Course Title: Training to Enhance Environmental Sustainability on Reuse and Recycle for Electrical and Electronic Waste Industry

15 – 19 July 2024

TICA : Thailand International Cooperation Agency is a department under the Ministry of Foreign Affairs of Thailand and a national focal point for international development cooperation with development partners and other developing countries around the world. TICA was established in 2004 to realize Thailand's aspiration to be a contributor of development cooperation. TICA's mission is to promote sustainable socio-economic development through sharing of knowledge and best practices. In response to the recent changes in the global landscape of development cooperation, especially through the concept of South-South and Triangular Cooperation, TICA continues to realign our focuses in order to deliver Thailand's commitment to be a relevant partner in global agendas including the 2030 Agenda for of Sustainable Development Goals (SDGs).	**Office of Industrial Economics (OIE), Ministry of Industry** is the leading organization in Thailand through its mission of formulation, integration, and driving policies, plans, and strategies on industrial development towards the sustainability in response to the dynamic changes, both domestically and internationally. OIE's mission is also to analyze and report the industrial economic situation as well as to promote industrial development, cooperation, and international production network.
Theme: Climate Change and Environmental Issues **Main Goal**: To share knowledge and solutions to climate change and environmental problems such as sustainable use of natural resources, mitigation of environmental impacts, response to natural disasters. **Areas of focus:** • Assessing future risks caused by climate change in the agriculture and tourism sectors such as impacts on agricultural products, water sources, water basins and coastal areas, etc. • Restructuring energy production and consumption such as energy transition from fossil fuels to electrification, use of locally-produced biomass as an alternative source of renewable energy, adopting environmentally sound technologies (ESTs) to help reduce environmental problems, etc.	**Rationale:** under the rapid growth of world's economy, innovation and technology are increasingly developed in parallel to the competition of advanced technology and innovation in the manufacturing industry. Focusing on electrical and electronic industry, it has triggered the increasing production volume to serve the high economic growth, however products' life utilization cycle is short. At present, due to rapid urbanization development, developing countries are dealing with increasing amounts of waste from electronic devices. Therefore, solid waste management has become a significant global issue. These useless or unwanted parts are often called **"Electronic waste or E-waste."** The amount of E-waste products has been rapidly increasing a big volume of many kinds

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Adding value to bio resources by integrating local knowledge with emerging technology and innovations; promoting sustainable economic development through responsible production and consumption such as designing the production process to achieve minimum or zero waste, implementing the concepts of 3Rs (reduce, reuse and recycle), etc.
Promoting urban agriculture to encourage the circular use of resources by maximizing the limited space available and promoting robust urban ecosystems.

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of products such as old computers, unused mobile phones and other home appliances.
It is estimated that currently, developing countries would create more computer waste than developed countries. In addition, by the year 2030, waste from computers in developing countries will be around 400 million sets. In Thailand, for instance, the amount of hazardous waste including E-waste is nearly 1.9 million tons which accounts for 13% of the total solid waste generation. Out of the total hazardous waste, only 38% of the product was treated. As a result, the remaining 62% has still contaminated the environment and impacted on human life. Those products are often taken to landfills and buried under the ground or incinerated, however these E-waste contain a variety of hazardous substances or toxic chemicals that are associated with products. Thus, these processes may leak toxic or poisonous chemicals into environment and human. Recognizing the adverse impacts of these hazardous wastes to humanity, OIE deems it necessary to call for international cooperation in tackling with these global challenges.

Course Objectives:
- To enhance knowledge, information, experience and best practice on environmental sustainability on reuse and recycle for electrical and electronic waste industry.
- To build capacity and develop cooperation network among developing countries in the field of electrical and electronic waste industry.
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Course Methodology:
Training methodologies to be used during this training course include:
- Lecture
- Group discussion
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Participants Criteria:
- Government officials, scientists, technicians in related field of Electrical and Electronic Industry, Pollution Control and Environment
- Having good command of English.
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- Presentation
- Study visit-practice

Course Content:

- **Topic 1 Global Policy on Environment and Thailand Industrial Development**
  - Sustainable Development Goals (SDGs) and Challenges
  - Environmental Policies towards Sustainable Development Goals
  - Fundamental of Climate Change (Climate Policy – Climate Action)
  - Thailand Industrial Policy Development: Recycle Industry (Market, Trends and Outlook)
- **Topic 2 Electronic Waste – Reuse and Recycle**
  - Amendment of Industrial Waste Management: Electronic Waste
  - Electronic Waste Management and Sustainable Urban Mining
  - Trends on demand
  - Chain of supplies
  - End-of-Life management of electrical and Electronic products
- **Topic 3 Best Practice in Electronic Waste**
  - Fundamental for electronic waste treatment
  - Operation on mechanical and chemical process
  - Problems
  - Best practice of reuse and recycle especially collection and dismantling of E-waste
- **Topic 4 Study visit**

- Be in good health, physically and mentally, fit to attend an intensive field training.
- Participants must strictly attend 5 days training course. Not to bring family members to the training course in principle; if bringing a family member, the participant has to pay extra expenses.
- Be nominated by their respective Governments or authorized by his/her Department to participate in the training.

Attendance and Evaluation:

- In-class participation
- Presentation
- Participants are required to attend all activities organized during the course. TICA reserves the rights to revoke its fellowship offered or take appropriate action in case that a participant is in attendance of less than 90 percent of the training hours.

Venue:

Bangkok, Thailand

Expected results:

- Trained personnel with better knowledge, wider experiences and practices on reuse and recycle for electrical and electronic waste industry.
- Creation on cooperation between country's participants and Thailand to serve for environmental sustainability.
- Sharing of best practices among participants and Thailand on possibility for electrical and electronic waste management guideline

Implementing Agency:
Office of Industrial Economics (OIE), Ministry of Industry
Rama VI Road, Bangkok 10400, Thailand
Website: www.oie.go.th
Contact point: International Industrial Economics Division, Office of Industrial Economics, Ministry of Industry

- **Project Manager**
  Mr. Chalee Khansiri,

E-waste community, clearing house, local authority at Nonthaburi Municipality, Nonthaburi Province ● **Topic 5 Electronic Waste Management Guideline** - Discussion and Case Study - Supporting tools and Mechanism - Campaign and Way forward - Group presentation	Director, International Industrial Economics Division Tel. 0 2430 6807 Email: chalee@oie.go.th , chalee04@hotmail.com - **Project Assistant Manager** 1. Mrs. Supawan Terdkiatburana Plan and Policy Analyst, Senior Level Tel. 0 2430 6807 Ext. 680717 Email: supawan.terd@gmail.com 2. Ms. Sasiwaroon Nawagawong Plan and Policy Analyst, Senior Level Tel. 0 2430 6807 Ext. 680709 Email: sasiwaroon@gmail.com 3. Ms. Thitapa Chotisangsri Plan and Policy Analyst, Practitioner Level International Industrial Economics Division Tel. 0 2430 6807 Ext. 680714 Email: thitapac.15@gmail.com **Expenditure/Funding:** Thailand International Cooperation Agency (TICA) Government Complex, Building B (South Zone), 8th Floor, Chaengwattana Rd. Laksi District, Bangkok 10210 THAILAND Website: https://tica-thaigov.mfa.go.th/en/index

Schedule for the Training Programme:

Training to Enhance Environmental Sustainability on Reuse and Recycle

for Electronic Waste Industry

by Office of Industrial Economics, Ministry of Industry

Date: 15 – 19 July 2024 (5 days), Venue: De Prime Rangnam Bangkok, Thailand

(The schedule may be subject to change as appropriate)

Date	Time (Thailand time)	Topic / Content
Monday 15 July, 2024		**Topic: Global Policy on Environment and Thailand Industrial Development**
	09.00 – 12.00	Lecture - Sustainable Development Goals (SDGs) and Challenges By Office of the National Economic and Social Development Council - Environmental Policies towards Sustainable Development Goals By Ministry of Natural Resources and Environmental
	12.00 – 13.00	Break
	13.00 – 16.00	Lecture - Fundamental of Climate Change (Climate Policy – Climate Action) By Department of Climate Change and Environment - Thailand Industrial Policy Development: Recycle Industry (Market, Trends and Outlook) By Office of Industrial Economics, Ministry of Industry
Tuesday 16 July, 2024		**Topic: Electronic Waste – Reuse and Recycle**
	09.00 – 12.00	Lecture - Amendment of Industrial Waste Management: Electronic Waste By Department of Industrial Works, Ministry of Industry - Electronic Waste Management and Sustainable Urban Mining By Department of Primary Industry and Mining, Ministry of Industry
	12.00 – 13.00	Break
	13.00 – 16.00	Lecture - Trends on Demand - Chain of Supplies - End-of-Life Management of electrical and electronic products By Electrical and Electronics Institute

Date	Time (Thailand time)	Topic / Content
Wednesday 17 July, 2024		**Topic: Best Practice in Electronic Waste**
	09.00 – 12.00	Lecture - Fundamental for electronic waste treatment - Operation on mechanical and chemical process - Problems By Electrical and Electronics Institute
	12.00 – 13.00	Break
	13.00 – 16.00	Lecture - Best practice of reuse and recycle especially collection and dismantling of E-waste By Electrical and Electronics Institute
Thursday 18 July, 2024	09.00 – 16.00	**Topic: Study visit**
		- Visit E-waste community, clearing house, local authority Nonthaburi Municipality, Nonthaburi Province
Friday 19 July, 2024		**Topic: Electronic Waste Management Guideline**
	09.00 – 12.00	Lecture - Discussion and Case Study - Supporting tools and Mechanism - Campaign and Way forward
	12.-00 – 13.00	Break
	13.00 – 16.00	Lecture and Presentation - Group Presentation