



**JICA**



**TISTR**



**NSTDA**



**TICA**

**General Information**

**for**

**Renewable Energy Technologies and Knowledge Transfer for  
Strengthening and Achieving ASEAN's Sustainable Development Goals**

**May 15 – June 2, 2023**

Conducted by

**The Government of Japan**  
Japan International Cooperation Agency (JICA)

**The Government of Thailand**  
Thailand International Cooperation Agency (TICA)  
Thailand Institute of Scientific and Technological Research (TISTR)  
National Science and Technology Development Agency (NSTDA)



## *Thailand International Cooperation Agency (TICA)*

### **TICA's Vision**

TICA aspires to be a central agency on technical and development cooperation under the Royal Thai Government to serve as a bridge for global sustainable development.

### **TICA's Mission**

TICA is the main agency to execute international development cooperation with foreign governments, international organizations and intergovernmental organizations.

TICA is the focal agency in formulating strategic guidelines and policies on international development cooperation to be comprehensively in line with the Royal Thai Government's foreign policies.

### **Objectives**

- To develop international cooperation plan, study and analysis on cooperation policy including implementation, follow-up and evaluation of technical cooperation projects.
- To administer development cooperation programmes provided to developing countries according to foreign policies of the Royal Thai government.
- To cooperate with various development partners including foreign governments and international organizations to develop technical cooperation projects for development under bilateral and multilateral frameworks.
- To administer fellowships and scholarships offered to developing countries for human resources development in public and private sectors as well as civil society.
- To coordinate international development cooperation.
- To disseminate information regarding development cooperation to government agencies concerned and international organizations.

### **Thailand International Cooperation Agency (TICA)**

Ministry of Foreign Affairs  
8<sup>th</sup> Floor, Government Complex Building B (South Zone)  
Chaengwattana Road,  
Laksi District, Bangkok 10210  
Thailand

Telephone : +66-2203-5000 ext. 43302  
Facsimile : +66-2143-8357  
Website : <https://tica-thaigov.mfa.go.th>



*Japan International Cooperation Agency (JICA)*

**ODA and JICA**

Since 1954, Japan has been providing financial and technical assistance to developing countries through ODA (Official Development Assistance), aiming to contribute to the peace and development of the international community. JICA is in charge of administering all ODA such as technical cooperation, ODA loans and grant aid in an integrated manner. JICA assists and supports developing countries as the executing agency of Japanese ODA, and works in over 150 countries and regions and has some 100 overseas offices.

**JICA's Vision**

**Leading the world with trust**

JICA, with its partners, will take the lead in forging bonds of trust across the world, aspiring for a free, peaceful and prosperous world where people can hope for a better future and explore their diverse potentials.

**JICA's Mission**

JICA, in accordance with the Development Cooperation Charter, will work on human security and quality growth.

**Actions**

1. Commitment: Commit ourselves with pride and passion to achieving our mission and vision.
2. Gemba: Dive into the field ("gemba") and work together with the people.
3. Strategy: Think and act strategically with broad and long-term perspectives
4. Co-creation: Bring together diverse wisdom and resources.
5. Innovation: Innovate to bring about unprecedented impacts.

**Japan International Cooperation Agency (JICA), Thailand Office**

31<sup>st</sup> Floor, Exchange Tower,  
388 Sukhumvit Road,  
Klongtoey, Bangkok 10110  
Thailand

Telephone : +66 2261 5250

Facsimile : +66 2261 5263

Website : <http://www.jica.go.jp/thailand/english/index.html>



## ***Thailand Institute of Scientific and Technological Research (TISTR)***

### **TISTR**

TISTR is a state enterprise under the Ministry of Higher Education, Science, Research and Innovation. TISTR was firstly established on 25th May 1963, under the Applied Scientific and Research Corporation of Thailand (ASRCT) Act B.E. 2506 (1963), in order to implement special science and technology policies of the Royal Thai Government. After the establishment of the Ministry of Science, Technology and Environment (MOSTE) in 1979, ASRCT Act was repealed and replaced by the Thailand Institute of Scientific and Technological Research B.E. 2522 (1979) Act. Classified as a state enterprise of promotion category, TISTR has been financially supported via the annual budgets allocated by the Government.

### **TISTR's Vision**

Strengthening SMEs and communities through an innovation, science, and technology ecosystem for sustainability

### **TISTR's Mission**

1. To conduct research, development, and integration of science, technology, and innovation for the creation of a value-added economy based on biodiversity to increase national competitiveness and development sustainably.
2. To transfer technology and innovation to the industrial sector and community enterprises for the maximum utilization of economic, social, and environmental aspects.
3. To provide services in analysis, testing, calibration, quality system certification, training, and consultancy in order to leverage standards and competitiveness of the industrial sector.
4. To develop an organizational management system to be a high-performance, modern, and good governance organization.

### **Thailand Institute of Scientific and Technological Research (TISTR)**

35 Mu 3 Technopolis,  
Tambon Khlong Ha, Amphoe Khlong Luang  
Pathum Thani 12120  
Thailand

Telephone : +66-2577-9494  
Facsimile : +66-2577-9009  
Website : [www.tistr.or.th](http://www.tistr.or.th)

**The Third Country Training Programme (TCTP)**  
**on**  
**Renewable Energy Technologies and Knowledge Transfer for Strengthening and**  
**Achieving ASEAN’s Sustainable Development Goals**  
**May 15 – June 2, 2023**

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The Third Country Training Programme on “Renewable Energy Technologies and Knowledge Transfer for Strengthening and Achieving ASEAN’s Sustainable Development Goals” is conducted by the Government of Thailand and the Government of Japan as part of their Technical Cooperation Scheme.

The course arrangements are referred to Record of Discussion signed on 30<sup>th</sup> March 2022 and jointly supported by Thailand International Cooperation Agency (TICA), Ministry of Foreign Affairs, and Japan International Cooperation Agency (JICA) in collaboration with Thailand Institute of Scientific and Technological Research (TISTR) and National Science and Technology Development Agency (NSTDA), Ministry of Higher Education, Science, Research and Innovation.

**Background**

The ASEAN member states (AMS) has growth of population around 16% by 10 years, and the economic has been predicted grow more than 5% per year during 2014 – 2025. The increasing of economic growth results in a rapid rise in energy demand. AMS represent one of the most dynamic parts of the global energy system with demand growth by 60% over the past 15 years, and now accounts for 5% of total global demand and will increase to 7.5% by 2025. The energy supply in AMS mostly is fossil fuel to serve the increasing demand. The region has insufficient indigenous fossil fuel resources to meet its growing energy demand, and the share of imported fossil fuel will increase, which has important energy security implications. Rising energy consumption, particularly fossil based, will increase environmental impact. Energy-related CO<sub>2</sub> emissions will increase by 61% and it will amount to over 2.2 Gt annually in 2025.

At present, AMS are trying to rebalance their energy mix, responding to their own resource availability, energy security and environmental concerns. Their selected energy policies and targets of energy efficiency, renewable energy and climate change are included to achieve sustainable development goals (SDG7 and 13) as well as balancing of Water-Energy-Food Nexus (WEF Nexus) by ensuring affordable and secure energy and mitigating environmental impacts. The rebalance of AMS energy mix could be achieved by deploying a range of biomass conversion technologies and approaches suitable for each AMS’s context. AMS share a common challenge to meet rising demand in a secure, affordable and sustainable manner. Many countries have launched policies and measures to encourage renewable energy from indigenous resources to reduce fossil fuel imports, mitigate environmental impacts and raise energy security in national and regional level.

In spite of AMS’ resources capabilities, there is a huge untapped potential of the resources due to lack of technology advances in some countries. In order to leverage the

maximum potential for biomass resources to be renewable energy in a sustainable and inclusive manner, AMS need to enhance platform and collaboration for cross-border sharing of skills, experiences, best practice and technologies related to renewable energy among the region.

TCTP will be the platform for transferring knowledge and technologies to AMS' researchers and relevant officials to apply with their indigenous resources. It is aimed to realize "Low Carbon Society (LCS)", energy security, and achieve sustainable development goals to ensure access to affordable, reliable, sustainable and modern energy for all.

### **Title**

The Third Country Training Programme on Renewable Energy Technologies and Knowledge Transfer for Strengthening and Achieving ASEAN's Sustainable Development Goals

### **Overall Goal**

The overall goal of the Course is to transfer the knowledge and share experiences of renewable energy technologies to ASEAN members for their strength and achievement on sustainable development goals

### **Anticipated Benefits:**

1. To enhance the understanding on related policy and implementation, technologies and practices of processing, standardization, and commercial application of renewable energy
2. To encourage researchers to gain more understanding on sustainability assessment of renewable energy and its utilization in environmental and sustainable contexts

### **Duration**

May 15 – June 2, 2023 (3 weeks)

### **Invited Countries**

Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Vietnam and Thailand

### **Number of participants**

The total number of participants from the invited countries shall not exceed twenty-six (26) in total, in particular, 24 participants from Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Vietnam, and 2 participants from Thailand to participate the TCTP.

### **Language**

The courses will be conducted in English

## **Institution**

The course will be conducted by Thailand Institute of Scientific and Technological Research (TISTR), National Science and Technology Development Agency (NSTDA), Ministry of Higher Education, Science, Research and Innovation.

## **Venue**

The course will be conducted at

1. Thailand institute of Scientific and Technological Research (TISTR)  
Address: 35 Mu 3, Technopolis, Khlong Ha, Khlong Luang, Pathumthani 12120 Thailand  
Tel: 0 2577 9000  
Fax: 0 2577 9009  
URL: <http://www.tistr.or.th>
2. National Science and Technology Development Agency (NSTDA) by National Energy Technology Center (ENTEC)  
Address: 114 Thailand Science Park (TSP), Phahonyothin Road, Khlong Nueng, Khlong Luang, Pathum Thani 12120 Thailand  
Tel: 0 2564 6500  
Fax: 0 2564 6501-5  
URL: <https://www.entec.or.th>
3. National Science and Technology Development Agency (NSTDA) by Technology and Informatics Institute for Sustainability (TIIS)  
Address: 114 Thailand Science Park (TSP), Phahonyothin Road, Khlong Nueng, Khlong Luang, Pathum Thani 12120 Thailand  
Tel: 0 2564 6500  
Fax: 0 2564 6404  
URL: <https://www.nstda-tiis.or.th>

## **Qualifications**

The participants are requested to have the following qualifications.

1. Being nominated by their governments in accordance with the procedure stipulated in Application Procedure (1);
2. Having completed at least Bachelor Degree or equivalent academic background in science, engineering or related field;
3. Being officials / officers with at least two (2) years working experience in energy field (Researcher or policy related officer);
4. Being under 45 years of age;
5. Being proficient in spoken and written English; and able to contribute effectively to classroom discussion
6. Being in good health, both physically and mentally; each participant should have a health certificate provided by an authorized physician. The medical report form is also attached together with the Nomination form. Pregnancy is regarded as a disqualifying

condition for participation in the Course; and

7. Not being serving in any form of the military services.

### **Application Procedure**

1. The Applicant or the Government applying for the Course on behalf of applicant(s) shall forward the application form of each applicant not later than 60 days before the commencement of the Course, and the details are indicated in the following:

- Three (3) hard copies to:  
Royal Thai Embassy in their country
- One soft/digital copy to:  
Director, Human Resources Development Cooperation Division,  
Thailand International Cooperation Agency,  
Ministry of Foreign Affairs of Thailand  
The Government Complex, Building B (South Zone), 8th Floor,  
Chaengwattana Road, Laksi District,  
Bangkok 10210, THAILAND  
Tel + 66-2203-5000 ext. 43302, Fax: +66-2143-8451  
E-mail: tctp.tica@gmail.com, siwalee.w@mfa.go.th
- One soft/digital copy to:  
Dr. Panida Thepkhun  
Expert Center of Innovative Clean Energy and Environment  
Thailand Institute of Scientific and Technological Research  
35 Mu 3 Technopolis, Tambon Khlong Ha,  
Amphoe Khlong Luang,  
Pathum Thani, 12120, THAILAND  
Tel +66-2577-9494, Fax. +66-2577-9009  
E-mail: panida\_s@tistr.or.th

2. The Government of Thailand will inform the applying Governments the name(s) of the selected nominee(s) to participate in the course not later than thirty (30) days before the commencement of the Course.

### **Certificate**

Participants who have successfully completed the course will be awarded a certificate by JICA, TICA, TISTR, and NSTDA.

### **Allowance and Expenses**

The following allowance and expenses will be borne by the the Government of Thailand and the Government of Japan

1. Economy class round trip air ticket for arrival and departure the International Airport in Bangkok designated by TICA will be issued to the approved candidate.

- The approved candidates are requested to send the **copy of their passport for arranging the electronic – air ticket.**



- **Electronic – air ticket** will be sent to the applicant in advance by the representative of the Thai Airways International Public Company Limited, or through the National Airline Office in the participant's country.

2. Living allowance at the rate of Baht 600 per day (equivalent to approximately US\$17) will be paid to the participant during stay in Thailand. This living allowance is for food, local transportation and other personal daily expenses. However, each participant is suggested to have his/her own pocket money sufficient for any emergency case available prior to the allowance payment.

### **Accommodation and Meals**

The accommodation of the participants allocated outside TISTR. TISTR's shuttle van will be available for a daily round trip pickup service between participants' accommodation and TISTR and other locations if necessary. Participants can have their meals at the restaurant in Technopolis area by their own per-diem.

### **Contact persons**

For more information, please contact

- Dr. Panida Thepkhun

Address: Thailand Institute of Scientific and Technological Research  
35 Mu 3 Technopolis, Khlong Ha, Khlong Luang, Pathum Thani  
12120, Thailand

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E-mail: [panida\\_s@tistr.or.th](mailto:panida_s@tistr.or.th)

- Director, Human Resources Development Cooperation Division,

Address: Thailand International Cooperation Agency,  
Ministry of Foreign Affairs of Thailand  
The Government Complex, Building B (South Zone), 8th Floor,  
Chaengwattana Road, Laksi District, Bangkok 10210,  
THAILAND

Tel + 66-2203-5000 ext. 43302, Fax: +66-2143-8451

E-mail: [tctp.tica@gmail.com](mailto:tctp.tica@gmail.com), [siwalee.w@mfa.go.th](mailto:siwalee.w@mfa.go.th)

### **Other necessary information:**

1. Participants are required to arrive in Thailand on the date as designated by the TICA after its confirmation of acceptance. However, it will be finally confirmed to the air tickets sent to the participants. Participants are also requested to confirm the flight details and date of arrival in Bangkok to the TICA at least three days before the course commencement.

2. Participants should assume responsibility for other expenses occurred during travel between the participants' home countries and Thailand.

3. Prior to arrival in Thailand, all participants should obtain the Non-Immigrant VISA (F) from the Royal Thai Embassy or Consular Representative in

their countries or the countries nearby. The visa fee, with receipt of Thai embassy can be reimbursed not exceeding 2,000 Baht.

4. Participants should make their own arrangements for any private financial matters. This is not provided by the TICA and JICA.

5. AOT Limousine from Airport to the reserved hotel will be provided. Upon arrival at Suvarnabhumi International Airport, after passing custom clearance and the inner exit gate, please find the counter of AOT Limousine and inform your name to AOT Limousine staff. Kindly note the logistic fee will be charged on TISTR directly.

6. Participants are required to attend according to the course schedule.

7. Participants are requested not to bring any of their families to the training course.

### **Life and Health Insurance**

Medical insurance will be provided for participants who become ill during their stay in Thailand.

### **Course Outline**

#### 1. General Course:

- 1.1 Key Note address on Introduction of TCTP & related organizations
- 1.2 Country report presentations on biofuel policy, current status and available technologies
- 1.3 Biofuel policy in Thailand: development and lesson learned
- 1.4 Biofuel market in Thailand

#### 2. Specific Course:

- 2.1 Renewable energy
  - 2.1.1 Resource assessment
  - 2.1.2 Energy and environment targets
  - 2.1.3 Relevant policy and measures
- 2.2 Conversion technology
  - 2.2.1 Electricity generation
  - 2.2.2 Pyrolysis and gasification technologies
  - 2.2.3 Biofuel and biogas production
- 2.3 Implementation, utilization and management
  - 2.3.1 Smart grid technology
  - 2.3.2 Biofuel standard and specification
  - 2.3.3 Material compatibility testing
  - 2.3.4 Engine performance and emission test
- 2.4 Environment and sustainable assessment
  - 2.4.1 Life Cycle Assessment (LCA)
  - 2.4.4 Sustainable assessment
- 2.5 Workshops, discussion and presentations

## Annex-1

### **Country Report for The Third Country Training Programme on Renewable Energy Technologies and Knowledge Transfer for Strengthening and Achieving ASEAN's Sustainable Development Goals**

The course provides a forum for discussion and exchange of experience between participants, lecturers and others. Each participating country is therefore, requested to prepare and present a country report on alternative and renewable energy policy and renewable energy situation from her/his respective country. Each participant has to prepare a country report in two (2) formats. The country report will be in text not more than 10 pages of A4 format, type written in single space using Times New Roman font 12 and 2.5 cm spaces for top, bottom left and right margins. The format for the presentation should prepare in power point, which may take about 10-20 minutes for each country.

Exercises and group assignments will be given throughout the course, aiming at increasing the training and practical orientation, as well as bringing the different nationalities close together.

The course covers **3 weeks** with lectures, hands-on training, group working, and discussion. Study tours are planned to support lectures and demonstrate technology.

#### **Content of Country Report**

1. Field of Apply.
2. Name of Participant(s)
3. Chart of Organization the participant belong to, the type of participant's current responsibility, managing, training, instructing, and job description.
4. Information
  - 4.1 Brief General Information
    - a. Introduction to participant's country (Location, Population, Map, Natural Resources, etc.)
    - b. Government Administration System
    - c. Social and Economic Background
  - 4.2 Specific Information
    - a. National policy related to alternative and renewable energy.
    - b. Describe situation regarding the alternative and renewable energy in participant's country
    - c. General information and basic data of biofuels utilization in participant's country.
    - d. Describe situation regarding your work in relation with biofuels production and utilization.
    - e. Explain your idea on how to improve your work and how the required training program might contribute to such improvement.
    - f. After the course, it required the participants to make a presentation of an outcome of the training and Post-Test on the last day of the training course.

## Country Lists and Focal Point Information

| Country   | Focal Point   |
|-----------|---|
| Cambodia  | <p>Mr. Toch Sovanna<br/>           Director<br/>           Department of Renewable Energy and Other Energy<br/>           General Department of Energy<br/>           Ministry of Mines and Energy<br/>           #1, Preah Norodom Blvd, Sangkat Wat Phnom, Khan Daun Penh,<br/>           Phnom Penh, Cambodia<br/>           Tel. +855 17 856 927<br/>           E-mail: <a href="mailto:tochsovannamme@gmail.com">tochsovannamme@gmail.com</a>, <a href="mailto:tochsovanna168@gmail.com">tochsovanna168@gmail.com</a></p>              |
|           | <p>Mr. Sothan Nuth<br/>           Deputy Director for Academic Affairs<br/>           Institute of Technology of Cambodia (ITC)<br/>           PO Box 86, Russian Conf. Blvd. Phnom Penh, Cambodia.<br/>           Tel : 855 23 880 370 / 982 404<br/>           Fax : 855 23 880 369<br/>           E-mail: <a href="mailto:sothannuth@gmail.com">sothannuth@gmail.com</a></p>   |
| Indonesia | <p>Dr. Joni Prasetyo<br/>           Researcher<br/>           Center for Energy Resources and Chemical Industry<br/>           Agency for the Assessment and Application of Technology<br/>           Ministry of Research and Technology<br/>           Building 625, Cluster Energy, Puspiptek, Serpong, South Tangerang,<br/>           Indonesia<br/>           Tel. +62 21 7579 1355 Fax +62 21 7579 1355<br/>           E-mail: <a href="mailto:prasetyo_j2001@yahoo.com">prasetyo_j2001@yahoo.com</a></p>                            |
|           | <p>Prof. Tatang Hernas Soerawidjaja,<br/>           President of Indonesian Association of BioEnergy Scientists and<br/>           Technologists (IABEST)<br/>           Head of Center for Research on Natural Resource Utilization, Institut<br/>           Teknologi Bandung (ITB)<br/>           ITB X Labtek Building , Jl. Ganesha 10, Bandung 40132, Indonesia<br/>           E-mail: <a href="mailto:tatanghs@che.itb.ac.id">tatanghs@che.itb.ac.id</a>, <a href="mailto:thsoerawidjaja@gmail.com">thsoerawidjaja@gmail.com</a></p> |
| Lao PDR   | <p>Mr. Phouvieng KEOBOUPHA<br/>           Director General, Research Institute of Energy and Mines<br/>           Ministry of Energy and Mines<br/>           P.O Box 4708, DanXang Village,<br/>           Xaythany District, Tha Ngon road,<br/>           Vientiane, Lao PDR<br/>           Tel. +856 21 739 011 Fax +856 21 739 009<br/>           Mobile: + 856 20 22 204 324<br/>           Email: <a href="mailto:phouving@hotmail.com">phouving@hotmail.com</a></p>   |
|           | <p>Mr. Phetsavanh RATTANATHONGXAY<br/>           Director General, Department of Energy Management<br/>           Ministry of Energy and Mines<br/>           Nong bone Road<br/>           P.O.Box 4708</p>  |

| Country     | Focal Point   |
|-------------|---|
|             | <p>Vientiane, Lao PDR<br/>           Tel: +856 20 9999 3388, +856 20 5542 4255<br/>           Email: <a href="mailto:doe_mih@yahoo.com">doe_mih@yahoo.com</a></p>   |
|             | <p>Mr. Somphith KEOVICHITH<br/>           Director General, Department of Energy Business<br/>           Ministry of Energy and Mines<br/>           Nong bone Road<br/>           P.O.Box 4708<br/>           Vientiane, Lao PDR<br/>           Tel: +856 21 452 539, +856 20 9980 1573 Fax: +856 21 415 626<br/>           Email: <a href="mailto:somphith@deb.gov.la">somphith@deb.gov.la</a>, <a href="mailto:sacksomphith@gmail.com">sacksomphith@gmail.com</a></p> <p>Mr. Chantho MILATTANAPHENG<br/>           Director General, Department of Energy Efficiency and Promotion<br/>           Ministry of Energy and Mines<br/>           Nong bone Road<br/>           P.O.Box 4708<br/>           Vientiane, Lao PDR<br/>           Tel: +856 20 5659 7989 Fax: +856 21 413 012<br/>           Email: <a href="mailto:grecolaos@outlook.com">grecolaos@outlook.com</a></p>   |
| Malaysia    | <p>Prof. Dr. Mohd Sobri Takriff<br/>           Research Centre for Sustainable Process Technology (CESPRO),<br/>           Level 1, Technopolis Cyber Academia (AST) Building,<br/>           Faculty Engineering and Built Environment,<br/>           Universiti Kebangsaan Malaysia,<br/>           43600 UKM Bangi, Selangor Darul Ehsan<br/>           Tel: +603-89216417/6102<br/>           Email: <a href="mailto:sobritakriff@ukm.edu.my">sobritakriff@ukm.edu.my</a></p>  |
| Myanmar     | <p>Dr. Khin San Win<br/>           Department of Engineering Chemistry<br/>           Technological University (Hmawbi)<br/>           Hmawbi Township, Yangon Division,<br/>           The Republic of the Union of Myanmar<br/>           Tel. +95 1 620454<br/>           E-mail: <a href="mailto:tuhmawbi@gmail.com">tuhmawbi@gmail.com</a></p>   |
| Philippines | <p>Atty. Rino E. Abad Director, OIC,<br/>           Oil Industry Management Bureau Department of Energy Energy Center,<br/>           Rizal Drive, Bonifacio Global City, Taguig City, Philippines 1632<br/>           Tel. +632 840 2187<br/>           E-mail: <a href="mailto:attyrino_abad@yahoo.com.ph">attyrino_abad@yahoo.com.ph</a> or <a href="mailto:rabad@doe.gov.ph">rabad@doe.gov.ph</a></p> <p>Mr. Alvin David T. Lim Division Chief,<br/>           Oil Industry Standards and Monitoring Division Oil Industry Management<br/>           Bureau Department of Energy Energy Center, Rizal Drive, Bonifacio<br/>           Global City, Taguig City, Philippines 1632<br/>           Tel. +632 840 2155<br/>           E-mail: <a href="mailto:alim@doe.gov.ph">alim@doe.gov.ph</a></p> <p>Prof. Jessie Elauria<br/>           Agricultural and Bio-Process Division, Institute of Agricultural<br/>           Engineering, College of Engineering and Agro-Industrial Technology,</p> |

| Country  | Focal Point   |
|----------|---|
|          | University of the Philippines Los Baños<br>College, 4031 Laguna, Philippines<br>Tel: +63 4 9536 0250<br>E-mail: <a href="mailto:jcelauria@yahoo.com">jcelauria@yahoo.com</a>  |
| Vietnam  | Dr. NGUYEN Hong Nam,<br>Director of General Education Department,<br>University of Science and Technology of Hanoi (USTH),<br>Vietnam Academy of Science and Technology (VAST),<br>18 Hoang Quoc Viet, Cau Giay, Hanoi, Vietnam,<br>Tel: + 84 967720086,<br>Email: <a href="mailto:nguyen-hong.nam@usth.edu.vn">nguyen-hong.nam@usth.edu.vn</a>                           |
|          | Assoc.Prof. Dr. LE ANH Tuan<br>Dean, School of Transportation Engineering<br>Hanoi University of Science and Technology (HUST),<br>No.1 Dai Co Viet Road, Hanoi, Vietnam<br>Tel: +84 4 38683617, Mobile: +84 904702438<br>E-mail: <a href="mailto:tuan.leanh@hust.edu.vn">tuan.leanh@hust.edu.vn</a> , <a href="mailto:tuan.leanh05@gmail.com">tuan.leanh05@gmail.com</a> |
| Thailand | Mr. Praphon Wongtharua<br>Director General<br>Department of Alternative Energy Development and Efficiency<br>Ministry of Energy, Thailand<br>Tel. +66 2223 0021-9 ext. 1320, 1625<br>E-mail: <a href="mailto:praphon_w@dede.go.th">praphon_w@dede.go.th</a>   |
|          | Mr. Witoon Kulcharoenwirat<br>Director General<br>Department of Energy Business, Ministry of Energy<br>555/2 Energy Complex Building B, Floor 19 <sup>th</sup> , Vibhavadi Rangsit Road,<br>Chatuchak District, Bangkok 10900, Thailand.<br>Tel. +66 2794 4000, Fax. +66 2749 4300<br>Email: <a href="mailto:witoon@doeb.go.th">witoon@doeb.go.th</a>                     |
|          | Assoc.Prof.Dr. Penjit Srinophakun<br>Director<br>KU-Biodiesel Project<br>Department of Chemical Engineering, Kasetsart University<br>50 Ngamwongwan Rd., Ladyao, Jatujak, Bangkok 10900, Thailand<br>Tel. +66 2797 0999 ext 1213<br>Email: <a href="mailto:fengpjs@ku.ac.th">fengpjs@ku.ac.th</a>   |
|          | Assoc.Prof. Chakrit Tongurai<br>Director<br>Specialized R&D Center for Alternative Energy from Palm Oil and Oil<br>Crops<br>Faculty of Engineering, Prince Songkla University (Hat Yai)<br>2 Khohong, Hat Yai, Songkhla, 90112, Thailand<br>Tel. +66 7428 7287<br>Email: <a href="mailto:chakrit.t@psu.ac.th">chakrit.t@psu.ac.th</a>                                     |
|          | Dr. Suwit Chaikiattiyos<br>Director General<br>Department of Agriculture  |

| <b>Country</b> | <b>Focal Point</b>   |
|----------------|--|
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### Tentative Schedule

| <b>Date/Month/Year</b> | <b>Morning (9.00 – 12.00)</b>   | <b>Afternoon (13.00 – 16.30)</b>   | <b>Evening</b> |
|------------------------|---|--|----------------|
| May 14, 2023           | Participants' arrival   |  |                |
| May 15, 2023           | <ul style="list-style-type: none"> <li>• Welcome remark &amp; Opening ceremony</li> <li>• Introduction to TCTP &amp; Related organization</li> <li>• Self introduction</li> <li>• Country report               <ul style="list-style-type: none"> <li>- Cambodia</li> <li>- Indonesia</li> <li>- Laos PDR</li> <li>- Malaysia</li> <li>- Myanmar</li> <li>- Philippines</li> <li>- Thailand</li> <li>- Vietnam</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• Thailand's Alternative Energy Development Plan</li> <li>• Thailand's Power Development Plan</li> <li>• Pre-test</li> </ul>                                | Welcome Dinner |
| May 16, 2023           | <ul style="list-style-type: none"> <li>• Application of Solar PV</li> <li>• EV car: Policy and Implementation</li> <li>• Smart Grid Technology</li> </ul>   | <ul style="list-style-type: none"> <li>• Site visit - Energy Conservation Building in Honour of His Majesty the King</li> </ul>  | Free           |
| May 17, 2023           | <ul style="list-style-type: none"> <li>• Pyrolysis and Gasification Technology</li> <li>• Raw material properties and analysis</li> <li>• Raw material properties and analysis (Lab)</li> </ul>   | <ul style="list-style-type: none"> <li>• Biogas Technology and Properties Analysis</li> <li>• Biogas production process (Lab)</li> <li>• Biogas Technology: Property and analysis (Lab)</li> </ul> | Free           |
| May 18, 2023           | <ul style="list-style-type: none"> <li>• Site visit : Tandiao Municipal Solid Waste Management, Saraburi Province</li> </ul>  | <ul style="list-style-type: none"> <li>• Site visit : Center of Fuels and Energy from Biomass, Chulalongkorn University, Saraburi Province</li> </ul>  | Free           |
| May 19, 2023           | <ul style="list-style-type: none"> <li>• Site visit : EGAT Learning Center, Lamtakhong, Nakhonratchasima Province</li> </ul>  | <ul style="list-style-type: none"> <li>• Site visit : Renewable Energy Demonstration Plant from Biomass and Waste, TISTR Lamtakhong Research Station, Nakhonratchasima Province</li> </ul>         | Free           |
| May 20, 2023           | Cultural Visit  |  | Free           |
| May 21, 2023           | Self-learning   |  | Free           |



| <b>Date/Month/Year</b> | <b>Morning (9.00 – 12.00)</b>  | <b>Afternoon (13.00 – 16.30)</b>   | <b>Evening</b> |
|------------------------|--|--|----------------|
| May 22, 2023           | <ul style="list-style-type: none"> <li>• Biodiesel Production and Properties Analysis</li> <li>• Biodiesel Production and Properties Analysis (Lab)</li> </ul>   | <ul style="list-style-type: none"> <li>• Biodiesel Pilot Plant and Upgrading Unit</li> <li>• Biodiesel Pilot Plant and Upgrading Unit (Lab)</li> </ul> | Free           |
| May 23, 2023           | <ul style="list-style-type: none"> <li>• Carbon capture concept : Biomethanol production process</li> </ul>  | <ul style="list-style-type: none"> <li>• Carbon capture concept : Algae cultivation and utilization</li> </ul>   | Free           |
| May 24, 2023           | <ul style="list-style-type: none"> <li>• Overview of Biodiesel Standard – Utilization</li> </ul>   | <ul style="list-style-type: none"> <li>• Biodiesel Utilization in Engine &amp; Materials Compatibility</li> </ul>                                      | Free           |
| May 25, 2023           | <ul style="list-style-type: none"> <li>• Biodiesel Engine Test (Lab)</li> </ul>  | <ul style="list-style-type: none"> <li>• Biodiesel Engine Test (Lab) cont.</li> </ul>  | Free           |
| May 26, 2023           | <ul style="list-style-type: none"> <li>• Site visit: Soksomboon Vegetable Oil Co.,Ltd.</li> </ul>  |  | Free           |
| May 27, 2023           | Cultural Visit   |  | Free           |
| May 28, 2023           | Self-learning  |  | Free           |
| May 29, 2023           | <ul style="list-style-type: none"> <li>• Principle of Life Cycle Assessment</li> </ul>   | <ul style="list-style-type: none"> <li>• Sustainability Assessment of Bioenergy System</li> </ul>  | Free           |
| May 30, 2023           | <ul style="list-style-type: none"> <li>• Sustainable Assessment of Transportation System Case Study in Japan</li> </ul>  | <ul style="list-style-type: none"> <li>• LCA and Sustainability Assessment Exercise</li> </ul>   | Free           |
| May 31, 2023           | <ul style="list-style-type: none"> <li>• Site Visit: Ecoefficiency Implementation Organization</li> </ul>  |  | Free           |
| June 1, 2023           | <ul style="list-style-type: none"> <li>• Post test</li> <li>• Group Discussion for Country Report on Post-workshop Action</li> </ul>   |  | Free           |
| June 2, 2023           | <ul style="list-style-type: none"> <li>• Country Report on Post-workshop Action Plan <ul style="list-style-type: none"> <li>- Cambodia</li> <li>- Indonesia</li> <li>- Laos PDR</li> <li>- Malaysia</li> <li>- Myanmar</li> <li>- Philippines</li> <li>- Thailand</li> <li>- Vietnam</li> </ul> </li> <li>• Certificate Presentation Ceremony</li> </ul> | <ul style="list-style-type: none"> <li>• Farewell Lunch</li> </ul>   | Free           |
| June 3, 2023           | Participants' Departure  |  |                |