



Course Outline

Annual International Training Course

- 1. Course Title:** Short course training on development for local community renewable energy and energy efficiency
- 2. Duration:** 10 Days (Short Course)
- 3. Background:**

Thailand International Cooperation Agency (TICA)

TICA is a national focal point for Thailand's international development cooperation. It was established in 2004 to realize Thailand's aspiration to be a contributor to international development cooperation. Believing that global challenges are best addressed through international cooperation and global partnership, TICA continues to work closely together with its development partners to realize the global development agenda through various capacity-building and human resources development programmes. In response to the recent changes in the global landscape of development cooperation, TICA has strengthened its partnerships to harness the synergy of South-South and Triangular Cooperation to tackle global development challenges, including expediting the implementation of Sustainable Development Goals (SDGs). It also continues to realign our focuses in order to deliver Thailand's commitments as a global reliable partner.

Since 1991, TICA, in collaboration with educational institutions in Thailand, has offered short-term training courses under its Annual International Training Course (AITC) programme. The number of courses offered each year varies between 25 to 35 courses for 20-35 participants per course. AITC not only fosters good and friendly relations which Thailand has already enjoyed with recipient countries across regions, but also helps Thailand to reach out to those countries with which we desire to engage more closely. The courses offered by TICA in 2023-2025 are categorized into 5 themes: Sufficiency Economy Philosophy (SEP), food security, climate change and environmental issues, public health, BCG Model related.

Asian Development College for Community Economy and Technology (adiCET)

Asian Development College for Community Economy and Technology (adiCET), Chiang Mai Rajabhat University is concerned about energy conservation, higher efficiencies, and use of renewable energies in the integration to the local community. adiCET aims to be the learning center for green technologies to showcase real applications for sustainable living. Chiang Mai World Green City is the main project to develop the Green College, Smart Community ASEAN Renewable Energy Center (AREC) and Green Technology Exhibition. Chiang Mai World Green City is also the first model community in the world that is integrated with nature, uses renewable energy, green technology and strives to be fully sustainable.

4. Objectives:

- To have knowledge and understanding of renewable energy and energy efficiencies for local community
- To be able to apply knowledge in everyday life or to be professional

5. Course Contents:

Lecture, Hands-on exercise of renewable energy, Energy efficiencies, Applied technology and application, Site visit

6. Participants' Criteria:

Applicants must fulfill the following requirements:

- Be nominated by their respective governments;
- Education: Undergraduate degree or higher ;
- Language: proficiency in English (speaking, reading and writing)

7. Attendance and Evaluation

Participants who complete the training will receive a certificate based on:

- Real-time class attendance (not less than 80%)
- Interactive class participation
- Presentation and report
- Evaluation

8. Venue:

Asian Development College for Community Economy and Technology (adiCET)
Chiang Mai Rajabhat University, Mae Rim Campus Chiang Mai, Thailand

9. Expected Results:

- Participants have knowledge and understanding of renewable energy and energy efficiencies for local community
- Participants can perform basic tasks in renewable technology, energy efficiencies and application

10. Organization/ Institution:

Asian Development College for Community Economy and Technology (adiCET), Chiang Mai Rajabhat University, 80 Moo 7 Chotana Rd., Tambon Khilek, Mae Rim, Chiang Mai 50180, THAILAND

Website: <https://adicet.cmru.ac.th/web2019/>

Email: adicet@cmru.ac.th,
adicet@g.cmru.ac.th

11. 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>
Email: aitc@mfa.go.th

Schedule for the Training Programme:

Date/ Period /Topic	Time (Thailand time)	Content	Speaker	Note
Monday, 15 May 2023				
	9:00 – 12:00	<u>Lecture - Overview</u> <ul style="list-style-type: none">• Open Ceremony• Pretest• Overview of Green City and Smart Community	Asst. Prof. Dr. Worajit Setthapun	
	13:00 – 16:00	<u>Lecture - Overview</u> <ul style="list-style-type: none">• Green Community Planning and Configuration	Asst. Prof. Dr. Worajit Setthapun	

Tuesday, 16 May 2023				
	9:00 – 12:00	<u>Lecture - Overview</u> • Renewable Energy integration with Water, Food, Building, Environment and Economy	Asst. Prof. Dr.Worajit Setthapun	
	13:00 – 16:00	<u>Lecture - PV & Hybrid System</u> • PV System: Principal, Components & Design	Asst. Prof. Dr.Hathaithip Sintuya	
Wednesday, 17 May 2023				
	9:00 – 12:00	<u>Lecture - PV & Hybrid System</u> • AC Microgrid • DC Microgrid • Smart Grid Configuration • Monitoring System • Energy Storage	Asst. Prof. Dr.Hathaithip Sintuya	
	13:00 – 16:00	<u>Lecture - PV & Hybrid System Application</u> • Smart Farm using DC - AC Microgrid and Environmental Sensors	Asst. Prof. Dr.Hathaithip Sintuya	
Thursday, 18 May 2023				
	9:00 – 12:00	<u>Hands-on Exercise</u> • Environmental Measurements – Irradiation, Wind speed, Humidity	adiCET Staff	
	13:00 – 16:00	<u>Hands-on Exercise</u> • PV System Installation, Operation and Maintenance	adiCET Staff	

Friday, 19 May 2023				
	9:00 – 12:00	<u>Lecture- Solar Thermal</u> • Solar dryer principle and technology	Asst. Prof. Dr.Surachai Narrat Jansri	
	13:00 – 16:00	<u>Hands-on Exercise</u> • Moisture content • Solar drying process	Asst. Prof. Dr.Surachai Narrat Jansri	
Saturday, 20 May 2023 Day off				
Sunday, 21 May 2023 Day off				
Monday, 22 May 2023				
	9:00 – 12:00	<u>Lecture – Biofuel</u> • Biogas digester operation and maintenance	Dr. Chayanon Sawatdeenarunat	
	13:00 – 16:00	<u>Lecture – Biofuel</u> • Biogas & generator • Utilization of biogas for cooking	Dr. Chayanon Sawatdeenarunat	
Tuesday, 23 May 2023				
	9:00 – 12:00	<u>Lecture – Biomass</u> • Waste to Energy • RDF	Dr. Chayanon Sawatdeenarunat	
	13:00 – 16:00	<u>Lecture – Biomass</u> • Green fuel briquette production/pallet • Biochar production	Asst. Prof. Dr.Surachai Narrat Jansri	
Wednesday, 24 May 2023				
	9:00 – 12:00	<u>Lecture - Biomass</u> • Biomass Gasification	Asst. Prof. Dr.Surachai Narrat Jansri	
	13:00 – 16:00	<u>Lecture - Biomass</u> • Household biomass stove • Heat recovery from stove	Asst. Prof. Dr.Surachai Narrat Jansri	

Thursday, 25 May 2023				
	9:00 – 12:00	<u>Lecture – Energy Efficiency</u> <ul style="list-style-type: none"> • Sustainable Development Goals (SDGs) • Energy Situation and Policy in Thailand 	Asst. Prof. Dr. Worajit Setthapun	
	13:00 – 16:00	<u>Lecture – Energy Efficiency</u> <ul style="list-style-type: none"> • Energy Efficiency in Homes, Building, Community • Energy Efficient construction materials 	Asst. Prof. Dr. Worajit Setthapun	
Friday, 26 May 2023				
	9:00 – 12:00	<ul style="list-style-type: none"> • Discussion – Group activity • Discussion and Develop Community Renewable Energy Design/Configuration 	All Lecturers	
	13:00 – 16:00	<ul style="list-style-type: none"> • Discussion • Discussion and Develop Community Renewable Energy Design/Configuration • Conclusion • Certificated ceremony 	All Lecturers	