

ICETT



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The 1999 NEDO/ICETT Research on Environmental Information Network for the International Global Environment Information Network Study Project

Target area:	Australia (Brisbane, Canberra, and Sydney)
Targeted Institutions:	UNEP Cleaner Production Working Group Centre Environmental Management Centre, University of Queensland Environment Australia Environmental Protection Agency, Queensland Government Australia-Japan Research Centre National Centre for Development Studies Environmental Protection Authority, New South Wales Government NEDO Sydney Representative Office
Research period:	November 24 - December 4, 1999



1. Research Objectives

There is an increasing, urgent need for the environmental technology and expertise accumulated by Japanese industry to be applied effectively to pollution problems occurring around the world. Concerning this point, ICETT has implemented a research project on "Environmental Information Network for International Global Environment Information Network," entrusted by the New Energy and Industrial Technology Development Organization (NEDO). This project was carried out to research the domestic and overseas environmental conservation information, highlighting applied technologies which have been adopted at plants and business units in Japan and abroad. Research results were put into the "ICETT Information on Environmental Management and Technology Database."

The database has been made accessible via the ICETT home page to raise awareness in developing countries of the need for environmental conservation (<http://www.icett.or.jp>).

In 1999, we focused on and researched how Australia's institutions promote cleaner production (CP) and on how the Internet in Australia is used for environmental information exchange.

2. Outline of Our Research

The following areas were examined:

- ① What types of CP are collected in Australia;
- ② The form in which environmental information is collected; and
- ③ What kind of activities the international institutions are taking concerning CP or the Internet.

Our intention was to provide highly accurate information suitable for addition to the "ICETT Information on Environmental Management and Technology Database" by researching case-studies on successful CP and Institutional Homepages in Australia.

3. Details of Our Research

We began by clarifying the essential concept of CP, as advocated by the Division of Technology, Industry and Economics, United Nations Environmental Programmes (UNEP-TIE). UNEP - TIE defines CP as "an integrated preventive environmental strategy applied to processes, products, and services to increase overall efficiency and reduce risks to humans and the environment." UNEP-TIE is promoting the dissemination and implementation of this CP concept in developing countries.

3-1 UNEP Cleaner Production Working Group Centre

First of all, as one of the International institutions of cleaner production, we visited the UNEP Cleaner Production Working Group Centre, which provides human resource development, technical advice and information. The goal of the Centre is to prevent the occurrence of pollution, and their strategy is to confirm opportunities for marketing new processes through cost and risk reduction. This approach relates to environmental management, typically as described by, CP, Eco-efficiency and ISO.



3-2 Environment Australia

We examined Australia at two administrative levels: the Federal and the State government. Environment Australia invests funds and manpower in CP case studies, mainly for domestic corporations which have not yet established appropriate management for the treatment of pollutants. We researched and exchanged information with Australia on how they have disseminated the concept of CP to their domestic industries and to developing countries.



3-3 Queensland Government Environmental Protection Agency and New South Wales Government Environmental Protection Authority

We selected and visited Queensland and New South Wales for research at the State level. In both states, we examined the CP and Eco Efficiency (EFF) they have achieved based on the CP of both states.



The following Figure illustrates the guidelines for identifying the progress made by each corporation when implementing environmental protection strategies. Accordingly, the Australian State Government has a clear vision for implementing CP and deriving EFF.



Source: This figure was distributed during our discussion.

For example, the Queensland State Government enters into a CP partnership with each corporation, and the corporation implements an assessment on whether EFF has been put into practice. In response to the assessment, the corporation makes an action plan including due dates, submits it to the state government, and implements EFF based on the action plan. The state government gives financial support to each corporation of A\$10,000 (about ¥700,000) for the above series of processes.

Australia stresses the importance of both the concept and the theoretical framework of CP. Upon clarifying the logic behind the system, the central government and academic circles take the initiative in implementing R&D, dissemination, and training (education). Cooperation between industry and the government is a requirement for putting EEF into practice.

3-4 Australia-Japan Research Centre and National Centre for Development Studies

We visited that Australia-Japan Research Centre and National Centre for Development Studies. We examined the degree programmes of international academic institutions. The International Economic Data Bank (IEDB) is implemented by the A-JRC. The IEDB aims to provide "mega-data" on international trade and the economy. This data constitutes an essential resource for research on international trade and financial flows in Asia, the Pacific and other countries. The National Centre for Development Studies (NCDS) implements human resource development programmes for government officials, industrial engineers and academic staff in areas critical to economic development, environmental conservation, population studies, etc. Both institutions accept overseas participants for training / for research as a part of degree programmes, and they use the Internet to obtain and disseminate fruitful information.



4. Creation of Manuals and Training

Australia has substantial training manuals and programmes. For example, the UNEP CP Working Groups provide training programmes using manuals for government officers, engineers, and academic researchers in developing countries which grant an academic degree (1 to 2 years) or a certificate (2 to 3 days) with the aim of propagating CP. This manual covers: ① Definition of CP (its significance), ②

Specific CP actions to be taken at each workplace, ③ Guidelines for self-assessing CP, and ④ Reference documents (URLs) and CP terminology.



The Environmental offices in Queensland and New South Wales also have similar type reference documents and manuals. For example, the Environment Protection Agency of New South Wales provides guidelines for assessing each industry: food, gas stations, food services, construction, films and photos, repair, and printing. They distribute materials that enable each shop owner to study CP individually.

5. Conclusion

In Summary, in Japan, CP is promoted through the initiative of each corporation, and CP is referred to as energy-saving technology and resource conservation. In Australia, on the other hand, manuals that provide details on CP and how CP should be promoted are strategically created under the initiative of international organizations and government administrations with the assistance of educational circles. We conclude that manuals like Australia's strategic manuals are essential for promoting CP in developing countries. It is important that academic sectors fully support this training, as well as the government. Training should be given using a manual that is designed to be helpful for each government officer, engineer, and academic researcher, in creating an environment or for practicing CP in the developing countries.

The Sixth International Workshop of Environmental Technology Research Network in the Asia-Pacific Region (ETERNET-APR)

ICETT held a two-day international workshop, "The Sixth International Workshop of Environmental Technology Research Network in the Asia-Pacific region (ETERNET-APR)" at the ICETT venue on November 25 and 26, 1999. This workshop aimed to promote international collaboration through information exchange and person-to-person meetings between environmental technology researchers and research institute staff in Asia, the Pacific regions and Japan. A number of specific achievements, including information exchange with environmental technology researchers, have been promoted through the dispatch of research groups to the regions concerned and by holding international symposiums, as well as the creation of a substantial database on environmental projects. The feasibility of joint research has also been discussed.

This year, researchers have discussed and exchanged information centering on the theme of "Implementation of International Collaborative Researches on Environmental Technology" with the aim of preparing a specific research plan for further promoting global joint research.

and Waste related Research Field. At each working group, the latest research subjects were introduced, and proposals on international collaborative research were discussed.



For ten days after the Workshop, overseas researchers visited their counterpart research institutes under the auspices of MITI's Agency of Industrial Science and Technology (AIST) for technical studies on implementing collaborative research.



About fifty researchers from ten countries, including Japan, participated in the Workshop. The Workshop was divided into two working groups: the Atmosphere and Energy related Research Field; and the Water



Energy Conservation Joint Survey Project at an Ethylene Plant (Thailand)

This is a joint research project with National Petrochemical Public Co., Ltd., Thailand (NPC). The second site survey has just been completed. ICETT members and eight technical experts from Japan are participating in this project to examine effective energy-saving measures that can be applied in the petrochemical industry.



The Thai economy is recovering from the damage caused by the Asian economic crisis, and a steady increase in energy consumption by the industrial sector is predicted. In particular, key importance is given to the minimization of energy consumption in the petrochemical industry, a highly energy-intensive industry, by modifying and replacing obsolete and inefficient equipment.

Under these circumstances, we have received a request from Industrial Estate Authority of Thailand to cooperate in this survey project. We have surveyed the issue of transferring energy-saving technology as part of a plan to streamline equipment in NPC which has been established by joint investment by the Thai government and private sector to start the first operation in Thailand. We have studied the feasibility of transferring suitable energy-saving technologies from Japan to Thailand to reduce manufacturing costs and suppress CO₂ emissions in Thailand.

As competition with large-scale petrochemical plants in neighboring countries becomes more intense, every company is making desperate efforts to cut costs. NPC engineers have closely examined the technical issues that we identified. Friendly

discussions took place based on technical data related to the survey, as shown in the photo. A final discussion on analysis results based on submitted data will take place during our third visit, scheduled in February 2000, to confirm the effects of achieving the expected energy conservation. We believe satisfactory results will be achieved as scheduled.

We have by chance encountered a traditional Thai event called the Loy Kraton Festival. This festival is dedicated to the spirit of the river on the twelfth night of the full moon in the lunar calendar. The photo shows the Kraton, a lantern, floating down the river.



A banana tree trunk is used for the core of the Kraton, which is then decorated with banana leaves. Lighted candles and incense sticks are placed on the Kraton, and floated down the river by prayers. Plastic Kratons were used for a period, but were started to be reconsidered five years ago. A major campaign was implemented to promote the use of natural materials for Kratons to protect the environment, and now they are again made of traditional materials. The Loy Kraton Festival was originally a festival to thank the river for providing an abundant source of water. We fully agree with their respect for the use of biodegradable material which does not contaminate the water.

Today, we must further devote ourselves to saving energy in order to conserve the beauties of nature. In this sense, we believe the promotion of energy conservation at petrochemical plants has considerable significance.

Participation in COP5

ICETT held a workshop on CTI (the Climate Change Technology Initiative) in October, 1999, the second to be held in Japan. We were given the opportunity to participate in COP5 to report on the workshop's achievements. After COP3, in Kyoto in 1997, COP4 was held in Buenos Aires in 1998, followed by COP5, in Bonn, Germany in 1999 between October 25 and November 5 with 167 countries participating.



The temperature of the Earth's atmosphere is increasing year by year, and there is increasing scientific evidence that this effect is being caused by mankind's increased energy consumption. There is now an urgent need to voluntarily restrict our energy-consuming activities. The formal name of COP5 is "the Fifth Conference of the Parties to UNFCCC," and this movement started in 1992 to prevent the detrimental effects of climate change caused by global warming. Problems on and after the year 2000 were first discussed at COP3 in Kyoto. This is the so-called Kyoto mechanism, in which many countries are participating in active discussions at COP every year to harmonize their interests before determining specific measures.



Workshop in Japan

Many official and non-official government meetings and NGO meetings were held at the convention hall and other medium-scale venues that ran until late at night. As with

COP4 in 1998, there was a large difference between the position of developed countries and developing countries. At COP 4 in Buenos Aires, hostility between developed and developing countries has resulted in no practical discussions, and state members have agreed only on an "action plan" that in fact sets the negotiation schedule. COP5 at Bonn in 1999 became a focus of attention for determining the early enforcement of the Kyoto Protocol which defines the Kyoto mechanism. As a result, COP5 created a shared understanding among many countries that it is important to enforce the Kyoto Protocol by 2002. Other progress made in COP 5 include reconfirmation of the steady implementation of the Buenos Aires Action Plan, the holding of COP 6 in The Hague, the Netherlands, in November 2000, and specific negotiations to be taken up to COP6.

We brought brochures on action slogans encouraging energy conservation, prepared by member countries who participated in the CTI Workshop, to provide information on our activities in the Workshop to those attending COP5. Brochures were distributed to participants at a booth and a CTI seminar as PR activity. Some people who attended ICETT training dropped by at our booth, and explained to us how the contents of ICETT training and the human links, formed during the training, had been useful to them. We have realized the importance of human relationships in this process.



Since environmental issues in developing countries depend on the conditions in each country, it is extremely important to identify the immediate tasks of each country with local people, and jointly examine what measures need to be taken. In this respect, our immediate mission is to exchange information with local people, and discuss problems and difficulties, as well as measures, together. For this purpose, we have again become aware of the importance of building networks.

The Training Course in "Waste Management and Recycling Technology" for Tianjin, the People's Republic of China

Consigned from the city of Yokkaichi, ICETT held "Waste Management and Recycling Technology" for Tianjin city, the People's Republic of China. ICETT has provided training to Tianjin four times so far on the themes of "Industrial Pollution Control Technology," "Urban Pollution Control Technology," and "Measures against Vehicle Gas Emissions." On this occasion we provided training on waste management, since it is becoming a problem in Tianjin, too, as the generation of waste increases in line with rapid economic growth.

Tianjin is currently building a comprehensive treatment facility for incinerating industrial waste and disposing of it in landfills. Many of our participants have been involved in the design and construction of waste treatment facilities and waste recycling studies. They seem to be particularly interested in specific treatment technology including countermeasures to dioxin emissions at incineration facilities and bottom liners for landfill disposal facilities. Tianjin has been landfilling household waste, but they have just started the construction of power stations utilizing waste incineration with environmental, social, and economic aspects in mind.



Training at final disposal site

The training was divided into three sessions as follows:

- 1) Waste administration
Those in charge at central and local government gave a lecture on Japanese policy and legislation related to waste, waste management by local governments, and activities to increase citizens' awareness.
- 2) Waste treatment and recycling technology
Provided lectures and site observations concerning waste treatment technology (incineration, landfill, and leachate treatment), waste recycling technology (production of solid

fuel from wastes, collection of valuables, including metals, etc.), and strategies implemented to solve waste and environmental problems in the manufacturing industry (cleaner production, zero emissions, responsible care activities, etc.).

3) Summary

Reviewed the training, and created and made presentation of the final report with the aim of using this report as a set of action guidelines after returning to the country.

To increase knowledge of waste management in Japan, participants observed reuse and various treatment methods of industrial waste, incinerators for urban waste, a refuse-derived fuel (RDF) facility and a food processing plant that has achieved zero emissions. They also actively exchanged opinions with Japanese government officers and experts at companies and identified various differences in waste treatment between Japan and China.



Participants learning about waste recycling at cement plant

Participants have attended a local cultural festival, and prepared *gyōza*, the meat dumpling, to put their contact with local people on a more personal basis.



Sakura municipal center
Cooking "gyōza" at the Festival

**Seminar on Environmental Management in the Philippines :
Understanding Domestic and Industrial Waste Management
in the Philippines and Japan**

ICETT held a two-day "Seminar on Environmental Management in the Philippines" in Manila, the Philippines, on October 14 and 15, 1999. This seminar was organized with the aid of the Japan Fund for Global Environment of Japan Environment Corporation. The first seminar was held also in the Philippines in 1998, making this the second seminar to be held.

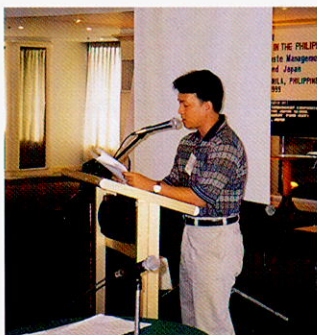
The seminar focused on waste issues, and provided an arena for the exchange of information on waste measures in Japan and the Philippines. In addition, examples of effective environmental conservation activities in both countries were described to contribute to the promotion of environmental conservation in the Philippines, particularly at local level. Administrative Officers, company members, and NGO members of provinces and local regions attended the seminar, making a total of 46 participants. We received a high level of cooperation from the Local Government Development Foundation (LOGODEF) in Manila and ICETT-training graduates concerning the planning and management of the seminar.



Outline of the seminar

"Domestic Waste Management in the Philippines"

Mr. Nolan FRANCISCO, Head, Project Management Office, Presidential Task Force on Waste Management, Department of Environment and Natural Resources Discussed the present situation of treatment facilities, and described the national framework



Mr. Nolan Francisco

and local government practices on solid waste management in the Philippines.

"Comparative Waste Management: the Philippines and Japan"

Dr. Seishiro TOMIOKA, JICA-Expert on Solid Waste Management, Metropolitan Manila Development Authority

Compared and studied differences in waste measures between Tokyo and Metropolitan Manila with respect to waste collection and transport methods, incineration, landfill disposal, and administrative strategies.



Dr. Seishiro Tomioka

"Waste Management in Japan"

Dr. Hisashi HASOME, Division Head, Research & Assessment Division, Japan Environmental Sanitation Center

Described the present situation of waste treatment in Japan overall, and considered future waste measures in Japan.

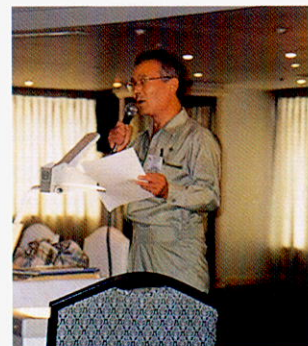


Dr. Hisashi Hasome

"Waste Management by Municipalities in Japan-The Case of Yokkaichi City"

Mr. Shigeyo KUSAKABE, Associate Manager, Life Environment Management Division, Environmental Department, Yokkaichi Municipal Government

Described waste management by a municipal government in Japan based on the example of Yokkaichi City.



Mr. Shigeyo Kusakabe

**"Waste Management in the Industrial Sector in Japan-
The Case of the Nagoya Plant of Kirin Brewery Co.,
Ltd. "**



Mr. Masahiro Sakamoto

Mr. Masahiro SAKAMOTO, Deputy General Manager of Nagoya Plant and Manager of Environment Section, Nagoya Plant, Kirin Brewery Co., Ltd. Introduced strategies implemented by Kirin Brewery's Nagoya Plant,

which has ① Achieved and maintained 100% waste recycling, ② Obtained and maintained ISO14001 certification, and ③ Fully observed and maintained domestic laws and regulations related to waste.

**"Waste Management in the Industrial Sector in the
Philippines-The Case of the San Miguel Yamamura
Asia Corporation"**

Mr. Eduardo REYES, Manager, Safety/Security and Environmental Services, San Miguel Yamamura Asia Corporation

Described the importance of identifying: ① Generated waste, ② Generation amount and type, and ③ Cost required for treatment and storage; and then introduced actions taken by the company.

**"Experiences of the Municipality of Imus under the
ICETT Environmental Cooperation Program for Asia
(ECPA)"**

Hon. Corazon Z. del MUNDO, Sngguniang Bayan Member, Imus, Cavite;

Ms. Angelina G. CANTIMBUHAN, Municipal Planning and Development Coordinator, Imus, Cavite Imus has been selected as a target city for the "Environmental Cooperation Program for Asia" implemented by ICETT and consigned by Mie Prefecture since 1997. Japanese environmental experts were dispatched to Imus, and their counterparts in Imus are being assisted to participate in training courses in Japan to actively implement environmental conservation activities. In the lecture, the Imus Environmental Masterplan and environmental code stipulated in Imus were described.



The following comments were collected via the questionnaire provided to the seminar participants. (Excerpts)

- Believes there is a need to implement education and seminars for residents, teachers, and pollution control officers at corporations.
- Believes there is a need to make municipal government staff recognize the necessity of waste management.
- Wishes to stipulate environmental code in my town.
- Waste needs to be reduced through recycling and reuse.
- Wishes to visit elementary schools to provide education and carry on a campaign for increasing children's' awareness of the need for environmental conservation.
- Garbage sorting by citizens before collection, improved public attitudes, and cooperation are important for solving the waste problem.
- A comprehensive action plan should be drawn up and implemented.
- Wishes to have more opportunities to participate in training and seminars in order to obtain knowledge and technology, and improve the capability for implementing related programs.



Philippine Fellows Trained in ICETT to Organize Alumni Association

A group of Filipino participants who were trained in the International Center on Environmental Technology Transfer (ICETT) are now making efforts in the Philippines to organize what is called the Philippine-International Center on Environmental Technology Transfer (ICETT) Alumni Association (PICETTAA).

Spearheaded by a group of participants from the Environmental Cooperation Program for Asia (ECPA) project in Imus, Cavite, the PICETTAA seeks to expand the importance of environmental protection in the Philippines using instructive experiences and lessons learned in Japan particularly on industrial and waste management system.

Currently, it is estimated that about 200 Filipino environmental experts have been trained in ICETT representing various national government agencies, cities and municipalities and some from non-governmental organizations (NGOs).

Once it has been organized, the PICETTAA envisions to support environmental management projects in different sectors of the society, conduct information and education campaign and sponsor environmental protection initiatives through cooperation from international organizations and other local institutions whose primary concern is the conservation, preservation and protection of the environment for sustainable development.

Based on its Articles of Incorporation, the mission of PICETTAA are enumerated as follows :

- a) To promote environmental protection and awareness in the Philippine society through a combination of information, education and communication (IEC) campaign, public fora, trainings and community-based environmental programs.
- b) To support the national and local governments effort in the attainment of balanced and sustainable development.
- c) To conduct inter-disciplinary researches and consultancy services for national and local authorities including private entities as well on environmental science and management.
- d) To establish working linkages with government, non-governmental organizations, academic, research and training institutions for the purpose of pooling resources and information on environmental protection and management.
- e) To undertake continuing capacity building for its members and promote institutional development of PICETTAA.

As part of its mission, PICETTAA intends to support the environmental initiatives of ICETT in the Philippines and also commit itself to sustain the activities of the ICETT-assisted ECPA project in Imus which will terminate on March 2000.

Membership in PICETTAA includes all Philippine fellows who have completed a training course in ICETT. At this time PICETTAA is composed of nine (9) fellows who temporarily serves as its Board of Directors. They are :

Name	Designation	Address
1. Felipe Baroja	City Environmental Officer	Batangas Environment & Natural Resources Office, (BENRO) Batangas City Government, Batangas City
2. Dennis N. Calara	Senior Program Officer	S-334 Secretariat Bldg. PICC 1000 Manila
3. Ronald Calingasan	Medical Doctor	Imus Family Hospital, Imus, Cavite
4. Angelina G. Cantimbuhan	Municipal Planning & Development Coordinator	Municipal Planning and Development Office, Imus, Cavite
5. Nolan Francisco	Head, Presidential Task Force on Solid Waste Management	Presidential Task Force on Solid Waste Management, DENR, Kamias, Quezon City
6. Emmanuel Maliksi	President	Imus Business Club (IBC) Imus , Cavite
7. Luisito Picache	Manager	Philippine Gaming and Amusement Corporation (PAGCOR) Logistical Office, Imus, Cavite
8. Roger Daquer	City Environmental Officer	Office of the Environmental Officer, Puerto Princesa City Government, Puerto Princesa City, Palawan
9. Oscar Quirante	City Health Officer	Office of the Health Officer, Mandaue City Government, Mandaue City

The documentation of PICETTAA is currently lodged at the Philippine Securities and Exchange Commission (SEC) to obtain its legal and juridical personality as a non-stock, non-profit, non-governmental institution whose primary existence is to promote the notion of environmental protection in the Philippine setting.

The 2000 Training Program (tentative)

April 2000 - March 2001

Training in Japan

Course name	Period	Number of participants	Sponsored by	Target country
Industrial Exhaust Gas Treatment and Energy Saving	May - July, 2000	8	JICA	Selected from Asia, Near and Middle East, Africa, and Central and South America
Water Pollution Control	July - Sep., 2000	14	JICA	Selected from the South America
Environmental Management Techniques in Petrochemical Industries	Sep. - Nov., 2000	10	JICA	Selected from Asia, Near and Middle East, Africa, Central and South America, and East Europe
Industrial Pollution Control	Sep. - Nov., 2000	7	JICA	Egypt
Pollution Control Manager System	Oct. - Nov., 2000	8	JICA	China
Environmental Cooperation Program for Asia Training Program	Oct. - Nov., 2000	10	Mie Prefecture	Thailand
Technology for G.H.G.s Emission Mitigation	Jan. - Mar., 2001	10	JICA	Selected from Asia, Near and Middle East, Africa, Central and South America, and South Pacific region
Industrial Air Pollution Control	Jan. - Mar., 2001	10	JICA	Selected from East Europe



INTERNATIONAL CENTER FOR ENVIRONMENTAL TECHNOLOGY TRANSFER
 3690-1, Sakura-cho, Yokkaichi, Mie, 512-1211, Japan Phone: +81(593)29-3500 Fax: +81(593)29-8115
 E-mail address: info@icett.or.jp Web site address: http://www.icett.or.jp
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