



10th Anniversary: 10 years of Developing Community Power

20 - 21 February 2020

Chiang Mai World Green City

Asian Development College for Community Economy and Technology

Chiang Mai Rajabhat University, Maerim Campus

THAILAND

20th February 2020

- 8.00 Registration at Bird House Conference Hall
MC announces program, information and schedule.

Opening Ceremony of adiCET 10th Anniversary: 10 years of Developing Community Power

- 9.00 **Report of adiCET 10-year history for Developing Community Power**
Dr. Hathaithip Sintuya, Vice Dean Asian Development College for Community Economy and Technology (adiCET), Chiang Mai Rajabhat University
- 9.05 **Welcome Speech**
Mr. Viroon Phantevee, Vice Governor of Chiang Mai
Assoc. Prof. Dr. Prapan Thumachai President, Chiang Mai Rajabhat University
- 9.10 **Opening Speech and Keynote on**
“Community Energy Development from Local to Global”
Dr. Twarath Sutabutr, Inspector General of the Ministry of Energy, Thailand
- Special Keynote and Panel Discussions**
- 9.30 **“Community Power Plant Following the King's Path to Sustainable Development”**
Mr. Kornrasit Pakchotanon
Former Governor of Electricity Generating Authority of Thailand
The Current EGAT Advisor of Deputy Governor Strategy Division
- 9.50 **Panel Discussion and Experience Sharing on 10 years of adiCET and the Development of Community Power**
Panelists:
Prof. Dr. Soontorn Boonyatikarn University Council Chairman,
Nakhon Phanom University and
Rajamangala University of Technology Tawan-ok
Assoc. Prof. Dr. Prapan Thumachai President, Chiang Mai Rajabhat University
Asst. Prof. Dr. Ruangdet Wongla President, Uttaradit Rajabhat University
Assoc. Prof. Dr. Wattanapong Rakwichian Director, SGtech, Naresuan University
Assoc. Prof. Dr. Keng Tung Wu National Chung Hsing University, Taiwan
Mr. Lionel Yap Head of Malaysian Photovoltaic Industry
Association Administration
Moderator: Dr. Worajit Setthapun, Dean, adiCET

- 10.40 A.M. Appreciate Award Ceremony for the Sponsor Institutions
- 10.50 A.M. Group Photo in front of Bird House Conference Hall and Refreshment Break
- 11.00 A.M. Exhibition and Tour of adiCET
- 12.00 P.M. Lunch at adiCET Lawn
- 13.00 P.M. **Participant may attend the exhibitions, conferences, training and other activities:**

Activity	Location
“A Decade of adiCET Exhibition” by adiCET – Exhibition of Innovations, Academics, Research and Community Development	Bird House Lawn
“Show and Share” by Institutions and Communities Network of adiCET	adiDOME Lawn
“Showcase of Living Lab Learning Centers” for Renewable Energy and Energy Conservation	Chiang Mai World Green City
The 1st National Conference on Smart Community Development in the Asia Pacific (nSCAP2020)	Bird House Conference Hall
The 1st International Conference on Smart Community Development in the Asia Pacific (iSCAP2020)	Bamboo Meeting Hall
“Myth busters’ activity: Truth or Fiction” by TYSA	AREC
Renewable Energy Short Course <ul style="list-style-type: none"> • Biomass fuel briquet process • Basic Understanding of power generation from Solar Energy • Usage of waste plastic bags to make road and pavement blocks 	Bio-Energy Cycle Center 700 kW Learning Center 700 kW Learning Center

15.30 Refreshment Break at adiCAFE

17.30 Welcome Reception at adiCET Lawn

21th February 2020

8.30 Registration at Bird House Conference Hall

	กิจกรรม	สถานที่
9.00 – 17.00	“A Decade of adiCET Exhibition” by adiCET – Exhibition of Innovations, Academics, Research and Community Development	Bird House Lawn
9.00 – 17.00	“Show and Share” by Institutions and Communities Network of adiCET	adiDOME Lawn
9.00 – 17.00	“Showcase of Living Lab Learning Centers” for Renewable Energy and Energy Conservation	Chiang Mai World Green City
9.00 – 16.30	The 1st National Conference on Smart Community Development in the Asia Pacific (nSCAP2020)	-Bamboo Hall -adiDOME
9.00 – 12.00	The 1st International Conference on Smart Community Development in the Asia Pacific (iSCAP2020)	-AREC -adiCET Office
9.00 – 10.00	“Myth busters’ activity: Truth or Fiction” by TYSA	Bird House Conf
10.00 – 14.00	adInnovation Competition	Bird House Conf
9.00 – 12.00	Renewable Energy Short Course <ul style="list-style-type: none"> • Basic Understanding of power generation from Solar Energy • Basic Understanding of power generation from Solar Energy • Usage of waste plastic bags to make road and pavement blocks 	Bio-Energy Cycle Center 700 kW Learning Center 700 kW Learning Center
14.00 – 16.30	10 Year Alumni Event	AREC

10.30 Refreshment break at adiCAFE

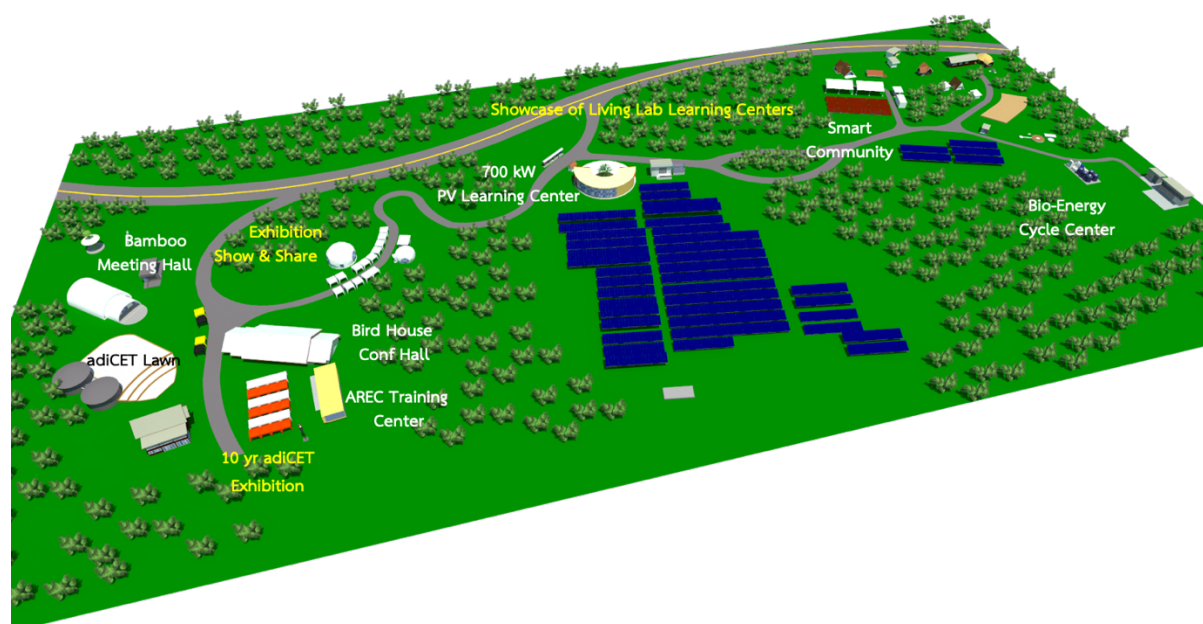
12.00 Lunch at adiCET Lawn

15.30 Refreshment break at adiCAFE

17.00 - Reception at adiCET Lawn

Exhibition and Activities Area

20-21 February 2020



9.00 – 17.30 P.M. Exhibitions for All

“Show & Share” Exhibition at Dome Lawn

Exhibitions and sharing from network institutions

- Chiang Mai Provincial Energy Office
- Kued Chang Municipality
- Om Koi Municipality
- Kru Pratum New Theory Agricultural Center
- Kru Noi Garden
- Renewable Energy for Sustainability Association (RESA)
- Electricity Generating Authority of Thailand (EGAT)
- National Innovation Agency (NIA)
- Research and Development Institute, Uttaradit Rajabhat University (URU)
- Lampang Rajabhat University
- Director of Director of Energy Research and Development Institute (ERDI)
- Energy Technology for Environment Research Center, Chiang Mai University (ETE)
- School of Renewable Energy and Smart Grid Technology, Naresuan University (SGTech)
- School of Renewable Energy, Mae Jo University
- Research and Service Energy Center, Rajamangala University of Technology Thanyaburi
- Charoenchai Transformer Co., Ltd.
- BN Solar Company
- Malaysian Photovoltaic Industry Association (MPIA)
- National Chung Hsing University, Taiwan

“A Decade of adiCET” Exhibition at Bird House Lawn

- **adiCET Development 10-year Timeline**
- **adiCET Academics, Research, Community Development and Network**
- **Master and PhD Student and Alumni Posters**
from Community Energy and Environment Program, Community Energy and Environment and Information Technology for Business and Education Program
- **adiCET Innovation Exhibitions**

Zone 1 is the collection of the innovations in community energy. adiHEAT is the series of the high efficiency but low emission biomass stoves. adiTRON is the smart electrical monitoring and control systems. adiGAS is the household- and community-scale biogas production unit with the smart monitoring system.

Zone 2 is the area for the community environments such as adiFARM is the smart system for serving the modern smart farming. adiDUST is the smart system for detecting and predicting the particulate matters (i.e. PM 10 and PM 2.5). adiDROP is the smart set for monitoring the water flow and usage.

Zone 3 is the central area for presenting the real applications and show cases of the adiCET's innovations via footages, animations, and infographics for summarizing and giving the take-home message to the visitors.

Showcase of Living Lab Learning Center at Chiang Mai World Green City

Self learning as living laboratory on renewable energy, energy efficiency and green technology from 20 Innovation points:

IP1	Rooftop PV	IP11	DC-1 House
IP2	Energy Efficient Building	IP12	Smart Home 1
IP3	Waste Plastic Road	IP13	Smart Farm
IP4	Wind Turbine	IP14	Agrovoltaic Farm
IP5	Smart Home 2	IP15	Community Biogas
IP6	EV Charging Station	IP16	Hybrid Biomass Stove
IP7	700 kW Solar Farm	IP17	Q-bic Biomass Stove
IP8	PV Bus Stop	IP18	Solar Dryer
IP9	AC Microgrid	IP19	Mobile Solar Pump
IP10	DC Microgrid	IP20	Household Biogas
		IP21	Smart Community Monitoring

**The 1st International Conference on Smart Community Development in
the Asia Pacific (iSCAP2020)
20-21 February 2020**

The main objective of iSCAP2020 is to provide a platform for professionals, academicians, researchers and the communities to share their knowledge, research findings and best practices on the toward development of Smart Community in the Asia Pacific Region. This conference also aims to conduct networking and advancement opportunities of future research and global collaboration on the broad spectrum of renewable energy and sustainable community development.

Time	20 February 2020 at Bamboo Meeting Hall
	<u>Invited Speakers Session</u> Moderator: Dr. Nuwong Chollacoop National Metal and Materials Technology Center National Science and Technology Development Agency
13.00	Smart Grids, Opportunities and spreading wealth over a wider spectrum of the community Mr. Lionel Yap Head of Malaysian Photovoltaic Industry Association (MPIA) Administration
13.20	Distributed Community Power Plant via an Agro Waste Gasifier Integrated with Microgrids System Assoc. Prof. Dr. Keng Tung Wu Associate Professor of Department of Forestry Director of Industry Promotion Office for Southeastern Asia (IPOSA), National Chung Hsing University, Taiwan
13.40	Zero-Discharge Concept: Circular Waste Management of Doi Tung Factories Dr. Thanapong Duangmanee Engineer, Mae Fah Luang Foundation under Royal Patronage, Chiang Rai
14.00	The Development of Smart Community: Experience Sharing from adiCET Dr. Chayanon Sawatdeenarunat Asian Development College for Community Economy and Technology Chiang Mai Rajabhat University, Thailand
14.20	Empowering alternative energy with energy resilience: Measuring resilience of electricity generating system Dr. Kampanart Silva National Metal and Materials Technology Center National Science and Technology Development Agency
14.40	Toward Greener University: University Waste Management for University Power - Experience Sharing from Chiang Mai University Asst. Prof. Dr. Pruk Aggarangsi Director of Director of Energy Research and Development Institute (ERDI), Chiang Mai University
15.00	Refreshment Break
15.40 – 17.00	Group Discussion: Opportunities for Collaboration for Smart Community Development in the Asia Pacific Moderator: Dr. Worajit Setthapun, adiCET Topic 1: Opportunities for Community Development Collaboration among Scientists in the Asia Pacific Region

Time	20 February 2020 at Bamboo Meeting Hall
	<ul style="list-style-type: none"> Participants discuss/brainstorm on research opportunities/ ideas/ topics to provide solutions to the issues Determine research topics for collaboration in the Asia Pacific Region <p>Topic 2: Ways-forward for collaborative programs for Asia Pacific Region</p> <ul style="list-style-type: none"> Participants discuss/brainstorm on mechanism of how to implement the collaborative research program, such set up working group, database for experts, shared resources, facility, funding, etc.
17.30	Reception at adiCET Activity Lawn




Time	21 February 2020		
	Oral Presentations*		Special Site Visit to Mae Ta Village Microgrid Site**
09.00 – 12.00	<p>Session 1:</p> <p>WEF Nexus; Renewable Energy & Environment</p> <p>Room 1: AREC</p> <p>Session Chairs:</p> <p>Assistant Professor Dr. Saoharit Nitayavardhana</p> <p>Assistant Professor Dr. Rotjapun Nirunsin</p> <p>(presentation schedule below)</p>	<p>Session 2</p> <p>Sustainable Community Development in Social, Economics, Environment & Tourism</p> <p>Room 2: adiCET Office</p> <p>Session Chairs:</p> <p>Dr. Sulak Sumitsawan</p> <p>Associate Professor Dr. Rina Patramanon</p> <p>(presentation schedule below)</p>	<p>The special site visit is arranged as an option for participants to visit the Ban Pha Dan village, Lampoon province as technical site visit at Smart Micro Grid for Rural Electrification. Details of the site visit are below.</p>
12.00	Lunch Break at adiCET Lawn		Lunch provided by the local villagers
13.00 – 17.00	Site visit: Chiang Mai City Tour by Tram and Chiang Mai Flower Festival at Suan Buak Haad Public Park (Optional)		Depart from Lampoon Province to Chiang Mai City

iSCAP2020 Oral Presentation Schedule***January 21, 2020****Session 1: WEF Nexus; Renewable Energy & Environment****Room 1: AREC****Session Chairs: Assistant Professor Dr. Saoharit Nitayavardhana****Assistant Professor Dr. Rotjapun Nirunsin**

Time	Topic
09:00-09:12	Experimental Study on Strength of Concrete with Partial Replacement of Fine Aggregate with Brick Waste by Pyae Su Htike
09:12-09:24	Estimation of Runoff Potential in Sittaung River Basin Using GIS Application by Thet Hnin Aung
09:24-09:36	Statistical Analysis for Initial Wind Characteristics in Southern Region of Myanmar by Ni Ni Moe Kyaw
09:36-09:48	Application of Support Vector Regression for Solar Power Predication by Narakorn Songkittirote
09:48-10:00	Semi-transparent Photovoltaic Window Louvers for Building Integration Application by Phetdavanh Ladthavong
10:00-10:12	Comparison of Biodiesel Synthesis via Tranesterification by Using Homogeneous and Heterogeneous Catalyst by Ying Chusree
10:12-10:24	The Thermal Performance of the Novel Solar Collector Integrated with Phase Change Material by Bundarith Nhel
10:24-10:36	Development of Biogas Fermentation Tank for Organic Food Waste in Chiangmai Community by Chakriya Chanracha
10:36-10:48	The Combustion Characteristic of a Community-Scale Biomass Stove by Paitoon Laodee
10:48-11:00	Modelling of Cooling Load in Close-System Solar Greenhouse Under Thailand Climates Using TRNSYS by Thiri Shoon Wai
11:00-11:12	Anaerobic Digestion of Starch Wastewater: The Long-term Monitoring by Zangta Sang
11:12-11:24	Rheological Characterization of Alternative Raw Materials for Biodiesel Synthesis by Siti Hartini Hamdan
11:24-11:36	Effect of Heat Pretreatment on Biogas Production from PLA Bioplastic and Food Waste by Natthida Yarangsri
11:36-11:48	Color and Organic Compounds Reduction in Biogas Effluent of Ethanol Industry by Adsorption Process by Thanyaporn Khunluang
11:48-12:00	Screening Mesophilic and Thermophilic Consortia for Polylactic Acid-Bioplastic Degradation by Weerapong Chouyplod
12:00-12:12	The Design and Development of Smart Farm with Environmental Analysis by Panupong Tanomkiet
12:12-13:00	Lunch Break
13:00-17:00	Site Visit: Chiang Mai City Tour by Tram and Chiang Mai Flower Festival at Suan Buak Haad Public Park (Optional)

Session 2: Sustainable Community Development in Social, Economics, Environment & Tourism**Room 2: adiCET Office****Session Chairs: Dr. Sulak Sumitsawan****Associate Professor Dr. Rina Patramanon**

Time	Topic
09:00-09:12	Sustaining the Humanities – Syntax of the East the Context of Kuala Lumpur, Malaysia by Sucharita Srirangam
09:12-09:24	Development of Sustainable Urban Drainage System Using Stormwater Management Model (SWMM) by Min Hein Khant
09:24-09:36	A Comprehensive Review of Cooling Systems for Agricultural Greenhouse by Napassawan Khammayom
09:36-09:48	The Effect of Conventional Sugarcane Planting Periods on Soil Properties by Realfang Suanake
09:48-10:00	Bio Smart Farm Management for the Model Community by Antika Phetcharee
10:00-10:12	Financial Analysis of Urban Bamboo-Ponics Vertical Farm by Natthaya Paobanzao
10:12-10:24	The Comparison of Energy Management Criteria for Energy Efficiency Development in the School by Chuntisa Kessmanee
10:24-10:36	Is Peace Possible Without Ecojustice? How Ecojustice Education Can Help Eliminate Injustice and the Conflict it Causes by Chaz Burton
10:36-10:48	Investigation of Turbidity and TSS Removal from Leachate Landfill Via Electrocoagulation Process by Norilhamiah Yahya
10:48-11:00	Guidelines of Activity and Service Development to Promote the Well-Being Among the Elderly People in Wang Thong Sub-district, Wang Nuea District, Lampang Province by Ardchawin Jaikaew
11:00-11:12	An Investigation into Factors Affecting Environmental Awareness of Primary School Children in Mon State, Myanmar by Su Chan Myae
11:12-11:24	Impacts and Effects of Political Instability on Tourist Behaviours: An Exploratory Case Study of Hong Kong by Kasper Li
11:24-11:36	Long Term Care Digital Innovation Platform: the Sustainable Preparing for Healthy Aging Society by Pariwat Luangsuwimol
11:36-11:48	Understanding Cultural Differences between Thai and United States Postgraduate Students by Kittiwat Sinthunava
11:48-12:00	Green Edible Building Facades Potential for Energy Saving by Pee Pocherd
12:00-12:12	Learning Organizational Factors of Travel Business Agencies in Chiang Mai Province by Patarasri Inkhao
12:12-13:00	Lunch Break
13:00-17:00	Site Visit: Chiang Mai City Tour by Tram and Chiang Mai Flower Festival at Suan Buak Haad Public Park (Optional)

Time	21 February 2020 **Special Site Visit to Mae Ta Village Microgrid Site
9.00	Depart from Royal Lanna Hotel
10.30	Arrive at Ban Pha Dan village & Technical site visit at Smart Micro Grid for Rural Electrification
12.00	Lunch provided by the local villagers
13.30 – 15.00	Depart back to Chiang Mai City
	<p>Ministry of energy and Renewable Energy for Sustainable Association (RESA) implement the community micro grid pilot project to demonstrate the application of solar PV electricity, high efficiency energy storage, local distribution lines and solar PV for water pumping in Lamphun Province for rural electrification area and better quality of life. The project has been completed and electricity has been distributed since June 2018.</p> <p>Due to the remotely rural areas and as a reason of located in national reserve area encountering difficulty in transportation and transmission line construction suggesting un- electrification in some communities. For a better quality of life, EPPO and RESA with the support from ENCON Fund has initiated an off-grid Smart-Micro Grid for rural electrification in the National Reserved Areas. The first pilot project covers 365 households in 3 communities of Ban Pong Phang, Ban Pha Dan and Ban Mae Sa Ngae in Amphoe Mae Tha, Changwat Lamphun. These 3 communities faced the problem of insufficient water for consumption and irrigation as well as un-electrified communities.</p>
	  

Renewable Energy Short Course
20-21 February 2020

Topic	Time
Biomass fuel briquet process At Bio-Energy Cycle Center (BCC)	<u>Round 1</u> 20 February 2020 13.00-16.00
Basic Understanding of power generation from Solar Energy At 700 kW PV Learning Center	<u>Round 2</u> 21 February 2020 09.00-12.00
Usage of waste plastic bags to make road and pavement blocks at 700 kW Learning Center At 700 kW PV Learning Center	20-21 February 2020 09.00 – 16.00

adInnovation Competition
21 February 2020 at Bird House Conf Hall

The competition on innovation for energy and environment for High School and Undergraduate Students. The innovations aim to solve issues and improve the quality of life for the local community.

Award

- 1st Place: 5,000 baht with certificate
- 2nd Place: 4,000 baht with certificate
- 3rd Place: 3,000 baht with certificate
- All participants will receive certificate of appreciation

Time	21 February 2020 at Bird House Conf Hall
8.30	Registration
9.00	Myth busters activity by TYSA
10.00	High School & Undergraduate Student Level Competition
12.00	Lunch
13.00	Award Announcement

Myth Busters by TYSA in Chiang Mai
20-21 February 2020

TYSA members will hold a Myth Busters Event focusing on the topic of sustainable energy and environment at Chiang Mai Rajabhat University, Mae Rim Campus, Chiang Mai on February 20-21, 2020. The Myth Busters will be organized in parallel with the activities in the 10th Anniversary Celebration of the Asian Development College for Community Economy and Technology (adiCET). The target audiences are high schoolers, college students as well as the local communities. The main goal of the Myth Busters is to provide understanding and clarification on the myth regarding the implementation of renewable energy and its affect to the community and environment.

<u>Round 1</u>	20 February 2020	14.00 – 15.00 at AREC Room
<u>Round 2</u>	21 February 2020	09.00 – 10.00 at Birdhouse Conf Room