

INTERNATIONAL CENTER FOR ENVIRONMENTAL TECHNOLOGY TRANSFER

# ICETT

NEWSLETTER

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For the future of the Earth



## Objective of Establishment

The International Center for Environmental Technology Transfer (hereinafter referred to as ICETT) was established by cooperation among industry, academia and government to transfer Japanese or international environmental conservation technology to other countries in order to take the initiative in solving environmental issues worldwide. Its purpose is to conserve the global environment and enable sustainable world economic development by implementing various activities according to the conditions prevailing in each country and prompting smooth technology transfer.

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Entrusted by Mie Prefectural Government

## Environmental Conservation Support Program in Sao Paulo, Brazil

### Outline

In FY2013, Mie Prefecture marked the 40th anniversary of its friendship with the State of Sao Paulo, Brazil. As part of the exchange programs, ICETT carried out an environmental conservation training course, as entrusted by Mie Prefecture, for three invited officials engaged in environmental administration from the State of Sao Paulo in FY2016. It focused on "Medical waste treatment and recycling (use of waste heat after incineration)".

### Background and purpose

The State of Sao Paulo has just started recycling and sorting waste before collection. The establishment of a legal system for environmental conservation and fostering of technical experts, etc. has become an important issue. As Mie Prefecture has accumulated a great deal of knowledge, experience and technology involving waste treatment, etc., it was decided that officials and technical experts engaged in environmental administration, management and protection in State of Sao Paulo should be invited to take part in an environmental conservation course.

### Details

The course was held at ICETT for 13 days from October 17 - 29, 2016.

#### 1) First half of the course

It began with an introduction to the geography, economy and culture of Mie Prefecture and went on to include explanations about making the distinction between industrial and general waste and also the Japanese legal system applying to waste treatment. There was also a visit to a local government recycling center to experience garbage sorting, resource recovery and listen to accounts of cases of soil and ground water purification. In these cases pollution had occurred due to improper waste treatment, etc.

#### 2) Latter half of the course

This focused on infectious waste and included lectures on the legal position and management system for it, explanation of corporate philosophy for appropriate treatment by an industry waste disposal contractor and a visit to a treatment facility. There was also a lecture on pollution control in Yokkaichi, a visit to a sewerage treatment facility, as well as some introduction to Japanese culture, and the course finished with a report presentation by the participants.

### Results and prospects

The participants told us that they had learned the importance

of removing the labor health risk, especially in infectious waste disposal, by directly bringing waste in sturdy boxes to the incinerator. They also laid stress on the appropriate balance of energy recycling and resource recycling, how to use autoclaves, the establishment of a system to store garbage and waste formalin, etc. in hospitals. They were also impressed by the manifesto system for other waste, the funding after ceasing operation of disposal facilities, etc., as well as how children make efforts for environmental sustainability through recycling. They also told us that they want to share the knowledge acquired through the course, without limiting it to waste issues, and collaborate with other divisions to enhance establishment of a legal system.

The State of Sao Paulo is the largest state in Brazil with a population of 44,000,000 and Sao Paulo City is the country's economic center. It is very significant for the friendship of Mie Prefecture and State of Sao Paulo that the environmental administration officials from such a state use Mie's environmental efforts as a reference for their state. ICETT has a fervent desire that learning about Japan's legal system and mechanism aiming for a Sound Material-Cycle Society and the proper management of infectious waste with the broad awareness of hospitals, etc. could become a major contributing factor for appropriate activity and solutions to various waste-related environmental issues in the future of Sao Paulo.

(Akira Maeda)



Participants (at ICETT)

### Column

#### Achievement reporting meeting held in State of Sao Paulo



Seminar in State of Sao Paulo

In May 16, 2017, Sao Paulo State Health Bureau held a seminar entitled "Cooperation of Sao Paulo State and Mie Prefecture : Health and Environment" in State of Sao Paulo and the three participants reported on the achievements of the course. A video was shown of greetings from Director of Department of Environmental and Social Affairs of Mie Prefectural Government and ICETT Executive Director as well as the Japanese industry waste disposal system with explanations by Mie government staff. Approximately 120 attendees related to the administration and Mie Prefectural Association, etc. attentively listened to the participants' reports and had active discussions.

ICETT is very happy that what the participants learned in Japan has been widely shared. Thank you very much for holding the reporting meeting.

## Japan-Asia Youth Exchange Program in Science (Sakura Science Plan)

### Outline

ICETT invited young researchers from Gansu, China (November 13 - 20, 2016) and Indonesia (February 20 - March 1, 2017) to take part in a training program subsidized by the Japan Science and Technology Agency (JST) for deeper exchange with universities and enterprise staff from various industries in Japan.

### Background and purpose

The “Japan-Asia Youth Exchange Program in Science” (Sakura Science Plan) was launched in FY2014 by JST aiming to invite outstanding young people from other Asian countries for deeper exchange in the field of science and technology between these young people and young Japanese, who are all to become future leaders. It also aims to raise interest in the latest science and technology to contribute to fostering outstanding human resources in overseas countries needed by universities, research institutes and companies in Japan and for scientific and technological development in Asian countries including Japan. ICETT invited environmental conservation researchers from Gansu, China and Indonesia to implement training programs under the respective themes of “Promotion of eco-friendly agriculture and organic food production” and “Local environmental management, mainly water quality and solid waste management”.



Program opening ceremony (China)

### Details

#### 1) Promotion of eco-friendly agriculture and organic food production (China)

Gansu in northwestern China has a variable climate, where the agriculture mainly produces drought-resistant crops basically distributed in China. With the recent growing interest in safe,

nutritious, and healthy food at home and abroad, eco-friendly agriculture and organic food production are expected in the farming areas in the Province, which has fewer industrial activities than other regions.

The program had 10 participants, made up of agricultural/food production researchers of university and government officials trying to establish a new organic food certification system in the Province.

The program started with the Japanese legal systems for agriculture and food, then moved on to how new systems have been developed as the standards gradually became stricter in response to changes in social needs. In particular, with the traceability method, they learned about the mechanism to provide food safety information to consumers and seemed to have realized the importance of appropriate legal action in food distribution as well as the production processes in order to earn trust in food safety. In the lecture about the organic certification system, they also learned the fact that many farm producers in Japan use production methods that satisfy the requirements but continue working without applying them as obtaining the certification requires a certain amount of time, effort and cost every year.

In the middle and later stages of the training, they visited organic food plants and agricultural facilities with scientific technology to hear about workers' challenges and creative ideas and to discuss issues to introduce them into Gansu. An important feature of the agricultural facilities they visited was the closed or semi-closed indoor farm field with a computer-controlled environment, which makes it possible to have a stable volume of vegetable and flower production throughout the year. As this can be applied to cold or dry regions not suitable for outdoor plant growth, the participants also had numerous questions about the equipment, operating costs and the quality of the products.



Visit to organic food plant (China)

#### 2) Local environmental management, mainly water quality and solid waste management (Indonesia)

In Indonesia, a country made up of numerous islands like Japan, environmental issues such as air and water pollution and increased waste have become apparent because of the population concentration in urban areas, domestic demand expansion, and slow infrastructure development due to recent marked economic growth. Efforts have been made in each region to resolve

these urgent issues. The nine participants of the program were university lecturers, graduate students, and government officials from each region of the country specializing in environmental management, marine pollution control and urban planning, etc.

The program started with the Japanese legal systems for water quality and solid waste management, and they learned how new systems and effort had been developed as the standards gradually became stricter responding to changes in living conditions and social needs.

Visiting sewage, general and industrial waste treatment facilities to see how sewage and waste from households and factories are treated, the participants developed better understanding about technology used and how sewage and waste should eventually be discharged into the natural environment or the recycling system.

They also saw local community association members collecting and sorting recyclables and visited a family living close to ICETT. They seem to have realized that local residents play an important role through their eco-friendly activities to reduce waste and to promote recycling, contributing to improvement of the environment.



Discussion with Toba City about marine debris (Indonesia)

The island of Toshijima, Toba City is troubled by a large amount of marine debris from outside the island, for which efforts and initiatives have been made both by the municipal government and local residents to remove the waste and to call on other municipalities to control their waste to seek for fundamental resolution of the problem. Each area of Indonesia is facing the same issues and they had active discussions with local residents about how to inform the residents/companies of other municipalities, who are the principal sources of such waste, about the situation. They also discussed measures to minimize the impact on aquafarming, the island's main industry, and challenges in tackling the issues.

## Results and prospects

Chinese farm products, which are consumed also by many families in Japan in recent years are required to have increased trust and safety both in the country and abroad. However, despite the increased demand, a comparatively small volume of organic food has been distributed in China because of the "high prices" and "lower trust in the certification system in China". However it is highly expected that production activities and establishment of a certification system in Gansu will become enhanced based on the useful ideas of the food producers and efforts of local governments by which the participants learned about in the program.

Indonesia has a high working-age population, and the young people are also actively making efforts to develop a society with both economic growth and satisfactory environmental conditions. ICETT hopes that the experience through this program will be useful for future research activities of the participants and that they will contribute to a bright future for their own countries as well as the neighboring countries with similar environmental issues.

ICETT would very much like to express its gratitude again to all the persons who provided cooperation for these two programs.

(Akiko Kise and Ayako Okuda)

## Participant's Report

### Participating in Sakura Science Plan

I truly feel blessed to be one of Indonesian participants for joining SAKURA science plan 2017 program under sponsorship of JST and organized by ICETT.

Nine Indonesian participants were come from different background such as university lecturers, graduate students, and government officials, who are engaged in research activities for environmental management. We were really enjoy our time, had great moments and experiences during our stay in Japan. I would say that SAKURA science plan is an excellent program for sharing knowledge and information about the management of wastewater and solid waste treatment. By joining this program we learned much about importance of role of legal system, the development of waste treatment installation and the social community participation to keep their environment

clean. We also have some meaningful discussion by sharing and exchange opinions during our visit to some waste treatment facilities.

Instead of excellent, this program was running very smoothly under guidance from ICETT staff, they were really nice and so friendly. We also thank to General Consulate of Indonesia in Osaka for the information about this program. Finally we hope that this program has a good mutual benefit between both countries, Japan and Indonesia.

(Dr. Pande Gde Sasmita J.)



Dr. Pande Gde Sasmita J

Entrusted by Yokkaichi City Government

## Planning and Operation of Tianjin Environmental Exchange Program

### Outline

Yokkaichi City and Tianjin City, China have had interactions in various fields since becoming friendship cities in 1980. As part of their relationship, starting in 1993, Yokkaichi City entrusted ICETT to conduct a training course to improve Tianjin's environmental issues. So far 120 persons have visited Japan to participate in training courses (756 persons participated in the seminar in Tianjin). In FY2016, a seminar was held in Tianjin and a training course in Yokkaichi focusing on "Soil pollution control measures and technology".

### Background and purpose

Tianjin's economy has had a remarkable growth rate along with concomitant environmental problems, and finding solutions to these is now a pressing issue. Therefore, the training course aims to ensure that officials of Tianjin Environmental Protection Bureau, etc. understand environmental technology and management procedures in Japan so they can help improve Tianjin's environment.

Also, in this fiscal year, the contents of the seminar were expanded and enriched utilizing the "Enhancement program for co-beneficial environmental pollution control in Asian regions", in which Yokkaichi City collaborates and cooperates with the Ministry of the Environment.

### Details

#### 1) Environmental Conservation Seminar held in Tianjin

A seminar was held in Tianjin for two days from August 18 and 19, 2016. In the seminar this fiscal year, experts from Tianjin reported on the current conditions there. Later the "laws/regulations and measures to control soil/ground water pollution", "technology to control soil/ground water pollution", "cases of control of soil/ground water pollution by chemical plants" and "generating mechanism of oxidant and method of its control" were reported on by specialists from Japan. A free discussion was also held at the end, concerning soil pollution control.



Scene at environmental protection seminar

#### 2) Training in Japan

Training in Japan was held for 13 days from October 31 to November 12 for four visitors including Tianjin Environmental Protection Bureau officials. In the training, the participants learned about the legal system and technology related to soil pollution in Japan. This was after hearing about the history of Yokkaichi pollution at Yokkaichi Pollution and Environmental Museum for Future Awareness and the current environmental administrative efforts from Yokkaichi City officials.

A training course was also held in Kobe City, another friendship city of Tianjin, to learn about cases from a different city in Japan. The participants also visited other companies undertaking soil/ground water pollution control, measurement certification bodies, facilities to treat polluted soil, etc. to learn practical issues directly related to their work.



Scene at training in Japan

### Results and prospects

In December 2016, a bill for Tianjin city anti-soil pollution operations was issued, which can be deemed to mean that this program may have become a point of reference for Tianjin's soil pollution control. It will be a pleasure if we can continue training courses related to issues in Tianjin and this program could help improve Tianjin's environment.

(Akihiro Tsuchiguchi)

### Column ICETT can also hold short-term training courses!

ICETT has held numerous training courses ranging from approximately one week to several months for visitors to Japan, and has also been entrusted with some sections of employee training courses and training programs performed by other organizations.

In FY2016, we had three requests for short-term training courses (within one week) from other companies and organizations. The whole training took several weeks but the programs related to "environment" and "industrial pollution" in it were entrusted to ICETT.

If you "wish to include environment-related training courses in the workshop", please feel free to contact ICETT. ICETT can plan training courses about environmental conservation effort and technology from even one day, utilizing the know-how obtained through the past training programs.

Entrusted by Mie Prefectural Government

## Project to Hold International Conference on Environmental Technology Transfer in Mie

### “Forum on Environmental Technology Transfer for ASEAN in Mie”

#### Outline

“Forum on Environmental Technology Transfer for ASEAN in Mie” was held as a post-summit event of the “G7 Ise-Shima Summit” in May 2016. Senior central government officials from Indonesia, Thailand, and Vietnam were invited to exchange opinions on environmental issues in their countries and Mie’s environmental technology, and discuss environmental improvement and sustainable development.

#### Background and purpose

In the “G7 Ise-Shima Summit” held in Mie on May 26 and 27, 2016, climate change, energy, environment and development were put on the agenda and sustainable development was discussed. This project responded wholeheartedly and the “Forum on Environmental Technology Transfer for ASEAN in Mie” was held as a post-summit event, where senior central government officials from three ASEAN countries (Indonesia, Thailand, and Vietnam) were invited for exchange of opinions on environmental improvement and sustainable development, as well as overseas expansion with the environmental technology of Mie-based companies.

#### Details

##### 1) “Forum on Environmental Technology Transfer for ASEAN in Mie”

Date : February 18 (Sat), 2017, 15 : 00 – 17 : 15

Theme : Environmental challenges in ASEAN countries and environmental technology in Mie Prefecture

Moderator : Eikei Suzuki, Governor of Mie (and Chairman of ICETT Executive Board)

Panelists : Senior central government officials from three ASEAN countries; Director, Natural Resources, Energy and Environment Dept., Chubu Bureau of Economy, Trade and Industry; Director General, JICA Chubu; President, Japan ALSi Co., Ltd.; ICETT Executive Director.

Participants : Total 158 persons from Mie-based companies, supporting organizations, and local government, etc.

The moderator, Governor Suzuki summarized the forum as follows based on the remarks made by the panelists.

- Having different political measures



for the environment is indeed important but education for the people and their active cooperation are also required.

- To overcome the pollution in Yokkaichi, the government made laws, the prefecture and the city made ordinances, and the companies took measures for control. However, the key to solving the issues was undoubtedly the local residents who voluntarily engaged in the environment improvement activities.
- The forum was significant with the chance to learn that a common issue with high priority in the three ASEAN countries was “water treatment (domestic sewage)” and to identify what these countries may expect from each sector in Japan.
- ICETT feels that the forum provided a good opportunity to commence cooperation among the participants and their organizations.

#### 2) Visits and welcome party

In relation to the Forum, the participants visited Mie-based companies and Yokkaichi Pollution and Environmental Museum for Future Awareness as well as other places in Mie (Ise-Shima Region). A welcome party was also held. Through these activities, we had an opportunity to promote Mie’s environmental technology to the senior central government officials from Indonesia, Thailand, and Vietnam and have better understanding about the history to overcome the pollution in Yokkaichi and the effort made by the entities, etc. In the welcome party, the participants enjoyed an Iga ninja show and local food from Mie served along with Japanese sake. Other places they visited in Ise-Shima Region included Ise Grand Shrine and Mikimoto Pearl Island with the beautiful nature, culture and tradition of Mie. The general feeling was that the Summit venue harmonized with nature, which gave us an opportunity to build closer relationships.

#### Results and prospects

ICETT has a strong expectation that this forum helped the small and medium-sized companies collaborate with different entities and develop overseas business taking advantage of their environmental technology. We will continue encouraging business development of companies with environmental technology.

(Atsushi Mizutani)

#### Column Ise-Shima Summit Memorial Museum “SumMiel”

To commemorate the summit held in Mie, the Ise-Shima Summit Memorial Museum was opened on May 26, 2017. Exhibits include panels, videos as well as the round table and chairs used in the Summit and an autograph book signed by the participating leaders, which provided the atmosphere of the summit. Visitors can enjoy quizzes on multi-monitors to learn about the Summit and the museum café offers a menu of dishes related to the Summit. Please visit and enjoy the museum!

Location :  
2F, Kintetsu Kashikojima Station  
(747-17, Shinmei, Ago-cho, Shima City, Mie Prefecture)



## International Cooperation Project on Global Environment (PFAN Asia Forum for Clean Energy Financing)

### Outline

The Climate Technology Initiative (CTI), for which ICETT serves as the international secretariat, has established the Private Financing Advisory Network (PFAN) Program as an effort to contribute to the technology transfer issue of the United Nations Framework Convention on Climate Change (UNFCCC). The PFAN Program is operated by the support of contributions from different organs in the world as an effort to secure necessary financing for climate control projects in developing countries, expanding fund procurement opportunities of developers of projects or entrepreneurs for clean/renewable energy and energy efficiency, and promotes technology transfer to developing countries and countries with economies in transition. ICETT cooperates with the PFAN Program to hold Forums for Clean Energy Financing in Asia and Africa to provide matching opportunities for clean energy project developers and investors as well as to enhance the abilities for fund procurement of project developers. The following sections give an account of the "7th PFAN Asia Forum for Clean Energy Financing" (hereinafter referred to as the Forum) held in February 2017 under the "International Cooperation Project on Global Environment" entrusted by the Ministry of Economy, Trade and Industry and the future of the PFAN Program.

### Background and purpose

The Forum intends to collaborate with PFAN to contribute to realization of fund procurement by matching project developers and investors in order to promote transfer of technology for global warming control from Japan and other countries to developing countries.

For project developers to acquire business funds for projects to help control global warming, it has been pointed out that they often lack the necessary skills to prepare written proposals and make presentations necessary for such acquisition as well as matching developers and investors. To remove such barriers, the Forum provides advice and instructions for the developers and opportunities for matching them with investors in order to achieve project realization in developing countries. This will allow transfer/diffusion of good technology from Japan and other developed countries.

### Details

In FY2016, 43 applications were received from Japan and other Asian countries in response to our invitation from April and 20 of them that passed the initial screening were invited to the capacity building workshop for project developers held on September 14, 2016. In the workshop, PFAN financial experts gave advice to clean energy business developers on how to improve investment/market values and reduce risk, etc. in order to prepare economically feasible business plans necessary to attract investment from banks and investment funds.



Workshop

Of the 20 applicants which received individualized and focused guidance from the PFAN financial experts, 12 top projects were later selected in consideration of the value proposed by the project as well as the business plan feasibility, extensibility, and benefits for environmental conservation, and were introduced at the Forum held in Singapore on February 10, 2017. The Forum was held in a form of a business plan competition, and a solar energy generation project from India received the highest award based on a strict review by the four expert judges.



Presentation



Best Award winner (second right)

## Results and prospects

The Forum had a total of 151 participants including investors, financial institutions and investment consulting firms, and provided beneficial networking for investors interested in business developers and related areas. After the Forum, there were inquiries concerning investment for the projects and we are still continuing our support for fund procurement.



Financing Forum (in Singapore)

The PFAN Program established by CTI in 2006 has expanded its activities through project support in Asia, Africa, Central and South America, and Central Asia, including the above-mentioned Asia Forum for Clean

Energy Financing. It has contributed to worldwide global warming control, providing support for 358 projects since its start, of which 87 projects were actually implemented with the total \$1.2 billion of fund procurement achieved.

For further expansion of activities, it was decided that a consortium of the United Nations Industrial Development Organization (UNIDO) and the Renewable Energy and Energy Efficiency Partnership (REEEP) would become the program secretariat from FY2017, and a financing forum was held in Wien, Austria on May 10, 2017 also to celebrate the launch of the new PFAN.

In the Vienna Energy Forum for Clean Energy and Climate Investment, which was the first forum in Europe, six projects were presented to the investors. The projects from Asia, Africa, Central and South America and Central Asia were selected based on the recommendation of PFAN coordinators in charge of the respective regions.

Following the Forum, a panel discussion was held regarding the establishment of the new PFAN and its future prospects, with the participation of Mr. Li Yong, UNIDO Director General, Mr. Martin Hiller, REEEP Director General;



Mette Møglestue, Chair, PFAN Steering Committee

Ms. Mette Møglestue, Chair, PFAN Steering Committee; and Mr. Peter Storey, PFAN Global Coordinator.

ICETT will continue to be active with the new PFAN mainly in the Asian region using our experience from its establishment and the pilot stages through to the expansion of its activities. In FY2017, an initiative for project development and funding promotion for climate change control and clean energy will be implemented to contribute for continuous expansion of the PFAN Program. It will be made through identification of projects and provision of individualized support as well as matching and networking opportunities including the Forums to provide support to realize more climate-friendly projects. (Akiko Naka)

## Column

### Palais Auersperg, Wien

The new PFAN Wien Forum for Clean Energy and Climate Investment was held in the Palais Auersperg, Wien. This building was designed by Johann Lucas von Hildebrandt and built between 1706 and 1710.



Its principal function has always been as a concert and opera hall, sometimes hosting the first performances of works of famous composers including Mozart. It has luxury spaces with its high ceiling with chandeliers. The forum participants were delighted, saying that it was an extremely Wien-like, wonderful venue.

Entrusted by the Ministry of Economy, Trade and Industry

## International Cooperation Project on Global Environment “Clean Technology Business Network Construction” Project

### Outline

In order to establish the “Clean Technology Business Network (CTBN) Program” as a support program for appropriate matching of small and medium-sized Japanese companies with clean technology helpful to control global warming (solar/water-power/biomass power generation, waste-to-energy, and energy-saving technology, etc.) and the needs for clean technology in developing countries and promotion to realize clean energy projects, effective programs were proposed in FY2016, as in FY2015, based on the verification and results of the implementation and outcomes of the model programs.

### Background and purpose

Many small and medium-sized companies in Japan have good clean technology but they have not realized or are experiencing trouble in developing overseas business as they do not have adequate know-how or information. Moreover, it is often difficult to find a reliable local business partner, etc. Meanwhile, there are numerous project developers overseas, particularly in developing countries, that require clean technology and are looking for technology from other countries, which can address their needs.

Based on the above background, this project aims to contribute to build the CTBN Program to provide support for small and medium-sized companies in Japan and project developers in developing countries to enhance their matching and realization of clean projects.

### Details

In FY2016, the following support activities were implemented and their impact verified based on the CTBN model programs examined through the project in FY2015.

- Identified reliable project developers from Southeast/South Asian developing countries in need of clean technology and specified needs in clean technology
- Identified small and medium-sized Japanese companies with clean technology corresponding to the specified needs of each country
- Provided matching opportunities
  - Held “Business Matching Forum in Indonesia” (January 11,

2017)

- Provided opportunities for individualized on-line business meeting using Internet tools
- Provided individualized consultation by specialists for project developers in Japan and developing countries
- Held a workshop in Japan for Japanese companies (December 12, 2016)

Based on the verification of the above activities, modified model programs were newly proposed.

### Results and prospects

A Business Matching Forum held in Indonesia as the main support activity experienced great success with nine small and medium-sized companies from Japan, 32 local project developers took part and 57 individualized business meetings were held.

In this fiscal year, opportunities for individualized on-line business meetings were newly provided using Internet tools for the needs in other countries than the forum venue country, namely, India and The Philippines, etc., which resulted in successful matching opportunities for countries in broader regions without requiring time and cost.

The result achieved includes that, as of May 2017, 20 proposals continue in negotiation, of which six proposals have proceeded to non-disclosure agreements as individualized specialist follow-up was further given to the Japanese companies and local project developers for support in communication as well as examination of business models and financing after the matching service at the forum, etc.

The modification of model programs proposed this fiscal year based on the above achievement is expected to establish the support scheme of the CTBN Program.

(Yasuko Ozaki)



Business Matching Forum in Indonesia

Entrusted by Yokkaichi City Government

## Global Environmental Workshop

### Outline

ICETT held a “Global Environmental Workshop” for high school students as a project entrusted by Yokkaichi City. The programs of this fiscal year were implemented under the theme “To Create a Society with a Comfortable Living Environment – Let’s keep our air and water fresh and clean for life on earth!” for eight days from August 1 - 8, 2016.

### Background and purpose

This “Global Environmental Workshop” is held during the summer vacation every year inviting high school students from Tianjin, China, a friendship city and Long Beach, the USA, a sister city of Yokkaichi to discuss environmental issues, etc. and seek deeper mutual understanding with high school students from Yokkaichi. It also intends to give international perspectives to think about the environment to revitalize environmental conservation activities in each city.

The workshop in this fiscal year was held under the theme “To Create a Society with a Comfortable Living Environment – Let’s keep our air and water fresh and clean for life on earth!”

### Details

At Yokkaichi Pollution and Environmental Museum for Future Awareness, the students learned about the history of Yokkaichi pollution and how it was gradually overcome through measures to improve the environment taken jointly by the citizens, companies and government. They also visited Yokkaichi City Clean Center, which opened in April 2016, to learn about the treatment of combustible waste, how the thermal energy generated by combustion is utilized, as well as how slag and waste metals are reused in its latest



Visited Mayor Tanaka and Committee Chairperson Murayama (Urban/Environmental Committee)

eco-friendly disposal facility.

The new program tried in this project this fiscal year was the exchange and learning program with students from Escolapios Kaisei Catholic Senior High School. Kaisei Senior High School students planned an environmental learning activity in which the participants of Global Environmental Workshop participated for deeper exchange by playing an environmental conservation-related game. They also visited Yokkaichi Port Building and learned about air/water pollution control in the port when they rode on the port patrol boat “Yurikamome”. During a visit to a chemical factory in the city, they also found out how air/water pollution is controlled there.



Visited a company in the city's industrial complex

As international cultural exchange is also a major objective of this project, the participants this fiscal year also had experiences to make “Hinaga Uchiwa (fans)”, a traditional Yokkaichi craft product, and enjoy tea culture at a *kabuse-cha* café in the city.

A tour to visit outside the city was also held to take the participants to Akame 48 Waterfalls and Ninja Museum of Igaryu. At the Waterfalls, they learned about the life of giant salamanders, registered as a Japanese national treasure and efforts taken to protect the beautiful valley. At the Museum, they learned some history and culture of Japan through *ninja*, also popular in other countries. On the last day, the participants wore *yukata* (cotton kimono) and participated in the Grand Yokkaichi Festival, and this experience in Japanese tradition and culture helped raise their interest in Japan.

### Results and prospects

The participants could deepen their insights into environmental issues from international perspectives gained through the exchange in communal living at ICETT and by looking back at their own countries. I hope that the experiences in this Global Environmental Workshop will help them to accomplish great things in the future.

(Kana Mizutani)

Entrusted by the Chubu Bureau of Economy, Trade and Industry

## FY2016 “Regional Core Business Creation and Support Program” (Project for Promoting Environmental Industry in Chubu Region (Network-type))

### Outline

ICETT supports companies in the environmental industry (i.e. companies which use their characteristic technology for environmental conservation) in Chubu Region to build networks and promote collaboration. The aim is establishment of new technology to create a core business which will collaborate and grow with other companies having peripheral technology, and to develop domestic/overseas markets. Period : June 1, 2016 - March 31, 2017

### Background and purpose

The environmental industry in Chubu Region is based on its successful mastery of pollution issues and its technology has developed through environmental measures in the key automobile and aircraft industries. The future growth of this environmental industry needs both domestic and overseas development. However, such development also needs enhancement of competitiveness with companies in the environmental industry in other regions in Japan and overseas.

This project provided and supported opportunities for intercompany and industry-academia cooperation to expand market and technical capabilities. The aim was to create core business that collaborates and grows with other companies which have peripheral technology and to strengthen the competitiveness of the environmental industry in Chubu.

### Details

#### 1) “Enterprise Database Working on Environmental Business in Chubu Central Region of Japan” and “Chubu Region Environmental Technology Series”

The “Enterprise Database Working on Environmental Business in Chubu Central Region of Japan” and the “Chubu Region Environmental Technology Series” were improved and revised mainly by enriching and revising their English version.

#### 2) Open innovation by large companies

Lately, it is becoming popular to implement open innovation and introduce external technology seeds to accelerate technical development. The “transmission of technical needs” and “interview with companies with technology seeds” by Osaka Gas Co., Ltd. were held to collaborate with large companies to develop business for companies in the environmental industry.

#### 3) Environmental Business Alliance Matching Seminar

In order for the business cooperation among domestic regions, ICETT held the “Environmental Business Alliance Matching Seminar in Nagoya” to provide an opportunity of interviews with

companies seeking collaboration with Chubu-based companies. Invited companies introduced their technology to Chubu-based companies at the seminar. Additionally, ICETT supported Chubu-based companies which participated in “Environmental Business Alliance Matching Seminar in Kyushu” held for business cooperation with companies in Kyushu.



#### 4) Industry-academia Cooperation Seminar for Ceramics Technology

To facilitate industry-academia cooperation in ceramics technology widely applicable to environmental fields, the seminar was held to introduce seeds from universities, etc. and interview meetings to encourage research and development between academia and industry.

#### 5) Seminar for Development of Resource-recycling Business

Increasing levels of Carbon Fiber Reinforced Plastics (CFRP) waste, extensively used in automobiles and aircraft, has become a concern. The seminar was held to support business development to reduce and effectively use CFRP waste, inviting suppliers, user companies, and recyclers as lecturers.



#### 6) Exchange among companies in the environmental industry

An exchange meeting was held for environmental industry associations supported by assistance organizations in Chubu Region, in order to introduce technology seeds of the companies and support promotion of the intercompany business collaboration in the region.

#### 7) Support for business expansion to Viet Nam

Viet Nam which has a high industrial growth rate and emerging environmental issues offers good prospects for business expansion for environmental companies as both its public and private sectors are interested in environmental improvement. ICETT held a study meeting for business



development and sent Business Missions (technology introduction seminar, business meetings, and policy dialogues with local governments) to Ba Ria-Vung Tau and Long An Provinces, Viet Nam.

**8) Support for business expansion to Indonesia**

Indonesia is another country with good prospects for business expansion for environmental companies due to its high industrial growth rate and emerging environmental issues. ICETT held a study meeting for business development and sent a mission (technology introduction seminar and business meetings) to West Java and Special Capital Region of Jakarta.



**Results and prospects**

Numerous companies have participated in our events and intercompany and industry-academia cooperation has progressed through business meetings. Some companies which participated in the overseas missions are having business negotiations with local companies or have started local prototype testing, demonstrating the effectiveness of the support.

Innovation and development of companies are necessary for environmental technology transfer. ICETT will continue its efforts as long as we have opportunities.

Finally, let us express our gratitude to the collaborators in this project: domestic collaborators of Nagoya Chamber of Commerce & Industry, JICA, JETRO, etc. and overseas collaborators of Ba Ria-Vung Tau People's Committee, Long An People's Committee, Indonesian Employers Association, and Consulate-General of the Republic of Indonesia in Osaka, etc.

(Eiichi Masuda)

**Column**

**Visitors from Indonesia**

In April 2016, we had visitors from Indonesia. An official of Banten Environmental Management Bureau, who helped us as the counterpart in Business Matching Seminar in Indonesia (FY2015 Regional Innovation Development Project entrusted by Chubu Bureau of Economy, Trade and Industry) brought a four-person group to visit and stay at ICETT.

The four were friends from the university studying environmental conservation together and were all working in the area. They had aspiration to learn about environmental technology/management system in Japan and ICETT helped them to visit water purification/effluent treatment facilities and

have exchange with Chubu-based companies in the field.

Though it was a short trip, they enjoyed a full schedule thanks to the enthusiastic acceptance of the persons who received them and were really happy to acquire helpful information through facility visits and discussions with administrative and company staff.

ICETT will make use of the network built through our previous projects and continue our contribution for environmental improvement in Indonesia and support for Chubu-based companies involving environmental business.

- Period of visit : April 18 (Mon) - 22 (Fri), 2016 \* Stayed at ICETT until the 21 (Thurs)
- Visitors : One official of Banten Environmental Management Bureau, two environmental consultants, one person in charge of health/safety/environment issue in a private company: Total four persons
- Major activities : Visit to water purification facility (Water Treatment Plants of Nabeyaueno (Nagoya City, Aichi) and Katada, and Mie Water Quality Control Information Center (Tsu City, Mie)), Visit to effluent treatment facility (Tsu yakin Kagaku Seni Co., Ltd.), Exchange meeting with Chubu-based companies with environmental technology



Entrusted by the Ministry of Economy, Trade and Industry

# Survey of Industrial Pollution Control Measures (Case Studies of Pollution Control Management in the Companies)

## Outline

To enhance companies' efforts for pollution control management, ICETT has compiled cases of practical efforts made by small and medium-sized companies and edited a set of Case Studies regarding the succession of know-how and technologies involving pollution control management, human resources development, and effective and efficient management structure on the environment at small and medium-sized companies. Seminars for nationwide dissemination and publicity were also held.

## Background and purpose

The government has established a system whereby an organization of pollution control managers are established at "Specified Factories" to promote a pollution prevention system.

Japan no longer has spreading industrial pollution but there are issues, e.g., company employees qualified with the national license are aging and their skills have not been handed down, or the important points on pollution control management have been lost or have not been fully clarified. On the other hand, problems such as falsification of measurement/notification data do occur and it is time to think about rebuilding company compliance.

For this reason, ICETT compiled a set of information concerning effective methodology of pollution control management from small and medium-sized companies in particular and arranged for its dissemination for efficient introduction of valid measures and know-how for pollution control management in companies.

## Details

Practical information was compiled mainly in small and medium-sized companies in eight districts such as Hokkaido, Tohoku, Kanto, Chubu, Kinki, Chugoku, Shikoku and Kyushu by literature survey and questionnaire survey for businesses and local governments (prefectural/municipal government). Based on these results, coupled with interviews about the experience of recovery/improvement after past incidents in the factory, 21 case studies were compiled in a booklet titled "Case Studies on Effective Efforts for Pollution Prevention 2016-Hints for familiar and practical efforts in small and medium-sized companies"



Case Studies

(hereinafter "Case Studies"). "Case Studies" can be downloaded from the METI website: "Pollution Control Guideline". [http://www.meti.go.jp/policy/energy\\_environment/kankyokeiei/environmentguideline/dlguide.html](http://www.meti.go.jp/policy/energy_environment/kankyokeiei/environmentguideline/dlguide.html)

Utilizing this "Case Studies", ICETT conducted dissemination seminars in eight places nationwide targeting companies/business associations/local governments interested in pollution control management under cooperation with regional bureaus of METI. The survey results as well as cases reported by companies, trend and recent circumstances of pollution control manager systems, and effective measures for pollution control management in companies were reported. "Succession of technical know-how" was also featured as one of the keys to solve intergenerational and social problems found in the maintenance of pollution control manager systems.

## Results and prospects

In the seminars, company managers talked about cases of errors and improvement they experienced. The participants could learn that other companies have similar problems as they have in daily work and there were cases of successful solutions to such problems. In the post-seminar questionnaire to the participants, there were opinions from the companies, e.g., "we will use what we learned in the seminar and ensure early communication of problems in the case of any violation", and numerous sympathetic remarks for the necessity of an education system to ensure there will always be someone with the information in the organization as well as the meaningful utilization of re-employment workers. There were also opinions from local governments that "we could have specific information about how companies make effort and what they wish" and "we had good information for future guidance for companies as to measures to obtain qualification, training for incidents and having reporting meetings, etc."



In general, it cannot be said that there are numerous small and medium-sized companies where pollution control management can be effectively implemented. However, there are a lot of companies that have improved and maintained their efforts by positively considering subsequent measures, even with companies that have previous failure cases. Being community-based, a lot of the small and medium-sized companies have been seriously strengthening their compliance aspects, because should any trouble occur, it would have crucial effects on the enterprises' existence.

We would like to take this opportunity to express our deep appreciation to the persons who kindly cooperated with the survey and seminars.

(Maki Tamura)

## ICETT's Program

## Mie Prefecture Global Business Promotion Council "Environmental Panel"

## Outline

In March 2016, the Environmental Panel with ICETT as its secretariat was approved at the Planning and Management Committee of Mie Prefecture Global Business Promotion Council. In November 2016, its first meeting was held at "Mie Leading Industry Exhibition 2016", and the "Hong Kong Environmental Business Seminar" was held at the meeting with the cooperation of the Hong Kong Trade Development Council.

## Background and purpose

In FY2014, "Mie Prefecture Global Business Promotion Council" was established to enhance the international business development of Mie-based companies, etc. Following the Taiwan Panel and the Aerospace Panel, the establishment of the Environmental Panel was decided with ICETT serving as its secretariat.

## Details

## 1) "1st Environmental Panel"

Date : November 11, 2016

Location : Seminar Room 3, Yokkaichi Dome

Participants : Mie-based small and medium-sized

companies, Mie University, Yokkaichi University, Mie Prefecture, Chubu Bureau of Economy, Trade and Industry, JETRO Mie, JICA Chubu

Contents : Establishment of the terms and conditions of the Environmental Panel, selection of the chairperson, and discussions including self-introduction of the participants.



## 2) Hong Kong Environmental Business Seminar

Along with the 1st Environmental Panel, the Hong Kong Environmental Business Seminar was held with the cooperation of Hong Kong Trade Development Council. A memorandum was signed, of understanding on mutual cooperation with Mie in July 2016.

Lecturer : Mr. Ricky Fong from Osaka Office, Hong Kong Trade Development Council

Lecture contents : Economic conditions and trend of environmental and energy saving business in Hong Kong

Participants : Total 31 persons from Mie-based companies and supporting organizations



## Results and prospects

Through efforts with the Environmental Panel, ICETT will promote Mie-based companies' overseas business development to utilize environmental technology. (Atsushi Mizutani)

## ICETT's Program

## Sewage Works Exhibition '16 Nagoya

## Outline

Taking the occasion of the "Sewage Works Exhibition" held in Nagoya for local public organizations, etc. ICETT exhibited at the Forum's booth as a member of the "Life of Water Chubu Forum" and presented its activities such as overseas and domestic human resources development training courses and surveys in the water field and support for overseas business development promotion.

## Background and purpose

Invited by the "Life of Water Chubu Forum" to co-exhibit with other member companies in the Forum's booth at the "Sewage Works Exhibition" held in Portmesse Nagoya on July 26 - 29, ICETT presented its overseas and domestic activities in the water field and water-related companies in Chubu Region.

## Details

ICETT had a panel exhibition to present its activities such as overseas and domestic training courses and surveys in the water field for human resources development, and support for overseas business development promotion. An introduction video was shown, and leaflets distributed of events and ICETT's training facilities.

Pamphlets of water-related companies from "Enterprise Database Working on Environmental Business in Chubu Central Region of Japan" were also exhibited. This was made by ICETT and issued by Chubu Bureau of Economy, Trade and Industry as part of the support for environmental business development for companies.

## Results and prospects

It was a good opportunity to publicize our activities to visitors and to meet a lot of specialists in the water field. It was also a chance to have closer contact with the "Life of Water Chubu Forum" which invited us to exhibit at the Sewage Works Exhibition. We wish to utilize this experience for our future activities. We would like to take this opportunity to express our deep appreciation to the persons who visited us and those involved in the activities.

(Maki Nagai)



ICETT's Program

## Program to Participate in Exhibition and International Environment Program

### Outline

ICETT has participated in exhibitions and events for family to introduce its activities. We have also received visitors and visited schools and universities to hold international environment program courses. The column describes some episodes and cases from when we collected information for the international environment program regarding the management implemented by companies in Mie Prefecture.

### Background and purpose

ICETT has introduced its activities, accepted domestic and international visitors, and visited schools and universities to implement the international environment program to raise awareness about environmental issues.

Visitors : Mie Prefectural Kanbe High School, Yokkaichi City Oyachi-Kojo Elementary School, etc.

Visited sites : Yokkaichi Pollution and Environmental Museum for Future Awareness, Escolapios Kaisei Catholic Senior High School, Yokkaichi City Sasagawa Junior High School, Yokkaichi City Chubu Junior High School, etc.

ICETT has also participated in other environmental events, etc. mainly supported by Mie Prefecture and Yokkaichi City.

### Results and prospects

In FY2016, total 1,682 person participated in our events and international environment program, etc., which presented opportunities to introduce ICETT. We would like to continue our community-based activities involving global environment issues for a wide range of age groups, from elementary schoolers to university students and adults. We focused on the "5S", with which Japanese are familiar, in this international environment program. We would like to enhance awareness rising with creativity, introducing technology and activities made in Japan, which we can actually be proud of. (Hide Mashita)

## Column Made in Japan - "5S" activities of companies -

In the manufacturing industry in Japan, there is a word "5S" used as a watchword to improve the work environment. "5S" indicates "Seiri (Sort)", "Seiton (Set in order)", "Seiso (Shine)", "Seiketsu (Standardize)" and "Shitsuke (Sustain)". Many companies in Japan implement routine "5S activities" which are considered to indirectly lead to energy saving. Also in ICETT, enhancing 5S activities was one of the helpful measures to understand Cleaner Production (CP)\* in our previous project to implement human resources development in charge of the dissemination and promotion of CP. For this reason, we would like to introduce some cases of Japanese companies practicing 5S activities.

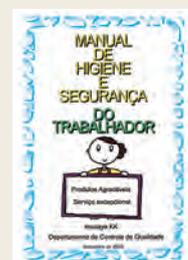
In Tsuji Oil Mills Co., Ltd. (<http://www.tsuji-seiyu.co.jp>) in Matsusaka City, Mie, the 5S Activity Promotion Team has been formed to lead the efforts of the entire workforce. In particular, efforts are made to ensure an adequate amount of cleaning equipment and industrial tools is located in necessary places to facilitate checking their availability.



Example of 5S activity at Tsuji Oil Mills Co., Ltd. ("Seiton" (Set in order))

Imuraya Co., Ltd. (<http://www.imuraya.co.jp>) in Tsu City, Mie has a manual with specific explanation of 5S activities to guide their employees as they have numerous workers from South America and other countries.

These two companies have promoted the 5S activities to ensure "strict food sanitation and safety management", and the persons in charge told us that "it has improved organizational behavior" and "the reporting meetings for 5S activities held twice a year serve to raise awareness and raise opinions among employees". Practice of the 5S activities is highly recommended.



Employee manual of Imuraya Co., Ltd.

\* Cleaner production (CP) : Production technology to reduce environmental load, e.g., resource and energy saving in production process, reduction of harmful substances and waste, etc.

### Invitation to use ICETT facilities



ICETT has accommodation and training facilities, which are mainly used for training for visitors from overseas countries, but they are also available for training of company employees, etc. ICETT can serve food from different countries, for example, halal food for Muslims and we have received favorable opinions from persons in charge. Please feel free to contact us. Visits to the facilities can be arranged.

For more details/inquiry, visit <http://www.icett.or.jp/english/shisetsu/index.html>