For the future of the Earth

INTERNATIONAL CENTER FOR ENVIRONMENTAL TECHNOLOGY TRANSFER

SLETTER

Purpose of establishment

The International Center for Environmental Technology Transfer (ICETT) was established through industrygovernment-academia cooperation for the purpose of transferring technologies for environmental conservation owned by our country and various foreign countries to other regions and alleviating environmental problems on a global scale.

ICETT aims at conservation of the global environment and sustainable development of the global economy by implementing various projects according to the characteristics of various foreign countries and by promoting smooth technology transfer.



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Human Resource Development Program Towards Zero Emission in Asian Countries:Seminar in the Philippines



Outline

Utilizing the Association for Overseas Technical Cooperation and Sustainable Partnerships (AOTS) subsidy, ICETT held the Awareness-raising Seminar on Waste to Energy in the Philippines (ASWEP) three times in Clark, Province of Pampanga, the Philippines.

Background and purpose

In April 2021, the Government of the Philippines formulated its long-term climate change strategy and Nationally Determined Contribution (NDC), aiming to cut GHG emissions by 75% from 2020 through 2030 by promoting clean energy measures that utilize renewable energy and alternative fuels.

The Clark District, a special economic zone, is facing spikes in coal and other energy prices and environmental issues such as increasing waste resulting from its growing population and industrial activities, among other items. This requires urgent countermeasures.

In collaboration with the Philippine Department of Science and Technology (DOST), ICETT set its focus on Waste-to-Energy and held a seminar to introduce the Refuse-derived Plastics & Paper densified Fuel (RPF) technology held by Japanese small and medium enterprises (SMEs) and associated small-sized RPF boiler technology.

Details

The seminar took place three times—in July and November 2023 and February 2024 in Clark, Province of Pampanga, and Metro Manila, respectively, featuring invited lecturers from Japanese companies and academia. They exchanged opinions with participants from local enterprises during the lively seminar.

First seminar (July 20 to July 26, 2023)

Topics such as carbon neutrality (CN), lifecycle assessment (LCA), examples of local production and consumption for

resource circulation, and environmental activities for local communities in Japan were introduced to give the participants an understanding of resource circulation measures and technologies. The participants also had the opportunity to visit local companies that are taking the lead in resource circulation.



Factory tour



On the left) Prof. Hosoda, Vice Chancellor of Tokai University (Remote participation)

Second seminar (November 6 to November 9, 2023)

An academic lecturer gave an overview and explained the importance of LCA. The lecturers from Japanese industries explained the significance, characteristics, mechanism, and issues of RPF, an alternative fuel made primarily from waste plastics, and the boilers that use it as fuel.



Dr. Masahiko HIRAO Senior Research Fellow, Research Center for Advanced Science and Technology, The University of Tokyo





CEO, ICROSS Co., Ltd.

Mr. Masaki SHIMOBEPPU CEO, Daiwa Enelf Co., Ltd.

Third seminar (February 7, 2024)

We shared information on outcomes obtained through this seminar and remaining issues. Certificates were granted to the participants during the closing ceremony.

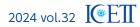


DOST and ICETT officials

Results and prospects

We have received reports that several enterprises and research institutes began researching and considering RPF utilization, as well as circular use of RPF and other types of plastics, following this seminar. DOST also made a proposal regarding the standardization of RPF.

We are planning to hold this seminar again next fiscal year and beyond, hoping that the event will pave the way to active RPF utilization and contribute to promoting Waste to Energy in the Philippines.



Systematic Household Waste Segregation and Discharge Promotion Project on Babeldaob Island in the Republic of Palau

Outline

In partnership with the Bureau of Public Works, Ministry of Public Infrastructure, Industries and Commerce (hereinafter "BPW") and the Ministry of Education of the Republic of Palau (hereinafter "Palau"), Mie Prefecture and ICETT have been working on the diffusion of systematic household waste segregation and discharge systems by community-based teams and school education-based teams from February 2023 to January 2026.

Background and purpose

In Palau, a small island nation with a population of about 18,000 people and a beautiful natural environment, a large number of tourists generate waste every day. However, waste is not segregated there. Accordingly, Palau needs to extend the lifetime of its newly developed waste disposal site as long as possible. Until now, ICETT facilitated household waste segregation and discharge, as well as resource recovery, with resource stations by raising awareness among the residents of two areas. During the second phase that started in 2023, we are aiming to facilitate waste segregation and discharge from a broad perspective based on the model cases of the two areas.

Details

We have been carrying out waste segregation activities with residents of Ngatpang and Aimeliik States on Babeldaob Island, as well as teachers and students of eight elementary schools on the island, forming community-based teams and school education-based teams.

The community-based teams discussed a plan to develop a



Briefing session by BPW

waste segregation and discharge system with a resource station, and also held briefing sessions for community residents.

The school education-based teams received guidance

from Japanese experts on introducing lessons incorporating the Education for Sustainable Development (ESD) concept. Team members, mainly comprising teachers, were invited to Japan for training on waste segregation and discharge initiatives as well as how environmental education is done in Japanese schools.



Expert workshop

Results and prospects

The community-based teams have now started building a resource station. We will hold a series of briefing sessions to obtain consent from residents, which is indispensable for starting waste segregation and discharge. The school education-based teams have reported that each school has been practicing the ESDbased lessons prepared by the team-member teachers and gained confidence by confirming a positive impact on the students. We will keep supporting this initiative fine-tuning the lesson quality.

Project commissioned by Yokkaichi City



Outline

Commissioned by Yokkaichi City, ICETT held a Yokkaichi City Promotion Seminar in Hai Phong City, Vietnam, with which Yokkaichi City has signed a memorandum of understanding on economic exchange.

Background and purpose

Representatives of Yokkaichi City traveled to Hai Phong City from November 20 to November 24, 2023. During the trip, they visited the Hai Phong City People's Committee and the Ministry of Planning and Investment's Foreign Investment Agency to exchange opinions on future economic exchange between Hai Phong and Yokkaichi. They also visited the Embassy of Japan in Vietnam, JETRO Hanoi, and Japanese enterprises in Hai Phong to collect information and share views on Vietnam's economic conditions. Commissioned by Yokkaichi City, ICETT implemented a seminar to promote Yokkaichi City with the aim of facilitating economic exchanges between the two cities during this trip.

Details

The Yokkaichi City Promotion Seminar took place in a hotel in Hai Phong. Following the opening addresses by the Mayor Tomohiro Mori of Yokkaichi and the President Ken Ogawa of the Yokkaichi Chamber of Commerce and Industry, Mayor Mori explained the profile of Yokkaichi City and the Industrial Promotion Dept. of Yokkaichi City introduced major local industries. ICETT explained Yokkaichi City's environmental initiatives and future vision.



Results and prospects Sixty-five people joined this seminar, including representatives

from the Hai Phong City People's Committee and local enterprises. During the Q&A session at the end of the seminar, the participants actively commented on the prospects for Yokkaichi's economy, ICETT's activities, the feasibility of business formulation in Vietnam, and other topics.

Tianjin Environmental Exchange Project Planning and Management Work



Outline

ICETT has been consecutively commissioned by Yokkaichi City since 1993 to conduct annual training with the aim of improving environmental problems in Tianjin City. In FY2023, we prepared a lecture video on the theme of carbon neutrality in Yokkaichi City and held the seminar, using the video, in Tianjin City.

Background and purpose

Tianjin City's rapid economic growth has led to a large number of environmental problems there, and mitigating their impacts has become an urgent challenge. This project was implemented to enable Tianjin government officials and other stakeholders to understand and utilize environmental technologies and management methodologies developed in Japan to improve the city's environment.

Details

We held the seminar in Tianjin using the lecture video prepared in Yokkaichi as follows. Date March 8, 2024 Participants 48

Contents (1) Yokkaichi City's carbon neutrality initiatives (2) Introduction of the Yokkaichi Pollution Judgement 50 Years Exhibition

Results and prospects

The participants shared the following feedback

- Impressed that not only initiatives towards and technologies for attaining carbon neutrality but also the topic of civic communication were included.
- Learned about the need to tighten environmental management from Yokkaichi's experience with pollution.

We further aim to adopt themes that fit well with the environmental issues in Tianjin in order to help improve the city's environment.

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Lecture video

Project commissioned by Yokkaichi City

Global Environment Workshop for High School Students



Outline

Commissioned by Yokkaichi City, ICETT held a Global Environment Workshop for High School Students under the theme of "Towards attaining carbon neutrality: Let's consider the issue of global warming."

Background and purpose

Every year during the summer vacation period we invite high school students to Yokkaichi from Tianjin, China, and Long Beach, USA, which are our friendship and sister cities. Through holding the workshop and providing opportunities for training and opinion exchanges mainly on environmental issues, we aim to deepen mutual understanding between these invited students and Yokkaichi's high school students, as well as enable them to consider these issues from global perspectives and actively engage in environmental conservation activities. We held the workshop in Japan this fiscal year for the first time in four years after the COVID-19 restrictions eased.

Details

The workshop took place from July 31 to August 7, 2023. Prof. Satoshi Kaneko of Mie University lectured on the basics of carbon neutrality, providing an opportunity to consider how to cope with global warming. The participants also visited a hydrogen station and a biomass power station. In addition to these activities, they learned about Yokkaichi's history of pollution and environment restoration and furthermore, they experienced Japanese flower arrangements and other cultural exchange activities. At the final presentation session at the end of the workshop, the participants were divided into two teams regardless of their hometown and presented their plans to work on in their hometown towards solving the issue of global warming. Prof. Noriko Sugiyama of Tokai Gakuen University then gave feedback on their presentations as well as a lecture titled "Living in the era of the climate crisis," which deepened the understanding of the workshop participants and citizen attendees on global warming.

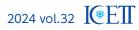
Results and prospects

Through the workshop program, we provided the participants with an opportunity to understand the importance of attaining carbon neutrality and to consider and take action against

environmental problems. We hope that the participants will apply this precious experience, practice it in their everyday efforts toward improving environmental problems, and actively play roles as human resources equipped with global perspectives.



Commemorative photo taken after the achievement presentation session



3

ASEAN Cooperation Project - Capacity Development for ASEAN Member States on Identification and Differentiation of Spilled Oil and Tarballs

14 LUFE BELOW WATER

Outline

Utilizing the Japan-ASEAN Integration Fund (JAIF), ICETT held training to develop ASEAN states' capacity to identify and classify spilled oil and tarballs* for invitees from ASEAN member countries engaging in marine environment conservation and chemical analysis.

* Heavy oil that has been spilled into the sea has lost its volatile components and solidified due to weathering.

Background and purpose

The Japan-ASEAN Integration Fund (JAIF) was established to support ASEAN's effort to advance the integration of the ASEAN community. Utilizing JAIF, ICETT conducted training on spilled oil composition analysis and utilization of various analysis support tools to identify contributors to spilled oil in the ocean and tarballs, which problems facing the entire ASEAN community. This was in response to a proposal by the Thailand's Pollution Control Department, acting as the secretariat of the ASEAN Working Group on Coastal and Marine Environments.

The training took place in the metropolitan zone, including locations in the prefectures of Tokyo and Kanagawa from May 15 to May 19, 2023. The participants comprised 29 individuals in charge of marine environment conservation and chemical analysis, among other fields, from ASEAN member states (AMSs).

Details

The participants attended lectures by Japanese researchers in this field, as well as representatives of enterprises and organizations specializing in spilled-oil removal technologies, spilled-oil dispersal forecasting, and chemical analysis. Furthermore, they visited research institutes equipped with oil analysis facilities or spilled oil recovery equipment to observe them.

Results and prospects

On the final day of the training, the participants discussed how to build a common oil fingerprint library as a forensic tool for the

identification of the source of the spilled oil and tarballs, actively exchanging their opinions.

The ASEAN nations will work on individual and regional efforts to implement ideas formulated through this training.



Lecture

Project commissioned by the Japan International Cooperation Agency (JICA)

JICA Knowledge Co-creation Program for Young Leaders in Environmental Management with a focus on Urban Environmental Management

Outline

Commissioned by the Japan International Cooperation Agency (JICA), ICETT implemented JICA Knowledge Co-creation Program in Urban Environmental Management for African junior governmental officers.

Background and purpose

Developing countries have been facing severe damage from environmental pollution that accompanies economic growth, industrialization, rapid urbanization, population concentration, and the like. Improperly treated waste in particular has been polluting the air, soil, and water and generating health problems, and furthermore, impacting climate change and resulting in marine plastic litter. With the aim of working on these environmental issues to develop healthy, clean towns, we implemented this training to enable participants to learn in detail about how Japan manages its environment and understand the need for pollution countermeasures in their respective countries.

Details

We held in-Japan training from January 19 to February 2, 2024, for seven government officials from Ghana, Zimbabwe, South Sudan, Tanzania (two people), Botswana, and the Republic of South Africa who are in charge of waste, hygiene, and local governance.

In light of the current situations in the participating countries, (1) waste management and resource circulation were set as the main topic, and (2) securing safe water resources as the sub-topic of the training. Concerning (1), we introduced initiatives toward establishing a circular society, including technologies to effectively utilize waste food and mechanisms and technologies of home appliance recycling, as well as RPF technology, which utilizes used paper and plastic

effectively, in addition to the flow of general municipal waste and industrial waste recovery and disposal. Regarding (2), we explained the overall picture of water and sewage treatment businesses and the distributed water supply system for areas with no water

infrastructure. Furthermore, we referred to soft components such as the record of pollution measures, environmental policies in large-scale urban areas, environment awareness raising, and environmental education to deepen the participants' knowledge from a broader viewpoint.



Training

Results and prospects

The participants appreciated this training something that aligns with problems they are facing, and that what they learned from it is beneficial for measures or individual duties in their countries. They also gained the understanding that initiatives on urban environment management in Japan are built on organic connections among diverse sectors, such as enterprises, industrial groups, academia, civic groups, and communities, in addition to public administrative agencies.

We hope that the knowledge they gained through this training will be shared with many stakeholders in their respective countries for better environmental management.

JICA Knowledge Co-creation Program: Waste Management towards Control of Marine Litter (B)



Outline

Commissioned by JICA, ICETT has implemented the JICA Knowledge Co-creation Program: Waste Management towards Control of Marine Litter (B) in 2023 for four consecutive years since FY2020.

Background and purpose

Recently, marine litter, especially marine plastic litter, has been rapidly increasing around the world due to waste generated inland flowing into the oceans due arising from inappropriate waste management. Developing countries are facing a pile of diverse challenges such as understanding the current actual situation surrounding marine litter, with the prospect of introducing countermeasures. Against this background, JICA commissioned us to implement the training in the title to contribute to initiatives against marine litter, such as plastic resource circulation.

Details

We held in-Japan training for government officials in charge of waste management from Brazil, Egypt, and Jamaica (three officials in total) from October 2 to October 27, 2023. One of the pillars of the training program was waste management and plastic resource circulation, which will help to reduce waste generation inland indispensable for fundamentally solving the problem of marine litter. Another pillar of the training program comprised impacts of marine litter on the environment, ecosystems, and economy, and the marine litter monitoring methodologies. Through this training program designed to enable the participants to comprehensively grasp the marine litter problem from the inland and offshore perspectives and consider policy measures and technologies to solve them, the participants deepend their knowledge of this issue as well as countermeasures introduced in Japan

elsewhere. They also learned the roles, responsibilities, activities to fulfill them, and the need for partnerships in diverse sectors, such as public administrative agencies, enterprises, research institutes, and civic groups. On the final day, the participants presented the action plans they formulated to apply what they learned from the training in their countries.



Workshop

Results and prospects

The participants successfully gained knowledge that is informative in tackling the problem of marine litter in their countries, and got to know people who share the same objective as well. We hope that the participants will mutually grow on the basis of this experience and work on their action plans to help solve the problem of marine litter.

Subsidized by the Japan Science and Technology Agency (JST)

Sakura Science Exchange Program



Outline

Inviting nine students from the University of the South Pacific, we held a science-technical exchange under the theme of Sustainable Economic Development of the Pacific Island Countries through transformation to a Circular Society.

Background and purpose

With increasing dependence on imports for daily necessities, the volume of waste in Pacific Island is escalating. In these countries, waste is mainly transported to landfill sites, but their remaining capacity is nearing its limit. Furthermore, incineration of plastics and illegal dumping are causing environmental pollution. In light of this situation, ICETT aimed to promote proper waste management and resource circulation methods to form a circular society in each island country.

Details

We invited nine students and one faculty staff member from the

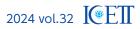
University of the South Pacific to the training, which took place from January 17 to January 24, 2024. The participants learned about biomass and plastic resource circulation in Japan through over 13 programs. Specifically, they visited a factory to gain knowledge on the mechanism of biogas power generation from food waste, and learned about Mie Prefecture's initiatives to formulate a circular society, waste plastic-upcycling businesses, etc. Additionally, they participated in the Seminar on Developing Glocal Human Resources, where they engaged in international exchange with high school and university students in Mie Prefecture.



Action plan presentation session

Results and prospects

During the action plan presentation session on the final day of the training, the participants presented their business ideas that they would like to implement in their countries to promote the formulation of a circular society based on what they learned. Having refined their action plans in light of research results they gathered after returning home, the participants are vigorously carrying out activities such as stakeholder consultation.



Independent project

Fourth ICETT Environmental Seminar "Promotion of Resource Circulation through Industry-government-academia Collaboration – Promoting Arteriovenous Industry Partnerships over the Product Lifecycle"

Outline

Aiming to help further promote resource circulation, ICETT held the fourth ICETT Environmental Seminar in the Promotion of Resource Circulation through Industry-government-academia Collaboration series on August 30, 2023.

Background and purpose

In March 2023, the strategy for a growth-oriented, resourceautonomous circular economy was formulated to articulate the future direction of circular economy initiatives. In response to this, we introduced in the fourth ICETT Seminar the overview of the strategy and prospects, centering on Arteriovenous Industry Partnership over the Product Lifecycle as the key item in this strategy.

Details

The Ministry of Economy, Trade and Industry provided us with information on the importance of shifting to a circular economy, the directions of "resource autonomy" and "resource circulation" policies, and future actions based on the strategy.

The seminar's keynote speaker, Prof. Yasushi Umeda, a specialist in eco-design at the University of Tokyo's Graduate School of Engineering, and a member of the study group involved in formulating this Strategy, explained the importance of "lifecycle design" and the digital transformation utilization required for achieving the circular economy, referring to examples.

He also highlighted the growing importance of developing functions of and human resources for circulation providers who create mechanisms to circulate goods, information, and money. Introduced as corporate examples, Toyota Motor Corporation and Mitsui Chemicals, Inc. have launched initiatives to expand recycled material usage and establish information-sharing platforms through their arterial industries and resource circulation type supply chains. Based on such information, the participants considered in detail the shift to the circular economy and the attainment of carbon neutrality.

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Seminar

Results and prospects

There were 349 participants in this seminar, who joined either on-site or online, from broad sectors including public administration agencies, business, and research institutes mainly in Mie, Aichi, and Gifu Prefectures.

Project commissioned by Mie Prefecture

Seminar for Managers of Resource Circulation-related Industries



Outline

To promote more active resource circulation system in related industries, ICETT held a seminar to introduce the current status of the circular use of plastic and case examples of plastic resource circulation by leading enterprises in the field.

Background and purpose

Mie Prefecture has been working on the development and retention of human resources to promote resource circulationrelated industries, aiming to further facilitate voluntary and leading resource circulation initiatives by industries towards the establishment of a sustainable circular society and the attainment of carbon neutrality by 2050.

As a part of this effort, ICETT held a seminar for executives and managers of industries related to resource circulation in Mie Prefecture.

Details

The seminar took place in a hybrid format on October 31, 2023, with 24 on-site and 33 online participants, totaling 57.

The seminar comprised three lectures: "Current status of the circular use of plastic resources" by Mr. Hitoshi Tomita, Manager for Information Service and Learning Support at the Plastic Waste Management Institute; "Case study on resource circulation by REFINVERSE" by Mr. Goro Tamaki, Director and General Manager at the Material Business Dept. of REFINVERSE, Inc.; and "Circular society with engagement by all" by Mr. Michihiko Iwamoto, Chairman and Director of the Board of JEPLAN, Inc.

Results and prospects

The participants shared their impressions, including that "It deepened understanding of initiatives towards a circular society" and "The enterprise case examples were very interesting."

We expect that this seminar will provide industries related to resource circulation with guidance for their businesses and prompt leading initiatives.



Seminar



Seminar on Developing Glocal Human Resources



Outline

ICETT held the seminar on developing glocal human resources for young people in Mie Prefecture, focusing on global careers and the environment. The course included lectures and discussions.

Third seminar

Background and purpose

In 2019, Mie Prefecture announced the "Declaration of Decarbonization", raising awareness of international issues. The topic of the environment serves an effective topic to help young people feel connected to global matters and broaden their perspections significantly. Against this background, we held a course on global environmental issues aimed at developing glocal human resources among the young people who will shape the future of Mie.

Details

Inviting lecturers from companies and organizations actively operating in Mie Prefecture, we held this three-seminar series comprising lectures, group discussions, and fieldwork

First seminar

"How to connect with the world from Mie Prefecture? Promoting the appeal of Japan from Mie Prefecture! Be ambassadors for Iapan!"

Second seminar

"Explore the secrets of Imuraya Group Co., Ltd., a company at the forefront of global and environmental issues.'

Project commissioned by Yokkaichi City

human resource at the Toba Aquarium."



"Learn with students overseas and take the first step as a glocal

Third seminar

Results and prospects

The participants actively asked questions and exchanged opinions with each other during each seminar, showing their passion and earnestness. They also gave this seminar series high praise. We hope this seminar will contribute to enhancing their engagement with environmental issues and interest in glocal careers serving as a catalyst for further learning.

Seminar on Decarbonizing Management for SMEs in Yokkaichi City



Outline

Yokkaichi City has decided to reduce greenhouse gas (GHG) emissions from business activities as per its environmental plan. This seminar on decarbonizing management was held to facilitate voluntary actions by small and medium-sized enterprises (SMEs).

Background and purpose

Yokkaichi City declared in February 2023 to be a "Zero-Carbon City" by achieving net-zero CO2 and other GHG emissions by 2050. The city has decided to reinforce decarbonization initiatives based on its history of overcoming pollution and lessons learned from it to secure its rich natural environment for future generations. As a part of efforts towards this goal, we held the decarbonized management seminar for SMEs in Yokkaichi City.

Details

..... The seminar took place in a hybrid format on November 17 and 24, 2023, with 85 participants (19 on-site and 66 online).

On the first day, Mr. Masao Tomizawa, CEO of KOE Environmental Business, Inc. gave a lecture titled "Significance, advantages, hurdles, and specific processes of decarbonized management". On the second day, Mr. Yasuki Shirakawa, President of Climate Consulting, LLC., presented his lecture titled "Introduction to emissions from supply chains (Scopes 1, 2, and 3) and explanation and hands-on practice of emissions accounting".

Results and prospects

The participants shared comments such as, "This deepened our understanding of efforts towards decarbonized management" and "I hope that opportunities to attend similar seminars are regularly available."

We hope that this seminar will prompt SMEs to take action towards decarbonized management and thus contribute to reducing GHG emissions.



Seminar



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