

แนวทางในการจัดทำรายละเอียด

หลักสูตรการฝึกอบรม/ดูงาน/สัมมนา นานาชาติ

1. Course Title

Program	Annual International Training Courses - Thai International Cooperation Program
Theme	Climate Change
Course Title	Low Carbon Scenario Development: Waste Management Under Crisis Situations

2. Duration and Number of Participants

Duration	16-30 September 2021
Number of Participants	20 participants

3. Background and Rationale

- Based on the United Nations Population Fund statistics, the world is undergoing the unprecedented largest wave of urban growth, with more and more people living in cities than in rural areas. It is forecasted that by 2030, over 60 percent of the population would be living in cities. Megacities, which define cities with more than 10 million inhabitants, are on the rise and becoming a topic of frequent discussion in urban development discourse. However, it is foreseen that most new urban growth will occur in smaller towns and cities in developing countries, which have fewer resources to respond to the magnitude of the urban population increase. This projected growth leads to great challenges for cities to provide a high quality of life to their residents at present and in the future. Actually, in many cases, rapid urbanization is generally conveying to concentrating socioeconomic poverty and environmental degradation in cities. Currently, cities face increasing development needs in infrastructure, land use, basic service provisions, etc.. Consequently, sectors such as transportation, water and sanitation, energy supply, health services, etc., are under severe pressure from continuously increasing population and limited resources. In this regard, a sustainable development approach is recommended to ensure that the needs of citizens today are met without compromising the ability of future generations to meet their needs. However, this approach suggests that, in addition to the efficient management of available resources, cities must take into consideration additional risks related to climate change. On the other hand, it is now well recognized that cities are responsible for a high proportion of global carbon emissions, which are the main driver of anthropogenic climate change. In a recent United Nations Human Settlements Program (UN-Habitat) report, it was stated that the world's cities cover only two percent of the total land area, but account for more than 70 percent of the global GHG emissions (UN-Habitat, 2011). Emissions in cities come mainly from fossil fuel combustion for power generation, transport, industrial activities, municipal waste, and water and sewage treatment. Also, if urban expansion is not appropriately planned, land-use change and deforestation can lead to the release of carbon dioxide (CO₂) from natural carbon stocks, such as forest cover. Thus, cities will have to consider both mitigation measures that lower their carbon emissions, as well as adaptation measures that improve their resilience to climate impacts.

- Further to the sustainable low carbon urban development, we are facing nowadays not only the pressure to reduce GHG but also the impact from climate action and some crisis situation including pandemic waste, flood waste and plastic/microplastic waste in relation to the climate change situation. These crisis introduce changes to waste stream both in term of waste generation rate and waste composition. This is, off cause, a big challenge to waste management in urban area. It is assumed that during crisis situation either short term as pandemics situation and long term as climate situation, composition of waste is dramatically change. Improper waste management during this crisis will lead to health and environmental problem and delay the approach of sustainable waste management. During 2020, amount of waste in Bangkok and other big cities reduced to 11-20 % in the big business city and around 50% in the tourist city. On the other hands, amount of plastic and paper components in waste stream are increased. These phenomena leads to difficulty in several aspects of waste management including treat of hazardous waste, energy fuel from plastic waste and leakage of plastic and microplastic to environment, treatment of plastic paper packages from food and pos delivery etc. In addition these changes also affect in low carbon scenario planning of urban development.
- In this regards, although cities can engage in sustainable development and lead on global warming mitigation by considering a low carbon development approach but planning during crisis situation need to be concerned and its impact should be taken into account while taken into account. mutually advantage of integrated planning strategies and socioeconomic growth to be inclusive.
- To this end, a long term vision can be created where economic goals across sectors align and balance with carbon reduction goals while underling the management during crisis. Such an integrated approach not only makes planning more efficient, but also offers an opportunity to bring together multiple stakeholders and raise awareness of the benefits of simultaneously pursuing socioeconomic growth health care and carbon reduction. In order to pave the path of low carbon city development, especially during the crisis situation of developing countries, it is of prime importance that government officers involved in city management could have the opportunity to be initiated to low carbon city development with the view of how to manage waste during crisis through hands-on training organized by an institution that has developed knowledge and experience in the field.
- The Joint Graduate School of Energy and Environment (JGSEE) and Centre of Excellence on Energy Technology and Environment (CEE-PERDO), King Mongkut's University of Technology Thonburi (KMUTT) together with Kasetsart University and National Institute for Environment Study, Japan have developed the Collaborative Research Laboratory (CRL) developed, in 2011, a guideline of flood waste management for municipality engaging many authority officer form big city in Thailand. This development was conducted closely with Bangkok Metropolitan Administration (BMA) and later two project of Rapid urgent waste management to remove barrier from water way in big city were performed with the support from Asia Pacific Network on Climate Change (APN). Thus, in recognition that low carbon city development cannot avoid the crisis situation that resulted from the impact of climate change, we would like to disseminate our experience to other governmental officer from developing countries and offer the training course on the integration of low carbon development

taken into account waste management during the crisis situation in order to perceive the challenge of sustainable low carbon city approach.

- In awareness of the current limitation of traveling this year, this course will be conducted remotely using the Microsoft-Team platform. However, we still keep our concept of active participatory, therefore we request participants to prepare their own information of crisis waste management in your country and exchange with other participants during class. The activities will include small research with your own effort but with close guidance by course mentor. We expect that by the end of the course, participants should understand the low carbon city approach, how to estimate carbon emission in the developing city, how to plan waste management to cope with rapid and slow continuity impact of crisis situation. This is one of the foreseen new normal that happens in our changing world. .

4. Objectives

- To introduce to the participants the concept of low carbon city development and accounting under crisis situation.
- To build capacity of the participants on low carbon city development approach and waste management during crisis situation
- To transfer and exchange knowledge, technology and experience to the participants through low carbon city approach activities and discussion, guidance on crisis situation of waste management and city-country actions.
- To set up a network for “Low Carbon City Development” of developing countries.

5. Course Contents

5.1 Course Outline

Date	Time	Topics	Lecturers	Lecture	Practices
Day 1 / THU 16 SEP 2021					
	11.00-11.15	Opening and Orientation	N/A		
	11.15-13.15	Introduction to Global warming and climate change; their causes and impacts	N/A	2	
	13.15-13.45	Break 30 Min.			
	13.45-14.45	Climate change Mechanism and Global context	N/A	1	
	14.45-15.45	Crisis situation in relation to climate change	N/A	1	1
Day 2 / FRI 17 SEP 2021					
	11.00-13.00	Low Carbon City in Different Country	N/A	2	2
	13.00-13.30	Break 30 Min.			
	13.30-14.30	Different scopes of GHG emission estimation: National level, Community scale, Project, Organizations	N/A	1	
	14.30-15.30	Life Cycle Assessment & Carbon footprint: Organization, Products, LCA	N/A	1	
Day 3 / MON 20 SEP 2021					
	11.00-13.00	Community scale GHG inventory by using GHG protocol guidelines	N/A	2	
	13.00-13.30	Break 30 Min.			
	13.30-14.30	Community scale GHG inventory by using GHG protocol guidelines : Practice	N/A	1	1
	14.30-15.30	GHG emission projection	N/A	1	1
Day 4 / TUE 21 SEP 2021					
	11.00-13.00	GHG emission inventory for non waste and practice	N/A	2	2
	13.00-13.30	Break 30 Min.			
	13.30-15.30	GHG emission inventory for waste sector and practice	N/A	2	2

Date	Time	Topics	Lecturers	Lecture	Practices
Day 5 / WED 22 SEP 2021					
	11.00-13.00	Principle of solid waste management	N/A	2	
	13.00-13.30	Break 30 Min.			
	13.30-15.30	Technology and disposal	N/A	2	2
Day 6 / THU 23 SEP 2021					
	11.00-13.00	Waste management during flood situation	N/A	2	
	13.00-13.30	Break 30 Min.			
	13.30-15.30	Workshop1: discussion and activities on flood waste management including case study.	N/A	2	2
Day 7 / FRI 24 SEP 2021					
	11.00-13.00	Waste management during pandemic situation	N/A	2	
	13.00-13.30	Break 30 Min.			
	13.30-15.30	Waste management during pandemic situation (cont.)	N/A	2	
Day 8 / MON 27 SEP 2021					
	11.00-13.00	Workshop2: Discussion and activities on pandemic waste management including a case study.	N/A	2	2
	13.00-13.30	Break 30 Min.			
	13.30-15.30	Workshop2: Discussion and activities on pandemic waste management including a case study. (cont.)	N/A	2	2
Day 9 / TUE 28 SEP 2021					
	11.00-13.00	Workshop 3 : Discussion and activities on plastic waste management including a case study.	N/A	2	2
	13.00-13.30	Break 30 Min.			
	13.30-15.30	Workshop 3 : Discussion and activities on plastic waste management including a case study. (cont.)	N/A	2	2

Date	Time	Topics	Lecturers	Lecture	Practices
Day 10 / WED 29 SEP 2021					
	11.00-13.00	Workshop 4 on integrated low carbon city approach and crisis waste management	N/A	2	2
	13.00-13.30	Break 30 Min.			
	13.30-15.30	Workshop 4 on integrated low carbon city approach and crisis waste management (cont.)	N/A	2	2
Day 11 / THU 30 SEP 2021					
Wrap-up and closing	11.00-13.00	Conclusion and lessons learned	N/A	2	
	13.00-13.15	Break 15 Min			
	13.15-15.15	Evaluation	N/A	2	2
	15.15-15.30	Closing Ceremony	N/A		
				44	27

5.3 Case Study

Case studies are included in the program to allow participants to share and exchange experience with institutions or agencies, which have already performed research work or implementation of low carbon city development and waste management under crisis situation.

5.4 Advance Assignments

1) Country Report

Each participant will be asked to prepare their city-country report and present. The format of city-country report should follow the items presented in Attachment 1. Additional items may be provided during the training.

2) Reading Assignment

Prior to attending the course, participants will be asked to search and read references or documents related to Global Warming, Sustainable Development Goals, Low Carbon City Development, Low Carbon Scenario Development, IPCC 2006 Guidelines for National Greenhouse Gas Inventory, Situation of crisis and extreme event such as flood and drought, pandemic etc .

3) Assignments

Participants will be provided with guided assignments in order to make them exercise on some issues that they need to do some individual search for data or information including video clip of selected as case study.

6. Number of Participants

20 participants

7. Participants Criteria

Applicants to this course should

- have at least a bachelor degree in Science or Engineering in relation to energy, environment, economics, architecture, or related fields, and good English proficiency.
- have at least 1 year working experience.
- currently work closely in the areas of urban development and planning.
- have an understanding of an involvement in environmental technology and management, or environmental management.
- be strongly motivated to improve the city development and planning; and/or apply “Low Carbon City Development and Implementation” approach to his/her city to mitigate global warming and climate change.

8. Invited Country

- **Asia:** AEC member countries, Afghanistan, Bangladesh, Georgia, Iran, Jordan, Kyrgyzstan, Maldives, Nepal, Oman, Pakistan, Palestine, Sri Lanka, Tajikistan, Timor-Leste, Uzbekistan, and Yemen.
- **Africa:** Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Congo, Djibouti, Egypt, Eritrea, Ethiopia, Gabon, Ghana, Guinea, Lesotho, Libya, Malawi, Mali, Mauritania, Mauritius, Morocco, Namibia, Rwanda, South Sudan, Sudan, Swaziland, Togo, Tunisia, Zambia, Zimbabwe.
- **Pacific:** Cook Island, Fiji, Marshalls Island, Nauru, Palau, Papua New Guinea, Vanuatu, Solomon Island, Tonga, Tuvalu.
- **Member Countries:** FEALAC, OAS and CARICOM.

9. Training host

The Joint Graduate School of Energy and Environment (JGSEE), Center of Excellence on Energy Technology and Environment (CEE-PERDO), King Mongkut’s University of Technology Thonburi, 126 Pracha-Uthit Road, Bangmod, Tungkru, Bangkok 10140, Thailand.

10. Training Methods

Virtual Online conference Plate form

11. Expected Results

Participants are expected to have a good understanding and knowledge in global warming and how to develop low carbon city development pathway for a sustainable development of their city while reducing the GHG emissions to mitigate climate change. Also, they are expected to understand the crisis situation that may impact to the development. Participants understand how to manage solid waste under flood, pandemic and plastic situation and be able to transfer their knowledge acquired from this training to others inside and outside their organization. Finally, they are expected to pursue the network they have set up during this training.

12. Evaluation

Participants will be evaluated through the following processes:

- Pre-test and Post-test
- City-Country paper and oral presentation
- Participation in class/workshop discussion
- Answers to assignments

12. Institution

12.1 Executing/Implementing Agency

The Joint Graduate School of Energy and Environment (JGSEE), Center of Excellence on Energy Technology and Environment (CEE-PERDO), King Mongkut's University of Technology Thonburi (KMUTT)

126 Prachauthit Road, Bangmod, Tungkru, Bangkok 10140, Thailand

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

Contact person: Ms. Kulakarn Soontornwat (Head of PRO Unit)

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

Website: www.jgsee.kmutt.ac.th

JGSEE-CEE at KMUTT is a well-known institution offering international Master and PhD programs in Energy and Environmental Technology, and international Master programs in Energy and Environmental Technology and Management, and conducting high impact research in energy and environment. JGSEE-CEE possesses 3 research directions including Low Carbon Energy Technology, Environment and Climate Science, and Energy and Environmental Policy. Under the Environment and Climate Science research direction, the Advance Greenhouse Gas and Aerosols Research (AGAR) Laboratory constitutes the research focus specialized in GHG emission inventory and mitigation options to support low carbon scenario development and implementation at city and national levels. In addition, JGSEE-CEE has established the Partnership Relations and Outreach (PRO) unit to serve as coordination and operation body for organization of international conferences, seminars, workshops and trainings. The PRO unit will work closely with experts for

organizing the coursework and coordinating the technical visits of this training course. The coursework will mainly be conducted at KMUTT Bangmod Campus, where offers a high standard and comfortable guesthouse, Heliconia House.

12.2 Collaborative Organizations

None

13. Expenditure/Funding

Detailed of budget estimation as per Attachment 2

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).