on Sustainable Development and the Plan of Implementation, a comprehensive set of action policies, in order to address global environmental issues at the advent of the 21st Century.

Meanwhile, in its first revision in 11 years, Japan's Official Development Assistance (ODA) Charter also highlighted the environment as a key issue to which Japan needs to contribute.

Against this backdrop, the Global Environment Centre Foundation (GEC) believes that technology transfer and the development of human resources are key concepts in realizing sustainable development and achieving a balance between the environment and development.

The Clean Development Mechanism (CDM) is one of the measures of the Kyoto Mechanisms which acts as a framework for the promotion of technology transfer to counteract global warming. GEC, under the commission of Japan's Ministry of the Environment, is expanding feasibility studies of CDM/JI projects which contribute to sustainable development in developing countries through the utilization of technology from industrial countries, in addition to contributing to the reduction of greenhouse gas emissions in industrial countries.

In the area of human resource development, GEC now offers a wider range of JICA training programs capable of delivering a more detailed curriculum responsive to the needs of its participants, while expanding the participant network and striving to maintain communication with them and provide new information even after their return to their own countries.

At the same time, GEC is applying these training programs to improve all operational aspects of its own foundation as well as those of the International Environmental Technology Centre (IETC), a part of the United Nations Environment Programme (UNEP)'s Division of Technology, Industry and Economics (DTIE).

This year IETC marks a turning point with the tenth anniversary of its inception, and aims to roll out even more new projects. We here at GEC would like to support IETC's efforts and contribute to the conservation of the global environment while drawing upon the cooperation of our affiliated institutions and all members of the public.

It is our hope that, through this annual report, we are able to foster an understanding of GEC activities, and that we may look forward to your continued support and cooperation in the future.



October 2004

A handwritten signature in black ink that reads "N. Kumagai". The signature is written in a cursive, flowing style.

KUMAGAI, Nobuaki

President

Global Environment Centre Foundation

Background of the Establishment

Establishment of the UNEP/DTIE/International Environmental Technology Centre

In the 1960s, in conjunction with rapid industrialization, the city of Osaka suffered from several unprecedented environmental problems. Enormous infrastructure improvements and development of environmental technologies were subsequently achieved through cooperation between municipal government and industry. In hopes of extending these benefits beyond its borders, the Osaka City Government has been working to help alleviate environmental problems in developing countries.

With this background, in August 1989, Mr. Masaya Nishio, Mayor of Osaka, announced a plan to attract an international environmental organization to the city in order to disseminate and apply Osaka's successful experience with urban environmental management. This plan was announced in accordance with the spirit of the International Garden and Greenery Exposition held in Osaka in 1990. Following the mayor's announcement and with the support of the national Japanese government, the Osaka Prefectural Government, and business organizations in the region, Osaka Mayor Nishio officially handed a request to Dr. Mostafa K. Tolba, then Executive Director of the United Nations Environment Programme (UNEP), while he was visiting Japan.

The result was that, in July 1990, at a summit of developed nations in Houston, USA, Prime Minister Toshiki Kaifu announced the plan of setting the UNEP facilities up in Japan. In August of the same year, Mr. Naohiro Kumagai, then Japan's ambassador to Kenya, proposed to the 2nd Special Meeting of the UNEP Governing Council that a center be set up in Japan in view of the increasing importance of environmental technology transfer to achievement of sustainable development. In May of the following year, a resolution to establish the UNEP/DTIE/International Environmental Technology Centre (IETC) whose mandate is 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. Official establishment of IETC was completed in October 1992 in Osaka when UNEP Executive Director Tolba and Parliamentary Vice-Minister for Foreign Affairs Kakizawa signed an official agreement marking the founding of IETC.

- Note: all titles are effective as of the years mentioned here.

Establishment of the Global Environment Centre Foundation

After official approval in 1991 by the UNEP Governing Council to set up the IETC in Japan, the Osaka City Government formed an IETC Osaka Planning Office on July 3, 1991. The purpose of the office was to carry out planning and create a network of support for the proposed center. Following initial preparation by the Planning Office, capital endowment was received from the Osaka prefectural and city governments. The establishment of the Global Environment Centre Foundation (GEC) was carried out on January 28, 1992 with the expressed purpose of supporting IETC. GEC, a nonprofit organization, obtains support from the local business sector.

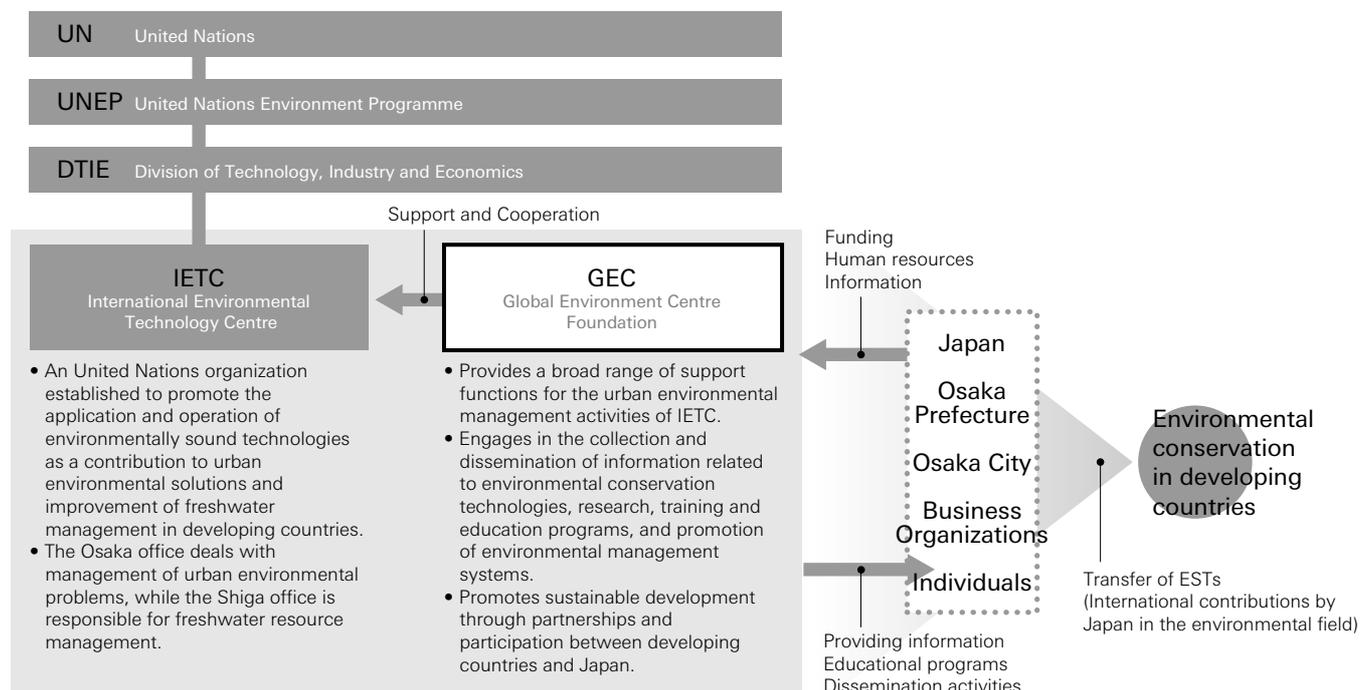
GEC provides logistical support to IETC Osaka and collaborates with IETC on joint projects. It also acts as a liaison between environmental organizations in Japan and the IETC. In this way, it helps to ensure the IETC's smooth and efficient operation. In addition, GEC promotes environmental conservation through original projects such as the collection and dissemination of environmental technological information, training programs, seminars and symposia, as well as research.

Thus, in all of these ways, GEC's activities make a significant international contribution by Japan in the environmental field.

Mission and Objectives

GEC was established to make use of the abundant accumulation of knowledge and experience in Japan in the field of environmental conservation. In particular, it makes use of knowledgeable groups and individuals in the Kansai region in order to support contributions of IETC in the field of urban environmental management in developing countries. Thus, GEC promotes international cooperation around environmental conservation, and aims to make meaningful, practical contributions to the protection of the global environment.

Name	Global Environment Centre Foundation (GEC)
Date of Establishment	January 28, 1992
Supervisory Authorities	The Ministry of Foreign Affairs of Japan The Ministry of the Environment 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	1,738,110,000 yen (as of March 31, 2004)
Activities	<ol style="list-style-type: none"> (1) Providing general support for activities of UNEP relating to urban environmental conservation in developing countries (2) Undertaking research which contributes to the conservation of the global environment, with particular emphasis upon urban environmental management in developing countries (3) Collection and dissemination of information which contributes to the conservation of the global environment, with particular emphasis upon urban environmental management in developing countries (4) Conducting of training programs, seminars, and symposia which contribute to conservation of the global environment, with particular focus upon urban environmental management in developing countries (5) Facilitating communications with international organizations, governmental organizations, and research organizations in various countries, in order to contribute to conservation of the global environment (6) Any other activities necessary to achieve the mission of GEC
Number of Staff	17 (as of September 1, 2004)



Activities in Fiscal Year 2003

As a part of our collaborative efforts with IETC, GEC has supported in the formation of EST guidelines since 2001. In 2003, GEC conducted a review of IETC's proposed generic criteria and summarized our findings with an eye to highlighting potential issues and areas for improvement. GEC has also been working to enhance IETC databases. Specifically, we have expanded our NETT 21 Japanese environmental technology database system.

The activities of UNEP Special Envoy Ms. Tokiko Kato included a visit to the Republic of Uzbekistan and the Kyrgyz Republic in May, and a visit to the Republic of Fiji Island and the Kingdom of Tonga in September. GEC has also been implementing dissemination and awareness raising activities towards environmental conservation in the municipality of Lamphun, Thailand since 2001, and we have lent our support to the first local "Eco Festival" in 2003.

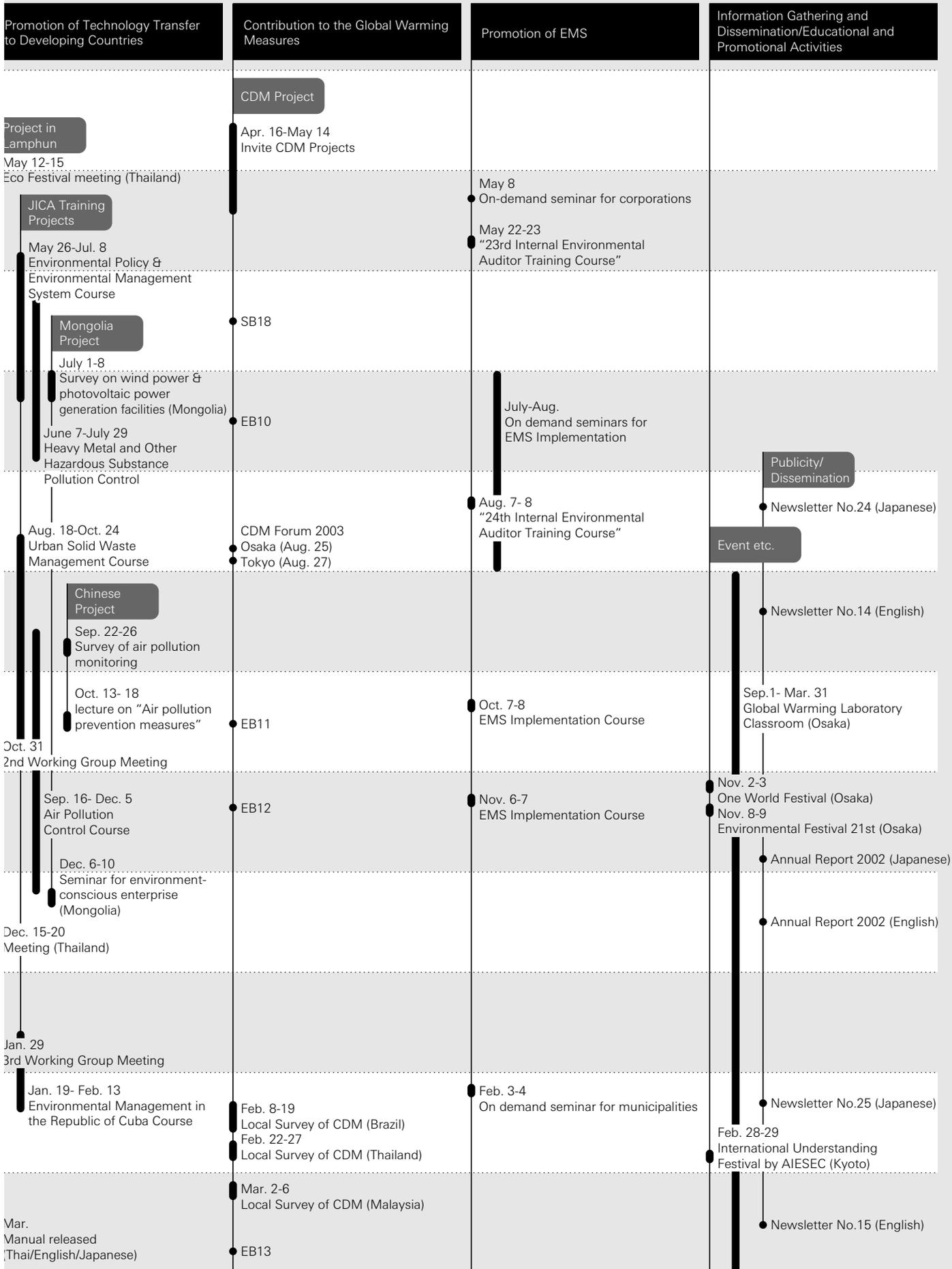
GEC also cooperated in promoting air quality improvement activities in Henan Province, China. We also held a "Seminar for environmentally conscious-enterprise" in Mongolia with collaboration to other organizations. GEC has continued to organize five JICA training courses.

In addition, GEC has engaged in promoting the "Networking Project" for former JICA training participants since 1998, which includes operation of the Internet-based "GEC Information Board". Through this project, we succeeded in building upon our information pipeline with former training course participants.

In 2003, GEC continues to have Feasibility Studies on the Clean Development Mechanism (CDM)/Joint Implementation (JI) Project as part of its ongoing efforts to address global warming. We participated in the 18th Session of the Subsidiary Bodies (SB18) held in Bonn, Germany, by hosting a side event together with the Japan's Ministry of the Environment and gathering information on the CDM Executive Board and others. GEC's work on Environmental Management Systems (EMS) included the implementation and content-enhancement of the "Internal Environmental Auditor Training Course".

We have also been striving to boost public relations and promote cooperation for the global environment through several measures such as our support for the "Global Warming Laboratory Classroom" project.

	International Conference/Event	Projects Supporting IETC
April, 2003		
May	May 12-20 "World PV Epoch in Osaka"	UNEP Special Envoy May 13-24 Uzbekistan, Kyrgyztan
June		June 2-7 - Eco Festiv (Thailand)
July		July 23 - 1st Workir Group Meeting
August		
September		Sep. 8-18 Fiji, Tonga
October		
November		IETC
December	Dec. 1-12 "COP9" (Italy)	Dec. 3 Attending IAB (Shiga) Dec. 4 EST Expert Meeting
January, 2004		
February		NETT21
March		Mar. Posting "Energy-Saving Technology at Business-Related Buildings"



Providing Facilities and Equipment

GEC provided office space and equipment for UNEP/DTIE/IETC Osaka

Information Gathering and Dissemination/Educational and PR Activities

1 Promoting the Dissemination of Information and Technology Transfer of Environmentally Sound Technology (EST)

Joint Project for Development of Guidelines on ESTs

In 2001, IETC began promoting the following projects under the "EST Initiative" in order to encourage the transfer to and dissemination of ESTs in developing countries.

Project	Description
Development of "EST Guidelines"	Assisting decision makers in developing countries to identify and select ESTs
Formulation of "ESTPA Guidelines"	Establishing a system for the assessment of ESTs including verification by third party institutions, and formulating guidelines for its usage
Consolidation, expansion and development of maESTro and ESTIS	 Upgrading access to and expanding the information on the maESTro database and EST information system, valuable tools in promoting EST transfer

In 2001, GEC assembled a panel of experts to address these issues and promote EST initiatives in cooperation with IETC. In 2003 GEC then consulted with the panel to examine the EST generic criteria put forward by the IETC and summarize the findings of its three-year investigation. These findings will form the basis for a workshop symposium on ESTs and Environmental Urban Management to be jointly hosted with the IETC in 2004.

Maintenance and Expansion of GEC and IETC Information Systems

GEC expanded NETT 21 in 2003 by adding a support tool to its database on "Energy Saving Technologies for Business-related Buildings". The support tool provides useful information to those who lack an intimate knowledge of building service technology on how to go about making buildings more energy efficient. GEC is also researching the information needs of developing countries in this field.

2 Support of IETC Projects

Waste Management

In 2003 GEC and IETC agreed to collaborate on the promotion of waste management in the Asia Pacific region under an IETC-proposed framework on integrated waste management. We will now hold discussions with IETC in order to formulate specific plans of action.

Water for cities

In concert with IETC, GEC commenced publication of an introductory guide on water and the reuse of wastewater for policy makers in developing countries in addition to examining the launch of a web site on sanitation.

Dissemination and Promotion of EMS

GEC has helped to spread IETC policies by providing its staff with the opportunity to present lectures in our JICA training courses.

EST (Environmentally Sound Technology)

ESTs are defined in Agenda 21 of the WSSD as technologies which "protect the environment, are less polluting, use all resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than the technologies for which they are substitutes".

maESTro

IETC's Information System (IS) to facilitate the efficient acquisition and distribution of ESTs from all over the globe

ESTIS

an IS management tool to assist the transfer of ESTs

NETT 21

(New Environmental Technology Transfer in the 21st Century)

a database developed by GEC from 1994 onward to disseminate information on Japan's environmental technologies for the purpose of promoting EST transfer in developing countries.

Waste Management

The waste dump collapse incident in the Philippines in 2000 prompted ASEAN to acknowledge the adverse affects of waste on all environments in the region.

Water for cities

GEC called upon the expertise of the Public Works Research Institute and the Osaka City government's Environment and Sewerage Bureau in drafting the introductory guide, which it plans to publish later in 2004.

IETC Collaboration at The 3rd World Water Forum (WWF3)

GEC dispatched personnel from 26 November 2002 until the end of April 2003 in order to provide support to the IETC in hosting a UNEP session (subcommittee meeting) and "special side event" at WWF3, which was convened from 16 to 23 March 2003.

Other Activities

UNEP Special Envoy's Activities

On 30 October 2000, UNEP nominated the renowned singer, Ms. Tokiko Kato, as its Special Envoy. Ms. Kato is responsible for visiting areas of environmental interest both in Japan and abroad, encouraging the work of affiliates and NGOs and raising environmental awareness through the media. GEC has been commissioned by the Japan's Ministry of the Environment to support UNEP envoy's activities by planning, attending and recording these visits, drafting press releases and so on.



Planting mangroves in Fiji

From 13 to 24 May 2003, Ms. Kato visited the Republic of Uzbekistan and the Kyrgyz Republic in Central Asia, where she observed the Aral Sea, the site of what has been described as the "largest environmental issue of the twentieth century".

Ms. Kato also visited the Republic of the Fiji Islands and the Kingdom of Tonga from 8 to 18 September. During the visit, she observed the community approach to dealing with issues common to both countries including waste management, conservation of the coastline and protection and utilization of marine resources, and encouraged all those involved.

Activities Highlights of Ms. Kato, UNEP Special Envoy

30 October 2000	Appointed as UNEP Special Envoy
17 – 27 April 2001	Visit to Thailand and Indonesia
10 – 19 August 2001	Visit to Mongolia
6 – 13 April 2002	Visit to Korea
2 – 4 June 2002	Attended the "WSSD PrepCom 4 Meeting" on sustainable development in Bali, Indonesia
22 – 31 August 2002	Attended and held a concert at "WSSD" held in Johannesburg, South Africa

WCPEC-3 Exhibition

Osaka (14 -18 May 2003)

IETC marked its attendance at the "WCPEC-3 Exhibition" with a display booth focusing not only on photovoltaic power as a means of conserving energy, but also on ESTs as a way of promoting "sustainable construction" in urban areas. GEC was also present at the exhibition with a panel display within the Osaka Prefectural Government's stand introducing our building's energy systems.

One World Festival

Osaka (2-3 November 2003)

GEC participated in this festival by collaborating with both IETC and ILEC to operate an exhibition booth and provide information on the activities of each of our organizations.

The 6th IETC International Advisory Board

Shiga (3 December 2003)

GEC attended as a member of the board.



Aral Sea

Admired as one of the world's largest fresh-water lakes in 1960, the spread of irrigation farming has caused the Aral Sea's water level to drop dramatically to one seventh its former size and its area to shrink to one third, while its salt concentration has risen to 7.2%.

World PV Epoch (WCPEC-3)

This global event was inaugurated with the aim of encouraging the spread and expansion of photovoltaic energy systems. The event consisted of three parts; an academic discussion on the latest PV technology, an exhibit of PV systems from around the world and a discussion on dissemination and expansion.

One World Festival

Based on the theme "Things we can do in the 21st Century to make the world a place where we can live together", the One World Festival is jointly hosted by NGOs, government agencies and private enterprise as a way of promoting international cooperation under the tenets of 'look, listen and understand'.

International Advisory Board (IAB)

Constituted on the basis of an agreement between the Japanese Government and UNEP, this board deliberates on the budget, projects and other related matters.

Survey and Research Projects

UNFCCC (United Nation Framework Convention on Climate Change)

The UNFCCC came into effect in 1994 as a vehicle for international efforts against global warming. The convention aims to establish standards to contain mankind's detrimental effect on the earth's climate and stabilize the concentration of greenhouse gases in the atmosphere.

COP (Conference of the Parties)

The annual conference of the supreme decision-making authorities of the Parties to the UNFCCC.

CDM EB (CDM Executive Board)

Convened 6 times a year, the EB is the supervisory body for the CDM, responsible for authorizing baseline and monitoring methodologies and guidelines.

SB (Subsidiary Bodies)

Established as advisory bodies to the COP, there are two SBs; the SBSTA (Subsidiary Body for Scientific and Technological Advice) and the SBI (Subsidiary Body for Implementation).

CDM/JI Feasibility Studies Adopted in Fiscal 2003

Summary reports of the CDM/JI feasibility studies are available on the GEC web site.

Feasibility Studies on Climate Change Mitigation Projects for CDM and JI

GEC has served as Secretariat for the Feasibility Studies on the CDM/JI Projects since being commissioned by the Ministry of the Environment of Japan in 1999. In this role as Secretariat, GEC has worked to accumulate knowledge in order to unearth viable CDM projects and establish guidelines for their implementation.

In 2003, GEC selected 20 feasibility studies and published the findings on the Centre's web site in the form of a database.

Gathering and Providing Information on International Conferences in 2003

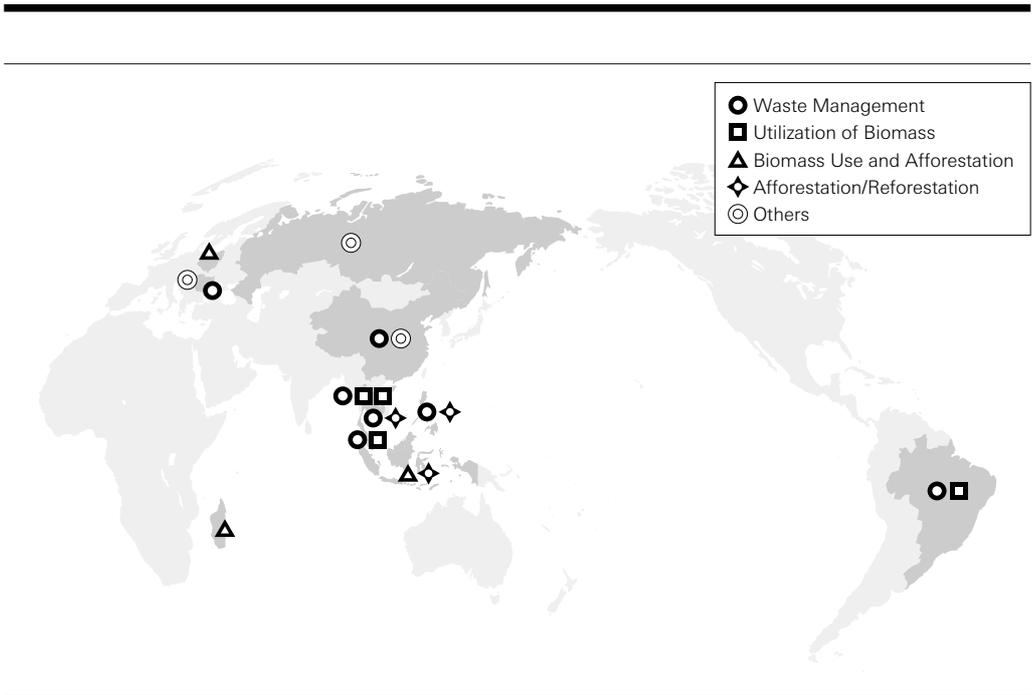
Much global attention is currently being devoted to approving baseline & monitoring methodologies and establishing detailed rules for CDM projects. Therefore, the acquisition of knowledge on these issues is an essential part of supporting CDM project efforts. In SB18 held in Bonn, Germany in June 2003, GEC co-presented a "side event" on CDM sink with the Japan's Ministry of the Environment. We were also involved in the CDM Executive Board meeting at COP9 held in Milan, Italy in December of the same year. These events provided GEC with a valuable opportunity to both collect and provide information on the international stage.



COP9

Overview of Feasibility Studies on Climate Change Mitigation Projects for CDM/JI in 2003

Category	Project	Country
Waste Management	Landfill gas to electricity project	Thailand (Nontaburi province)
	Utilization of biogas generated from methane fermentation of organic wastes	China (Dalian)
	Extraction and utilization of CH ₄ Gas from landfill	Rumania (Timisoara)
	Carbon credits from landfill gas capture and electricity generation	Brazil (Sao Paulo)
	Landfill methane gas reduction project utilizing composting technology for solid waste treatment	Malaysia (Johor Baharu)
	Reduction of GHG and energy utilization project by collection of landfill gas generated at a disposal site	Cambodia (Phnom Penh)
	Landfill gas recovery and gas to power plant project	the Philippines (Metro Manila)
Utilization of Biomass	Effective use of palm biomass for value-added products via CDM	Malaysia (Negeri Sembilan province)
	Cogeneration business utilizing bagasse and rice husks	Thailand (Ratchaburi province)
	Sugar industry waste-to-energy project	Brazil (Sao Paulo State)
	Research of biodiesel production project using sunflower as resource crops	Thailand
Biomass Use and Afforestation	Renewable biomass plantation	Madagascar (Toamasina province)
	Fuel conversion of existing heat supply plants from coal to biomass provided by willow afforestation	Poland (Elblag)
	Reforestation/afforestation and biomass energy projects	Indonesia (East Kalimantan Province, East Java Province, Central Java Province)
Afforestation/ Reforestation	NGO participatory forestation project	the Philippines
	Participatory reforestation CDM for land rehabilitation	Indonesia (Lombok Island)
	CDM rubber tree plantation project	Cambodia (Mondul Kiri highlands)
Others	Study of CDM commercialization of hydrochlorofluorocarbon discharged from semiconductor plant	China (Shanghai)
	Fundamental study on introduction and application of geothermal heat pump systems to district heating	Russia (Irkutsk)
	Wind power generation including financial study	Hungary (Mosonmagyaróvár)



Local Surveys of CDM Studies in 2003

- Feasibility Study on landfill gas capture and power generation project in Brazil (8-19 February) and in Thailand (22-27 February)
- Feasibility Study on landfill gas reduction by utilizing composting technology project in Malaysia (2-6 March)

Establishment of the Osaka CDM Network

In order to promote the active participation of companies located in the Kansai region, GEC set up the "Osaka CDM Network" in February 2004 in coordination with the Environment ISO Group of Kansai Branch, OISCA and the Business Innovation Center Osaka. The Network provides a constructive forum for seminars and other activities. GEC is calling upon the expertise of an advisory board formed by academics, government bodies and public interest groups in order to address the issues with which the participating firms are faced.

Study on New Energy Systems

GEC is continuing its work of managing and collecting data obtained from the solar power generator installed atop the roof of the GEC office building and other equipment in an attempt to verify the demonstration facility as a new energy system.

CDM Forum 2003

see page 15 for details

Osaka CDM Network

As of the end of October, membership of the Network stands at 22 companies.

With the Osaka CDM Network Project, we are seeking out potential CDM/JI projects from a wide range of countries.

Electric sign board of GEC's building energy system

GEC's facilities are powered by new energies. Information on the status of these energy systems is constantly available via panel displays.





Solar Power generation panels installed on the roof of the GEC Centre

The Tsurumi Refuse Incineration Plant



Air pollution caused by coal-fired power plant emissions (Henan Province)

Project Survey of Air Pollution Reduction in Henan Province in China

In China, where economic growth is the highest of all developing countries, urgent measures are required to counteract ever-worsening air pollution caused by sulfur dioxide (SO₂) and other elements due to the use of coal as a major energy resource. In 2002, the Japan Bank for International Cooperation (JBIC) adopted the ODA project to introduce natural gas to the Henan Province in an attempt to mitigate air pollution.



A personnel training course (China)

GEC, tapped by JBIC to ensure the project would be properly implemented, carried out an on-site survey in cooperation with the Osaka Prefectural and City governments.

GEC also conducted a survey on air pollution monitoring from 22 to 26 September 2003, the results of which are reflected in a training textbook which it published in Chinese. Our staff presented lectures from 13 to 18 October on air concentration monitoring and forecasting and air pollution prevention measures to Environment Bureau staff members of the Henan Province government and its 18 cities including the capital Zhengzhou, in addition to providing advice on air pollution reduction policies.

Survey of small-scale wind power and photovoltaic power generation systems in Mongolia

In 2002, GEC launched the "GEC Environment Project Development Study Group" consisting of private industry experts, entrepreneurs and GEC staff members to assist developing countries with environmental technology. As its first project, the study group conducted a survey of small-scale wind power and photovoltaic power generation facilities in Mongolia from 1 to 8 July 2003.



Group discussion in the seminar (Mongolia)

The goal of the project was a field survey aimed at developing and disseminating small-scale hybrid wind power and photovoltaic power generators suitable for nomadic life in Mongolia. The survey revealed that inexpensive products made in China have already been introduced in Mongolia, thus the need for new generators is not a pressing issue. The survey therefore highlighted future concerns, such as the need for rechargeable batteries and other peripheral equipment, waste exchange measures, upgrading production and distribution of portable generators and fostering environmentally-conscious entrepreneurs.

Together with the Japan International Cooperation Agency (JICA) and the Pacific Resource Exchange Center (PREX), GEC planned the "Seminar for Environmentally-conscious Enterprise", which was hosted by the Mongolia-Japan Center from 6 to 10 December 2003. Members of the Environment Project Development Study Group joined this seminar and presented lectures to local business people.

The seminar garnered a high level of interest from participants and sparked a vigorous exchange of opinions. Participants also formulated and discussed a business program to encourage environmentally-conscious enterprise.

GEC is eager to see projects which promote environmentally-conscious enterprise come to fruition and hopes to provide assistance in the area of environmental technology.

Pacific Resource

Exchange Center (PREX)

Since its founding in 1990, PREX has worked to promote Human Resource Development for government officials and executive managers in the Asia Pacific regions as well as Central Asia, Africa etc.

Mongolia-Japan Center

Located in Ulan Bator and funded by grant aid from the Japanese government, the Mongolia-Japan Center was inaugurated in 2002 with the aim of becoming a hub for information exchange between the two nations to contribute to Mongolia's nation building and human resource development.

Promotion of Environmental Conservation in Thailand

Since 1998, GEC has promoted the transfer of technology of a wastewater treatment facility to the Kuang River, which flows through the city of Lamphun in northern Thailand. Since that time we have been aware of the importance of enhancing the environmental consciousness of the local residents in order to solve the river's water contamination issues, culminating in the start of the relocation project in 2001.



GEC's booth at the Eco Festival

The Centre also backed the Eco Festival held in Lamphun City on 5 June 2003. The event featured a wide range of activities to raise environmental awareness including 22 exhibition booths, an environmental quiz, theatrical play and a bicycle race for elementary school students which attracted 5,000 participants. We participated in the booth exhibition, together with members from the Osaka-based Onji River Network Committee.

GEC also promoted the expansion of a "river basin partnership network", encouraging the joint participation of the Chiang Mai University and published the second edition of the "Manual for Environmental Preservation Activities Focused on Rivers" in Thai, English and Japanese taking account of the opinions and feedback of Thai participants.



Kuang River

Evaluating the Lamphun Project

When the project first began, the majority of proposals flowed from the Japanese side. However, three years later the role of the Japanese participants had transformed to one of promoting the activities initiated by the local citizens. This project proved to be a significant learning experience for us, led to a relationship conducive to better activities between the two countries, expanded the Kuang River network, and bolstered the environmental activism of Lamphun's residents.

In the future, we hope that this environmental awareness will take root among the Lamphun's local residents by use of the manual and other tools, and in doing so, advance the area's environmental conservation activities.

Promotion of Environmental Management Systems (EMS)

• EMS Training Courses

In October 2003, GEC brought to a close the "Environmental Auditor Formal Training Course" and the "Environmental Auditor Refresher Course" eight years after their inception in 1995. GEC then held the "Internal Environmental Auditor Training Course", twice in the same year. We also commenced "on-demand seminars" at the commission of private enterprise and municipalities which were also conducted twice. We intend to continue offering these training courses to enhance the spread of environmental management systems more than ever before.

• EMS Human Resource (HR) Training Seminar

GEC held human resource training seminars on EMS certification and management as well as working with other institutions to convene similar HR seminars.

• Overseas EMS dissemination (JICA Project)

Among the five JICA courses it currently offers, GEC has upgraded its EMS lectures to facilitate the spread of EMS overseas. In particular, GEC has initiated a six-day "Environmental Policy and Environmental Management System Course" which uses texts approved by the UK-based Institute of Environmental Management and Assessment (IEMA). We have also undertaken efforts to formulate curriculum for the EMS-related lectures of our other JICA training courses.

• EMS Implementation in GEC

In July 2001 GEC began operating Environmental Management Systems within our office with a view to alleviating the environmental burden generated in the workplace, an initiative that continues unabated today.

EMS Training Courses

Low enrolment numbers and the dramatic increase in training institutions are the major reasons behind the course closures.

Number of Enrolments from Course commencement in 1995 to its termination in October 2003

- Environmental Auditor Formal Training Course: 397
- Environmental Auditor Refresher Course: 71

Information Gathering and Dissemination/Educational and PR Activities

PR Activities

GEC publishes newsletters and annual reports in Japanese and English and distributes them to affiliated organizations in order to introduce our activities to a wider audience, while our web site also offers details of our past, present and future projects.

Co-Sponsorship of the Global Warming Classroom Laboratory

As one aspect of our public awareness efforts, GEC has been proud to support the "Global Warming Classroom Laboratory" program, which was implemented in 2003 in Osaka prefectural primary schools by the NPO Osaka Environmental Counselors Association (OECA). The program was carried out in 12 primary schools with the participation of some 717 students, and also served as a forum to acquaint the students with the work of GEC and IETC.

Support for the Global Warming Classroom Laboratory

Targeted at primary and junior high school students and presented during their integrated study period, this project utilized hand-made instruments to deepen the student's awareness of ways to prevent global warming and teach them about the whys and wherefores of energy consumption and environmental warming.



the Global Warming Classroom Laboratory



Library Use

The library is open for use on weekdays from 1:30pm to 17:00pm by prior booking. As of August 2004, books can only be viewed and copied within the confines of the library.

Environmental Festival 21st

Held by the Osaka Prefectural Government to promote understanding and awareness among its citizens and enterprises towards the creation of a recycling-oriented society and a better environment.

The Festival for International Understanding

Hosted by Kyoto University's AIESEC Committee and Kyoto Youth Service Association, and the festival features a wide range of content including seminars on international cooperation and environmental issues as well as exhibitions operated by JICA, UNICEF and various NGOs.

Upkeep of the Global Environment Library

GEC opened its library on global environmental issues to the public in 1997 (some limits on use apply). The library caters to experts by offering a range of publications on the environment and particularly UNEP-related materials, which the Centre is continuously working to expand. The adjoining "Eco Museum of Osaka" is an environmental education facility featuring an athenaeum which houses the entire library catalog, thereby linking the two structures and streamlining their management. Materials on our commissioned projects and other reports are also catalogued and arranged for easy reference.

Environmental Festival 21st

Osaka (8-9 November 2003)

GEC took the opportunity presented by "Environmental Festival 21st" to introduce its activities to the public by presenting an exhibition booth and panel display and distributing copies of its publications.

Festival for International Understanding by AIESEC

Kyoto (28-29 February 2004)

This festival enabled GEC to showcase its exhibition under the theme "International Cooperation and the Environment" and to familiarize participants with GEC's work focusing on our environmental projects in developing countries.

Training Courses

The Japan International Cooperation Agency (JICA) Group Training Project

Commissioned by JICA, GEC continues to organize four training courses targeting administrative officials and engineers in developing countries. GEC also organized a training course entitled “Environmental Management in the Republic of Cuba” which started from 19 January to 13 February 2004. Participants must present their “Country Report” at the start of the session and an “Action Plan” at the end of training in all training courses.

Training period	Nationality of participants	Main course contents:
JICA Training Course on Heavy Metal and Other Hazardous Substance Pollution Control		
June 7 - July 29, 2003	Bangladesh (2), Brazil, Egypt, Indonesia, Thailand	<ul style="list-style-type: none"> •Lectures <ul style="list-style-type: none"> - Introduction to heavy metal pollution - Air and water pollution control measure etc. •Practical training <ul style="list-style-type: none"> - Sampling and analysis of air and water - Analysis of heavy metals in soil/waste etc. •Facility tours <ul style="list-style-type: none"> - Refuse incineration plant - Sewage treatment plant/water purification plant etc. Purpose: to develop well-qualified human resources who are able to collectively evaluate emission sources and environmental contamination by poisonous metals and harmful chemical substances, and to establish preventive measures against environmental pollution by poisonous metals etc.
 <p>A training lecture at the National Institute for Minamata Disease</p>		
JICA Training Course on Environmental Policy and Environmental Management Systems		
May 26 - July 8, 2003	Chile, Guyana, Nepal, Philippines (2)	<ul style="list-style-type: none"> •Lectures/Discussion/Tours <ul style="list-style-type: none"> - Global environmental preservation and sustainable development - International initiatives to protect the environment - Joint action by governments, industry and citizens etc. Purpose: to master pragmatic and practical methodologies, such as the framing of environmental policies, techniques of environmental assessment, guiding corporation policies, and methods of enlightening citizens.
 <p>Opening Ceremony</p>		
JICA Training Course on Urban Solid Waste Management		
August 18 - October 24, 2003	Cambodia, Costa Rica, Egypt, India, Indonesia, Jordan, Paraguay, Philippines, Senegal, Uruguay, Yemen	<ul style="list-style-type: none"> •Lectures <ul style="list-style-type: none"> - Outline of waste management - Processing of domestic/industrial wastes etc. •Practical training <ul style="list-style-type: none"> - Analysis of composition of waste - Practice in designing a landfill site etc. •Facility tours <ul style="list-style-type: none"> - Recycling plant, Final disposal sites etc. Purpose: 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>A training lecture at the JICA Osaka Centre</p>		

Country Report

A report prepared by each participant describing the environmental administration system, environmental situation and other related issues in his or her country.

Action Plan

When the training is over, each participant works out measures for environmental improvement in his or her country based on the findings and competence acquired through the training.

JICA Training Course on Heavy Metal and Other Hazardous Substance Pollution Control

This course was originally launched in 1996 as the “JICA Training Course on Heavy Metal Pollution Control” but changed to its current name in 2002 to reflect its newly expanded curriculum.

JICA Training Course on Environmental Policy and Environmental Management Systems

Started in 1995, the JICA Environmental Management Seminar initially accepted participants from each region such as Asia and South America although this system was later abolished in 2001. The course then changed into its current form in 2002 by enhancing its curriculum on Environment Management Systems.

JICA Training Course on Urban Solid Waste Management

This course was first launched in 1992 by the Osaka City Government's Environmental Management Bureau and then changed to its current name in 1999. GEC is responsible for managing the course budget.

JICA Training Course on Air Pollution Control

This course was initiated by the Environment Division of the Osaka City Government's Environment and Public Health Bureau to offer training in the prevention of air pollution. In the Centre's very first year, GEC took over the course.

Environmental Management in the Republic of Cuba

In the 1992 "Earth Summit", Cuba publicized its environment policy and has been improving its legal system and administrative mechanisms, and cultivating human resources in the environmental field. Therefore, JICA focused on the environment as a key area for collaboration and set up this course as a new country-focused training course in cooperation with GEC. It will accept 50 participants for 5 years starting from 2001.

GEC Networking Project for Former Training Participants

There are 673 overseas GEC participants on the network in 89 countries (as of August 2004)

One Day Seminars

Held in countries where Network membership is high, the theme of each seminar is intended to reflect the specific needs of that country.

- First Seminar: Philippines, Thailand (1999)
- Second Seminar: Vietnam, Malaysia (2000)
- Third Seminar: Indonesia (2001)
- Fourth Seminar: Egypt (2002)

Training period	Nationality of participants	Main course contents:
JICA Training Course on Air Pollution Control		
September 16 - December 5, 2003	Bangladesh (2), China, Egypt (2), Indonesia, Paraguay, Peru	<ul style="list-style-type: none"> •Lectures <ul style="list-style-type: none"> - Basic knowledge on air pollution - Air pollution control technology etc. •Practical training <ul style="list-style-type: none"> - Flue gas desulfurization technique - Environmental management technology etc. •Facility tours <ul style="list-style-type: none"> - Power plant - Refuse incineration plant etc. <p>Purpose: to raise engineers and administrative officials having leadership and technique capable of taking comprehensive and planned counter measure against air pollution.</p>
Environmental Management in the Republic of Cuba		
January 19 - February 13, 2004	Cuba (10)	<ul style="list-style-type: none"> •Lectures <ul style="list-style-type: none"> - Environmental management in Japan - Pollution control measures etc. •Practical training <ul style="list-style-type: none"> - Waste water and solid waste sampling and analysis etc. •Facility tours <ul style="list-style-type: none"> - Sewage treatment plant, Incineration plant etc. <p>Purpose: to cultivate an ability to formulate a comprehensive environment management plan, taking into consideration measures against public nuisance caused by industry and urban life as well as sustainable development and environmental conservation.</p>



Participants take a tour of Kimoto Electric Co., Ltd.



A training lecture at UN University

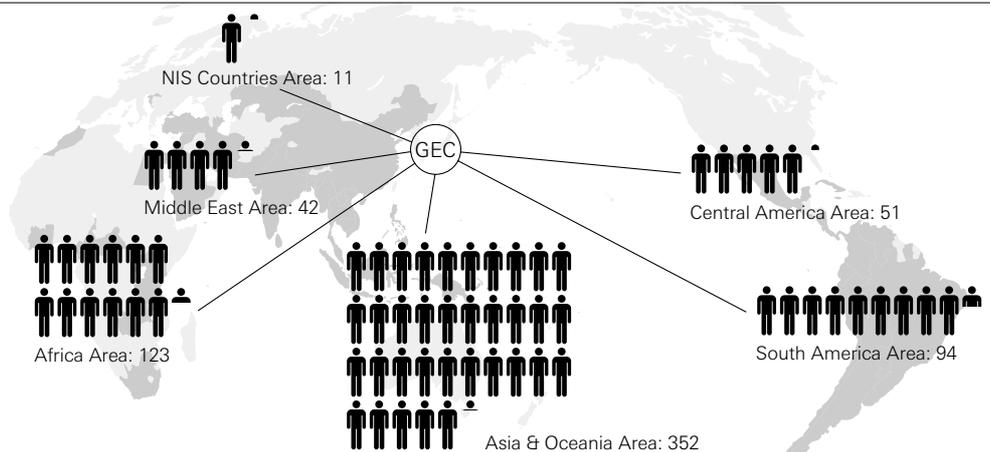
GEC Networking Project for Former Training Participants

In order to provide a follow-up framework for former JICA training participants, GEC has been building the GEC Network to offer new information from GEC and to acquire new data on developing countries and to ascertain their needs. In 2003, the Centre provided a digital version of JICA training text on the GEC website.

Upgrading the GEC Participants Network

1998	GEC commences one-day seminar and publication of newsletters
May 2001	Full-scale operation of the GEC Information Board begins
April 2002	GEC Network expanded to include four environmental JICA training courses offered by the Osaka City Government.
May 2003	JICA training course curriculum text made available online

Network Member Distribution Diagram (as of August 2004)



Seminar and Symposium Activities

CDM Forum 2003

GEC began co-hosting the forum annually from 2000 together with the Ministry of the Environment with an eye to bolstering awareness and participation in CDM/JI projects. The 2003 forum was held on 25 August in Osaka and 27 August in Tokyo, with participation reaching approximately 200 and 500 respectively.

The forum covered the latest trends in CDM/JI projects both in Japan and overseas and featured keynote speeches on the latest data on the prevention of global warming, as well as providing summaries of each of the eight feasibility studies carried out in 2002.

CDM Forum 2003 Programme

Opening remarks

First keynote speech: International CDM/JI Trends and Japan's Level of Readiness;
Mr. Makiya, Head of the Global Warming Measure Department, Ministry of the Environment

Second keynote speech:

"Status, Issues and Prospects surrounding CDMs in Progress";
Dr. Matsuo, Senior Research Fellow, Climate Experts Ltd.

2002 Feasibility Study Group Report

Third Keynote Speech: Summary of CDM Feasibility Studies and Issues Facing their Implementation;

Mr. Hiraishi, Senior Consultant, the Institute for Global Environment Strategies (IGES)

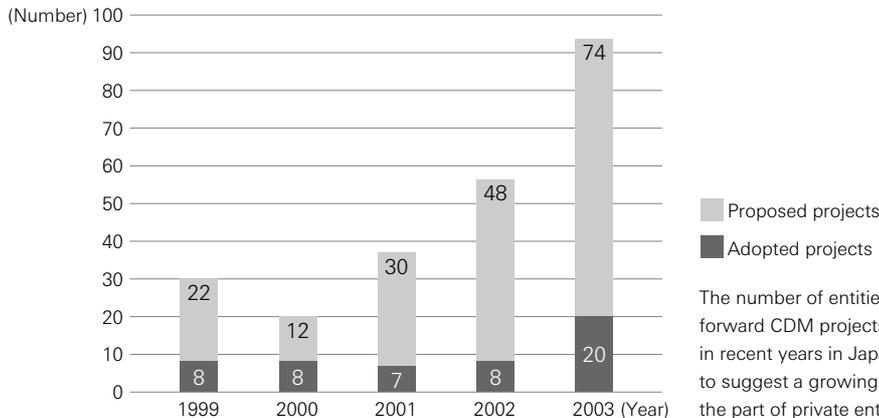
Question and answer session

Forum adjourned



CDM Forum 2003 (Tokyo)

Trends in the number of proposed CDM projects



The number of entities putting forward CDM projects has increased in recent years in Japan, which tends to suggest a growing interest on the part of private enterprise.

Other Activities

Collaboration with the Supporting Committee of the APEC Virtual Center for Environmental Technology Exchange

GEC participated in discussions and other sessions of the council, which is responsible for the operation of the APEC Virtual Center for Environmental Technology Exchange (APEC-VC).

APEC Virtual Center for Environmental Technology Exchange

Originally founded at the "APEC Osaka Meeting" held in November 1995 to act as a formal joint research project of APEC, the Center is currently operated by members from municipalities, corporations and environment-related institutes. Its supporters include the Ministry of Economy, Trade and Industry and the Ministry of Foreign Affairs.



Projects for Fiscal Year 2004

GEC will contribute more positively than ever to the conservation of the global environment to help lead the 21st Century to a "Century of the Environment" where sustainable development is an attainable reality.

As yet another example of our collaborative projects with IETC, GEC will overhaul its NETT21 Japanese environmental technology database to disseminate information on ESTs and promote technology transfer.

We also plan to formulate proposals for projects such as sustainable water use and management in urban areas, and assist the activities of the UNEP Special Envoy.

GEC will continue its dissemination and awareness-raising activities toward water quality improvement in the Tha Chin River basin in Thailand. We are also reviewing the launch of new eco ventures through the creation of a liaison network in Vietnam, and hands-on projects for the transfer of environmental technologies to developing nations.

As part of its training activities, GEC will continue to organize five training courses commissioned by the Japan International Cooperation Agency (JICA) while improving their curriculums. In the GEC Networking Project for former JICA training participants, we will endeavor to gain a better insight into the needs of developing countries through the Internet-based "GEC Information Board". We will also strengthen the scope and content of follow-up activities by offering technical materials on our web site.

In addition, we will contribute to global warming prevention measures through the continued implementation of feasibility studies of Clean Development Mechanism (CDM)/Joint Implementation (JI) projects.

In the arena of Environment Management Systems (EMSs), GEC will continue delivery of our "Internal Environmental Auditor Training Course" and other training programs.

International Cooperation through Technical Support for Developing Countries

1) Dissemination of IETC EST Information and Promotion of Technology Transfer

- 1) Hosting workshop symposiums on ESTs and Sustainable Urban Management
- 2) Providing information for IETC EST Information Systems
- 3) Launch of publications & Web site on "Water for Cities: Environmentally Sound Sewage Technology"
- 4) Waste management

2) International Cooperation in Developing Countries

- 1) Establishing community-run environmental conservation activities in Thailand:
In 2004, GEC supported local activities in four provinces along the Tha Chin River
- 2) Environmental Cooperation in China's Henan Province:
GEC will help to set up air measurement stations in 2004 to aid mitigation of air pollution

3) Contributing to Global Warming Countermeasures in Developing Countries

- 1) CDM/JI Feasibility Studies to offset global warming
 - Activities to include revamp of CDM/JI Feasibility Studies, launch of Model Projects for Preliminary Practice of Validation to train Operational Entities (OE) in Japan and support for CDM/JI-related facilities
 - Hosting of "CDM forum" to report the results of 2003 feasibility studies
 - Ongoing efforts to acquire/present data via participation in the COP and the CDM Executive Board and side events
- 2) Greenhouse Gas Reduction Projects via the CDM and other Kyoto Mechanisms
 - Ongoing support by providing data on CDMs to Kansai-based firms via the "Osaka CDM Network Project" and through hands-on participation.
- 3) Feasibility Studies of New Energy Systems
GEC will continue collecting solar power generation and other data from its demonstration facility to show the viability of new energy systems.

Environmental Technology and other Training

1) Human resource development in developing nations

- 1) JICA Training Projects: 5 courses
 - Heavy Metal and Other Hazardous Substance Pollution Control
 - Environmental Policy & Environmental Management Systems
 - Urban Solid Waste Management
 - Air Pollution Control
 - Environmental Management in the Republic of Cuba
 - 2) GEC Networking Project
GEC will reinforce its network capabilities by information-exchanges with former participants.
-

2) Promotion of Environment Management Systems (EMS)

- 1) EMS Training Courses
 - Operation of training programs such as the "Internal Environmental Auditor Training Course"
 - "On demand seminars" for municipalities and private enterprise
 - EMS Implementation Course: targeting the Osaka City Government and its affiliates, this course teaches trainees how to set up and manage EMSs.
 - 2) Overseas Dissemination of EMS
Through its JICA training courses, GEC is working to spread the adoption of EMS overseas in developing countries.
 - 3) Introduction of EMS within GEC
GEC established an EMS system within its office in July 2001, and intends to continue its operation into the future.
-

Information Gathering and Dissemination Activities

1) Promotion of IETC Policies and Joint PR Efforts:

- 1) Dissemination and Promotion of EMS: Distribution of IETC's EMS training kits within our JICA training courses
 - 2) Public Relations: Collaboration with the IETC on PR activities through various mediums
 - 3) Hosting of the IETC 10th Inaugural International Symposium: celebrating 10 years since IETC's inception, this symposium is aptly themed "Environmentally-Sound and Human-Centered 'Machi-zukuri' Urban Planning"
 - 4) Co-hosting of Seminars Overseas: jointly held seminars on EMS dissemination and EST Information Systems including ESTIS
-

2) UNEP Special Envoy Project *

GEC will carry on its support for the UNEP Special Envoy's eco-related activities both in Japan and abroad

3) Maintenance, management and enhancement of information systems

- 1) Management and updating of GEC information systems
 - 2) Upgrading the information available on "NETT21"
 - 3) Ongoing efforts to sustain and improve the security and convenience of the "GEC Networking Project" and other web sites on the GEC home page
-

4) Seminars and Symposia

PR activities aimed at local residents through tie-ups with affiliate organizations and presentation of display booths at various environmental exhibitions.

5) Public Relations

- 1) Publication of GEC Activities via the Internet
 - 2) Publication of newsletters and annual reports
 - 3) Offering tours of the GEC Centre to the public
 - 4) Dissemination of global warming measures in school education
-

6) Upgrading and managing library facilities

Providing facilities and other support to IETC

Provision of office space and equipment

* This support indirectly benefits IETC by raising the profile of UNEP in Japan and the Asia Pacific region.

Overview of the UNEP/DTIE/IETC

Name	United Nations Environment Programme (UNEP) Division of Technology, Industry and Economics (DTIE) International Environmental Technology Centre (IETC)
Date of Conclusion of the Agreement between Japanese Government and UNEP	October 30, 1992
Mandate	The main role of the IETC is to promote the adoption, application, and operation of Environmentally Sound Technologies (ESTs) to address urban environmental problems such as sewage, air pollution, solid waste, and noise, and the management of freshwater to developing countries and countries with economies in transition.
Approach	Osaka Office management of urban environmental issues Shiga Office management of freshwater resources
Contacts	Osaka Office 2-110 Ryokuchi-koen, Tsurumi-ku, Osaka 538-0036 Japan tel: +81-6-6915-4581 fax: +81-6-6915-0304 Shiga Office 1091 Oroshimo-cho, Kusatsu-city, Shiga, 525-0001 Japan tel: +81-77-568-4581 fax: +81-77-568-4587 e-mail ietc@unep.or.jp IETC homepage http://www.unep.or.jp/
Posts	Officer-in-Charge Senior Liaison Officer Programme Officers (3) Administrative/Fund Management Officer Information Network Officer (as of July 2004)
Programme Activities (implemented in 2002-2003)	<ul style="list-style-type: none"> • Publication of newsletters: <ul style="list-style-type: none"> “INSIGHT” (English edition) and “IETC’s Voice” (Japanese edition) • Development and maintenance of the EST information system, including maESTro • Preparation of Publications and training materials on: <ol style="list-style-type: none"> (1) Sustainable management of urban wastewater and stormwater (2) Rainwater harvesting in cities (3) Transport and cities (4) Planning and managing of lakes and reservoirs (5) Energy and cities (6) Environmental Management Systems (EMS) for urban management (7) Municipal solid waste management (8) ESTs in architecture and construction (9) Computer based training for EMS (10) ESTs for urban management (11) Phytotechnologies and ecosystem management (12) Urban land use and “Brownfields” • Workshops and seminars on: <ol style="list-style-type: none"> (1) Management practices of lakes and reservoirs focusing on eutrophication (in association with UNEP-GPA) (2) Bioclimatic and ecological design in Architecture (3) Adoption, applying and operating ESTs for sewage in the wider Caribbean region (4) Environment citizenship (5) Environmentally Sound Technology Performance Assessment (EST-PA) (6) Sectional meetings at the WWF3 World Water Forum focusing on water and urban issues

Board Members of the Global Environment Centre Foundation

President	KUMAGAI, Nobuaki	Chancellor, University of Hyogo Professor Emeritus, Osaka University
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SOMIYA, Isao		Professor, Faculty of Science and Technology, Ryukoku University
TAKEDA, Nobuo		Professor, Graduate School of Engineering, Kyoto University

(As of July 1, 2004, honorific omitted; names in alphabetical order [Surname])

Publications List

Publication

Name of publication	Description	Format/No. of Pages Date of Issue
Manual for Environmental Preservation Activities Focused on Rivers <i>Second Edition</i> (English/Thai/Japanese version)	An instructors' manual on river conservation	A4/60 pages March 2004

Periodicals

Name of publication	Description	Format/No. of Pages Date of Issue
GEC NEWSLETTER No.24 (Japanese edition)	An introduction to the activities of GEC	A4/8 pages August 2003
GEC NEWSLETTER No.25 (Japanese edition)	An introduction to the activities of GEC	A4/8 pages February 2004
GEC Newsletter No.14 (English edition)	An introduction to the activities of GEC	A4/8 pages August 2003
GEC Newsletter No.15 (English edition)	An introduction to the activities of GEC	A4/8 pages March 2004
Global Environment Centre Foundation Annual Report (Japanese edition)	Report on projects of GEC for fiscal year 2002	A4/24 pages October 2003
Global Environment Centre Foundation Annual Report (English edition)	Report on projects of GEC for fiscal year 2002	A4/20 pages November 2003

Series of NETT21:

Database on New Environmental Technology Transfer in the 21st Century by GEC, and number of each data listings.

- Database on:
- Air Pollution Control Technology in Japan: 128
 - Waste Treatment Technology in Japan: 98
 - Water Pollution Control Technology in Japan: 109
 - 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: 190
 - Energy-Saving Technology at Business-Related Buildings: 94
 - Soil and Groundwater Contamination Survey and Countermeasure Technologies: 37
 - Japanese Advanced Environmental Equipment (provided by JSIM): 621

Total: 1,496 data listings (as of August 2004, complete data available in English via the GEC Website)

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