

Training Course

Energy Efficiency and Conservation (EE&C) for Global Warming Mitigation

1. Course Title

Energy Efficiency and Conservation (EE&C) for Global Warming Mitigation/ Training short course

2. Duration

1-15 September 2021

3. Background and Rationale

Global warming is an important global issue and believed to relate to climate change. Study by IPCC has shown that continuous emission of greenhouse gases will give impact on the climate change and the rise of global average temperature and sea level. Energy sector is one of the sectors that emit CO₂. The use of non-fossil fuels, improvement of energy efficiency and carbon capture and storage (CCS) are the available measures to mitigate global warming. However, the most promising option is the improvement of energy efficiency as it can be readily implemented and its impact is believed to be high.

In Thailand, the Energy Efficiency Plan (EEP2015) has been announced and is expected that, with a full implementation of EE action plan, energy consumption can be reduced by 30% compared to the BAU scenario in 2036. With the past schemes, Thailand has also successfully achieved energy efficiency improvement in all sectors including residential sector, industrial sector and transportation sector. With this success, Thailand is in a good position to share the knowledge and experience in technology, management as well as policy implementation for the energy efficiency improvement in other countries and global warming mitigation.

4. Objectives

1. Build participants' awareness in global warming impacts and their relationships with energy
2. Increase participants' capacity in energy efficiency improvement
3. Disseminate energy efficiency technologies for further application
4. Distribute the knowledge of energy efficiency improvement in relation with global warming mitigation

5. Course Contents

5.1 Course Outline

Training Course					
หลักสูตร Energy Efficiency and Conservation for Global Warming Mitigation					
Date 1 September 2021 - 15 September 2021					
Date	Time	Topics	Lecturers	Lecture	Practices
Day 1 / WED 1 September 2021					
Module 1: Opening and introduction	11.00-11.15	Opening and Orientation	N/A	-	
	11.15-12.45	Introduction to Energy efficiency improvement and energy conservation	Dr. Chumnong (TBC)	1.5	
	12.45-13.00	Break			
Module 2: Global warming and climate change	13.00-15.00	Factors responsible for climate change	Dr.Amnat	2	2
		Biological and sociological consequences of such changes			
		Possible engineering, economic, and legal solutions			
Day 2 / THU 2 September 2021					
Module 3: Energy fundamentals and outlooks	11.00-12.30	Basic principle of energy and forms: electricity and heat	Dr.Chumnong (TBC)	1.5	
	12.30-13.00	Break			
	13.00-15.00	Energy Outlooks: world energy outlook, EU energy scenario, ASEAN energy outlook	Dr.Athikom	2	
Day 3 / FRI 3 September 2021					
Module 4: Energy conservation laws and standards	11.00-12.30	Energy efficiency programs around the world	Dr.Athikom	1.5	
	12.30-13.00	Break			
	13.00-15.00	Energy efficiency & conservation standards	Prof.Surapong	2	
Day 4 / MON 6 September 2021					
Special Case study-001	11.00-12.30	Case studies of EGAT Learning Center or MEA or SCG	Dr.Athikom	1.5	1.5
Module 5: Energy efficiency improvement technologies	12.30-13.00	Break			
	13.00-15.00	EE technologies for buildings	Prof.Surapong	2	
Day 5 / TUE 7 September 2021					
Special Case study-002	11.00-12.30	Case studies of Green buildings (Thai Health center)	Dr.Pipat	1.5	1.5
	12.30-13.00	Break			
	13.00-15.00	Case studies of Net Zero Energy Building		2	2
Day 6 / WED 8 September 2021					
Module 5: (cont.) Energy efficiency improvement technologies	11.00-12.30	EE technologies for industries	Dr.Pipat	1.5	
	12.30-13.00	Break			
	13.00-15.00	EE technologies for industries		2	
Day 7 / THU 9 September 2021					
Module 5: (cont.) Energy efficiency	11.00-12.30	EE technologies for transportation	Dr.Chumnong	1.5	
	12.30-13.00	Break	(TBC)		

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improvement technologies	13.00-15.00	EE technologies for transportation		2	
Day 9 / FRI 10 September 2021					
Module 6:	11.00-12.30	Energy management system	Dr.Pipat	1.5	
Energy management	12.30-13.00	Break			
system and audit	13.00-15.00	Energy performance analysis		2	
Day 10 / MON 13 September 2021					
Module 6: (cont.)	11.00-12.30	Energy management system	Dr.Pipat	1.5	
Energy management	12.30-13.00	Break			
system and audit	13.00-15.00	Energy audit		2	
Day 11 / TUE 14 September 2021					
Module 6: (cont.)	11.00-12.30	Financial analysis for energy projects	Dr.Athikom	1.5	
Energy management	12.30-13.00	Break			
system and audit					
Special Case study-003	13.00-15.00	Energy management virtual lab by Dr.Pipat	Dr.Pipat	2	2
Day 12 / WED. 15 September 2021					
Module 7:	11.00-13.00	Conclusion and lessons learned	N/A	2	
Wrap-up and	13.00-13.15	Break			
closing	13.15-15.15	Evaluation	N/A	2	
	15.15-15.30	Closing Ceremony			
				39	9

5.2 Advance Assignments

1) Country Report

Each participant will be asked to prepare their country report and present.

The format of country should follow the items Attachment 1.

2) Reading Assignment

It will be announced during the training.

3) Project Assignment

The solving scheme will be assigned to the participants to design and it will be presented and discussed at the end.

6. Number of Participants 20

7. Participants Criteria

Applicant for this course should

- have at least bachelor degree in relation to energy, environment, economics, and science, and good English proficiency
- have at least 1 year working experience
- currently work closely in the areas of energy efficiency and alternative energy
- be strongly motivated to improve energy efficiency and/or apply alternative energy in his/her organization

8. Invited Country

Afghanistan, Bangladesh, Georgia, Indonesia, Kyrgyzstan, Maldives, Nepal, Oman, Pakistan, Palestine, Sri Lanka, Tajikistan, Timor-Leste, Uzbekistan, Yemen, Bhutan, Brunei, Darussalam, Cambodia, Lao PDR, Myanmar, Philippines, Indonesia, Thailand, Viet Nam
Southwest Asia, Eastern Europe

9. Venue

- Online System

10. Expected Results

Participants have a good understanding and knowledge in global warming and how to exploit the technology and management of EE&C to mitigate global warming in their own country as well as ability to transfer knowledge to others in and outside their organization.

11. Evaluation

- Pre-test and Post-test
- Report and oral presentation
- Participation in class/group discussion
- Course attendance

12. Institution

12.1 Executing/Implementing Agency

The Joint Graduate School of Energy and Environment (JGSEE) and Center of Excellence for Energy and Environment, King Mongkut's University of Technology Thonburi
126 Prachauthit Rd., Bangmod, Tungkru, Bangkok 10140, Thailand

Tel (66 2) 470 8309, Fax (66 2) 872 9805

Contact person: Ms.Kulakarn Soontornwat

E-mail: kulakarn@jgsee.kmutt.ac.th, pro.jgsee@gmail.com

Website: www.jgsee.kmutt.ac.th

JGSEE at KMUTT is a well-known institute conducting international degree programs at graduate level and high impact research in energy and environment. In energy related area, EE&AE technology and management are focused. JGSEE has a number of staff with expertise and long experience in EE&AE. The Partnership Relation and Outreach (PRO) unit at JGSEE will also work closely with experts for organizing this training course. In addition in-house staff and facility, the inter-university and industrial linkage will also give more opportunity for experts and industrial facility. The course will mainly be conducted at JGSEE/KMUTT, which also offers high standard and comfortable university guesthouse.

12.2 Collaborative Organizations

No

Attachment 1

Country Report Format

Country report should be submitted together with the Application Form in complying to the following items.

I. Introduction

1. Name of the Training Course:

2. Name of applicant:

Home Address:

Phone No. (Home & Office):

Fax:

E-mail:

3. Name of Country:

4. Name of Organization:

5. Main Tasks of the Organization & Organization Chart

(Please draw an organization chart, starting from “section” as the lowest level and circling the section to which applicant belongs)

6. Applications’ Position: Roles and Responsibilities

II. General Information of the country (1 – 2 pages of A4 size paper):

Geographical status of the country, climate, population, official language, social, educational and economic conditions, gross National Products (GNP), Per- capita Income, major import and export goods, natural resources and environmental situation, etc.

III. Historical Background of the Subject Related to the Training Course

(Within 1 page of A4 size paper)

IV. Existing Laws and Regulations concerning the subject (if any)

V. Existing Problems in the Applicants’ section (1-2 pages of A4 size paper)

1. Current problems and/or constraints you are facing (Please describe concrete details)

2. Obstacles in the process of solving those problems

3. Countermeasures of questions for those problems or any idea which you would like to study or solve through the course

VI. Future Program/Project on the Related Subject

1. What is the future policy/program/or project concerning with the subject?

2. How is the training course related with those future matters?

VII. Expectations for the Training Course (up to 1 page of A4 size paper)

1. Main interesting subject areas or topics in this training course and reasons why you pick up them.

2. How do you expect to apply the knowledge and skills received from this training course after you return to your home country?

3. Other matters you are expecting for this course (if any) (Basically this training program is fixed and cannot be changed upon your request).