



Course Outline

Annual International Training Course

Training on Global Warming Mitigation and Adaptation by Balancing Sustainable Energy Management and Sufficiency Economy Philosophy

1. **Course Title:** Training on Global Warming Mitigation and Adaptation by Sustainable Energy Management and Sufficiency Economy Philosophy 2023
2. **Duration:** June 7th – June 27th 2023
3. **Background and Rational:**

TICA: Thailand International Cooperation Agency

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 continue 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 relate.

Rational:

Global Warming is the rising of the mean temperature of the Earth's atmosphere and oceans since the late 19th century. The average surface temperature has increased since the early 20th century. The primary cause is the increasing of the greenhouse gases from fossil fuel and deforestation. The Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) is the international treaty developed in order to reduce the greenhouse gases. With limitation of commitment, it is not enough to stabilize the greenhouse gas.

The UNFCCC was adopted on 9 May 1992 and open for signature from 4 June 1992, during the United Nations Conference on Environment and Development (UNCED), or the Earth Summit, at Rio de Janeiro, Brazil. The Convention enters into force on 21 March 1994 and currently has 197 Parties. Thailand becomes a Party in the Convention on 28 March 1995, and thereafter participates in the Conference of the Parties (COP) to this day particularly COP 26 in Glasgow.

The post 2015 development agenda namely 17 Sustainable Development Goals (SDG). The SDG number 7 is the affordable and clean energy. The issue of energy is much more getting attention when various studies of global warming lead the people to the conclusion that the energy consumption is one the major causes for global warming. Referring to the Act of Energy Conservation and Promotion B.E. 2535 (1992) together with the Energy Conservation and Promotion Fund, Thailand has been revealing the consciousness and awareness in energy through various programs under the ministry of energy and its departments. The academic sector by many universities in the theme of energy in Thailand is directed toward to the part of mitigation by the technology of energy conservation and renewable energy. The emphasized technology is however caused the unbalance of environmental, social, and economical issues. Thailand is facing with the problem of energy consumption growth whereas the power supply by constructing the new power plant is in the difficulty of making people understand. There is always protest by local community during the preparation or construction of the new power plant. This reflects clearly to the unbalance of three pillars of sustainability.

Apart from applying the technology of energy conservation and renewable energy to alleviate global warming, demand-side management is also required for improving energy efficiency and raising public awareness of energy savings. The Sufficiency Economy Philosophy (SEP), which is a tool for achieving a balanced way of life under sustainable development based on three principles: moderation, rationality, and self-immunity, together with two prerequisites: virtues and knowledge, would be an approach for global warming mitigating and adaptation by

managing energy demand and increasing energy-saving awareness of the need to become self-sufficient.

This course pays attention to the area of the environmental, social and economic issues. A part of this program is the 2.5-week training on Global Warming Mitigation and Adaptation by Sustainable Energy Management and Sufficient Economy Philosophy.

The program aims at building the concept of balancing components in sustainable development. The output of this training is to have a training filling in the gap of the overview picture of the university and country. The participants will be able to disseminate and apply the concept of Sustainable Energy Management and Sufficient Economy Philosophy aiming to solve the global warming in their countries. The sustainability in view of self-direction without support from world scheme is the expected outcome.

Organization/Institution:

Faculty of Environmental Management, Prince of Songkla University

4. Objectives:

The program is designed to:

- To provide all participants with knowledge about the balancing of sustainability among economic, social, and environmental aspects.
- To provide all participants with various concepts of Sustainable Energy Management (SEM) to mitigate global warming.
- To provide all participants with an approach, based on Sufficient Economy Philosophy (SEP), for global warming mitigation and adaptation.
- To exchange the international ideas of global warming mitigation and adaptation.
- To create a network among all participants

5. Course Contents:

<i>Wednesday 7 June 2023</i>	
09.00 – 09.10 a.m.	VDO presentation: @Faculty of Environmental Management, Prince of Songkla University
09.10 – 09.20 a.m.	<i>Welcome, Introduction</i> <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>
09.20 – 09.30 a.m.	<i>Opening of the Training</i> <i>by representative from TICA</i>
09.30 – 12.30 a.m.	<i>Relative sea-level rise in South of Thailand using GNSS, satellite altimetry and tide gauges</i> <i>(1) VDO presentation:</i> Location : Tectonic plate movement measuring station Address: Phuket Province <i>Mr. Wim J.F.Simons, PSU</i>
13.00 – 16.00 p.m.	<i>Country Report</i> <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>
<i>Thursday 8 June 2023</i>	
09.00 – 12.00 a.m.	<i>The international experience of global warming mitigating and adaptation.</i> <i>(2) VDO presentation:</i> Location : Chana Power Plant Address: Pa Ching Subdistrict, Chana District, Songkhla Province <i>Mr. Md. Shahariar Chowdhury, PSU</i>
13.00 – 16.00 p.m.	<i>Country Report</i> <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>
<i>Friday 9 June 2023</i>	
09.00 – 12.00 a.m.	<i>Sustainable energy management</i> <i>(3) VDO presentation:</i> Location : Thung Yai Saraphee Address: Songkhla Rajabhat University, Satun Campus Satun Province <i>Dr. Issara Chanakaewsomboon, PSU</i>
13.00 – 16.00 p.m.	<i>Country Report</i> <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>

Monday 12 June 2023 : Renewable Energy	
09.00 – 12.00 a.m.	<i>Sola and application in Thailand</i> (4) VDO presentation: Location: Faculty of Environmental Management Address: Price of Songkla University, Kho Hong Sub-district, HatYai District Songkhla Province Mr. Suradej Santisakolwut
13.00 – 16.00 p.m.	Country Report Assoc. Prof. Dr. Kuaanan Techato, PSU
Tuesday 13 June 2023	
09.00 – 12.00 a.m.	<i>Wind turbine and low-speed vertical axis wind turbine</i> (5) VDO presentation: Location : Energy Absolute Company Limited Provincial Electricity Authority (PEA) / Electricity Generating Authority (EGAT) (Wind len) Address: Hua Sai Sub-district, Hua Sai District, Nakhon Si Thammarat Province /Ranot Sub-district, Ranot District, Songkhla Province Asst.Prof. Dr. Montri Luengchavanon, PSU
13.00 – 16.00 p.m.	Country Report Assoc. Prof. Dr. Kuaanan Techato, PSU
Wednesday 14 June 2023	
09.00 – 12.00 a.m.	<i>Lithium battery and Super capacitor</i> (6) VDO presentation: Location : Sirindhorn Building, Faculty of Engineering and Faculty of Environmental Management Address: Price of Songkla University, Kho Hong Sub-district, HatYai District Songkhla Province Asst.Prof. Dr. Montri Luengchavanon, PSU
13.00 – 16.00 p.m.	Country Report Assoc. Prof. Dr. Kuaanan Techato, PSU
Thursday 15 June 2023	
09.00 – 12.00 a.m.	<i>Biodiesel, biomass power plant, and biomass gasification</i> (7) VDO presentation: Location : New Biodiesel Co., LTD. Address: Sawiat, Tha Chang District, Surat Thani Dr.Issara Chanakaewsomboon, PSU
13.00 – 16.00 p.m.	Country Report Assoc. Prof. Dr. Kuaanan Techato, PSU

<i>Friday 16 June 2023</i>	
09.00 – 12.00 a.m.	Gasification (8) VDO presentation: Location : Biomass power plant Address : Trang Province Songkhla Province Phatthalung Province <i>Dr.Issara Chanakaewsomboon, PSU</i>
13.00 – 16.00 p.m.	Country Report Assoc. Prof. Dr. Kuaanan Techato, PSU
<i>Monday 19 June 2023</i>	
09.00 – 12.00 a.m.	Fuel Cell (9) VDO presentation: Location : Sirindhorn Building, Faculty of Engineering and Faculty of Environmental Management Address : Price of Songkla University, Kho Hong Sub-district, HatYai District Songkhla Province <i>Asst.Prof. Dr. Montri Luengchavanon, PSU</i>
13.00 – 16.00 p.m.	Country Report Assoc. Prof. Dr. Kuaanan Techato, PSU
<i>Tuesday 20 June 2023</i>	
09.00 – 12.00 a.m.	Nano Technology (10) VDO presentation: Location : Faculty of Environmental Management Address : Price of Songkla University, Kho Hong Sub-district, HatYai District Songkhla Province <i>Asst.Prof. Dr. Montri Luengchavanon, PSU</i>
13.00 – 16.00 p.m.	Country Report Assoc. Prof. Dr. Kuaanan Techato, PSU
<i>Wednesday 21 June 2023</i>	
09.00 – 12.00 a.m.	Geothermal (11) VDO presentation: Location : Betong Hot Spring Address : Betong District, Yala <i>Asst.Prof.Dr. Helmut Josep Durrast, PSU</i>
13.00 – 16.00 p.m.	Country Report Assoc. Prof. Dr. Kuaanan Techato, PSU

Thursday 22 June 2023	
09.00 – 12.00 a.m.	Sufficient Economy Philosophy (SEP) and Sustainable Development Goal (SDG) (12) VDO presentation: Location : Kriangsak Farm, Chiang Mai Province Address : Chiang Mai Province <i>Prof Dr. Kriangsak Mengamphan</i>
13.00 – 16.00 p.m.	Country Report <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>
Friday 23 June 2023	
09.00 – 12.00 a.m.	Sufficient Economy Philosophy (SEP) for community-based mitigating and adaptation to global warming (Part 1) (13) VDO presentation: Location : Ban Nam Rap Community Address : Trang Province <i>Dr. Nuttuya Yuangyai</i>
13.00 – 16.00 p.m.	Country Report <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>
Monday 26 June 2023	
09.00 – 12.00 a.m.	Sufficient Economy Philosophy (SEP) for community-based mitigating and adaptation to global warming (Part 2) (14) VDO presentation: Location : Ban Laem Community Address : Trang Province <i>Dr. Nuttuya Yuangyai</i>
13.00 – 16.00 p.m.	Country Report <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>
Tuesday 27 June 2023	
09.00 – 12.00 a.m.	Greenhouse Gases (GHG) For Community (15) VDO presentation: Location : Pattani Province and Narathiwat Province <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>
13.00 – 16.00 p.m.	Country Report <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>
16.00 – 17.00 p.m.	Conclusion & Closing Ceremony <i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>

6. Participants Criteria:

Applicants must fulfill the following requirement:

- Be nominated by their respective government;
- Education: All related to Energy, Environment, and Sufficiency Economy Philosophy or has relevant working experience
- Language: proficiency in English (speaking, reading and writing)

7. Attendance and Evaluation

Participants who completed the training will receive a certificate base on:

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

8. Venue:

Songkhla: Faculty of Environmental Management, Hatyai, Songkhla

9. Expected Results:

The participant will be able to be a balancer in the future and join with the faculty of environmental management to produce at least one case of global warming solving in their countries.

10. Organization/ Institution:

▪ Implementing Agency;

Faculty of Environmental Management, Prince of Songkla University

▪ Contact Person

Dr. Kuaanan Techato,

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Email: nuttaya.y@psu.ac.th Website: www.envi.psu.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.mail.go.th

Schedule for the Online Training Programme:
Global Warming Mitigation and Adaptation by Sustainable Energy Management and Sufficiency Economy
Philosophy 2023
June 7th – June 27th 2023

Date/ Period /Topic	Time (Thailand time)	Content	Speaker	Note
Day 1 : Wednesday 7 June 2023				
	09.00 – 09.10 a.m.	VDO presentation: @Faculty of Environmental Management, Prince of Songkla University		
	09.10 – 09.20 a.m.	Welcome, Introduction	Assoc. Prof. Dr. Kuaanan Techato, PSU	
	09.20 – 09.30 a.m.	Opening of the Training	by representative from TICA	
<i>Relative sea-level rise in South of Thailand using GNSS, satellite altimetry and tide gauges</i>	09.30 – 12.30 a.m.	<i>Relative sea-level rise in South of Thailand using GNSS, satellite altimetry and tide gauges</i> (1) VDO presentation: Location : Tectonic plate movement measuring station Address: Phuket Province	Mr.Wim J.F.Simons, PSU	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	Assoc. Prof. Dr. Kuaanan Techato, PSU	
Day 2 : Thursday 8 June 2023				
<i>The international experience of global warming mitigating and adaptation.</i>	09.00 – 12.00 a.m.	<i>The international experience of global warming mitigating and adaptation.</i> (2) VDO presentation: Location : Chana Power Plant Address: Pa Ching Subdistrict, Chana District, Songkhla Province	Mr. Md. Shahariar Chowdhury, PSU	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	Assoc. Prof. Dr. Kuaanan Techato, PSU	

Date/ Period /Topic	Time (Thailand time)	Content	Speaker	Note
Day 3 : Friday 9 June 2023				
Sustainable energy management	09.00 – 12.00 a.m.	Sustainable energy management (3) VDO presentation: Location : Thung Yai Saraphee Address: Songkhla Rajabhat University, Satun Campus Satun Province	<i>Dr.Issara Chanakaewsomboon, PSU</i>	
Country Report	13.00 – 16.00 p.m.	Country Report	<i>Assoc. Prof. Dr. Kuaanan Techato, PSU</i>	
Saturday 10 June 2023: Official Holiday				
Sunday 11 June 2023: Official Holiday				
Day 4 : Monday 12 June 2023				
Solar and application in Thailand	09.00 – 12.00 a.m.	Solar and application in Thailand (4) VDO presentation: Location: Faculty of Environmental Management Address: Prince of Songkla University, Kho Hong Sub-district, HatYai District Songkhla Province	<i>Mr. Suradej Santisakolwut</i>	
Country Report	13.00 – 16.00 p.m.	Country Report	<i>Assoc. Prof. Dr. Kuaanan Techato</i>	
Day 5 : Tuesday 13 June 2023				
Wind turbine and low-speed vertical axis wind turbine	09.00 – 12.00 a.m.	Wind turbine and low-speed vertical axis wind turbine (5) VDO presentation: Location : Energy Absolute Company Limited Provincial Electricity Authority (PEA) / Electricity Generating Authority (EGAT) (Wind len) Address: Hua Sai Sub-district, Hua Sai District, Nakhon Si Thammarat Province /Ranot Sub-district, Ranot District, Songkhla Province	<i>Asst.Prof. Dr. Montri Luengchavanon</i>	
Country Report	13.00 – 16.00 p.m.	Country Report	<i>Assoc. Prof. Dr. Kuaanan Techato</i>	

Date/ Period /Topic	Time (Thailand time)	Content	Speaker	Note
Day 6 : Wednesday 14 June 2023				
<i>Lithium battery and Supercapacitor</i>	09.00 – 12.00 a.m.	<i>Lithium battery and Super capacitor (6) VDO presentation:</i> Location : Sirindhorn Building, Faculty of Engineering and Faculty of Environmental Management Address: Price of Songkla University, Kho Hong Sub-district, HatYai District Songkhla Province	<i>Asst.Prof. Dr. Montri Luengchavanon</i>	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	<i>Assoc. Prof. Dr. Kuaanan Techato</i>	
Day 7 : Thursday 15 June 2023				
<i>Biodiesel, biomass power plant, and biomass gasification</i>	09.00 – 12.00 a.m.	<i>Biodiesel, biomass power plant, and biomass gasification (7) VDO presentation:</i> Location : New Biodiesel Co., LTD. Address: Sawiat, Tha Chang District, Surat Thani	<i>Dr.Issara Chanakaewsomboon</i>	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	<i>Assoc. Prof. Dr. Kuaanan Techato</i>	
Day 8 : Friday 16 June 2023				
<i>Gasification</i>	09.00 – 12.00 a.m.	<i>Gasification (8) VDO presentation:</i> Location : Production plant of fuel from plastic waste Address : Kanchanaburi Province	<i>Dr.Issara Chanakaewsomboon,</i>	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	
<i>Saturday 17 June 2023: Official Holiday</i>				
<i>Sunday 18 June 2023: Official Holiday</i>				

Date/ Period /Topic	Time (Thailand time)	Content	Speaker	Note
Day 9 : Monday 19 June 2023				
Fuel Cell	09.00 – 12.00 a.m.	Fuel Cell (9) VDO presentation: Location : Sirindhorn Building, Faculty of Engineering and Faculty of Environmental Management Address : Price of Songkla University, Kho Hong Sub-district, HatYai District Songkhla Province	<i>Asst.Prof. Dr. Montri Luengchavanon,</i>	
Country Report	13.00 – 16.00 p.m.	Country Report	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	
Day 10 : Tuesday 20 June 2023				
Nano Technology	09.00 – 12.00 a.m.	Nano Technology (10) VDO presentation: Location : Faculty of Environmental Management Address : Price of Songkla University, Kho Hong Sub-district, HatYai District Songkhla Province	<i>Asst.Prof. Dr. Montri Luengchavanon,</i>	
Country Report	13.00 – 16.00 p.m.	Country Report	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	
Day 11 : Wednesday 21 June 2023				
Geothermal	09.00 – 12.00 a.m.	Geothermal (11) VDO presentation: Location : Betong Hot Spring Address : Betong District, Yala	<i>Asst.Prof.Dr. Helmut Josep Durrast,</i>	
Country Report	13.00 – 16.00 p.m.	Country Report	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	

Date/ Period /Topic	Time (Thailand time)	Content	Speaker	Note
Day 12 : Thursday 22 June 2023				
<i>Sufficient Economy Philosophy (SEP) and Sustainable Development Goal (SDG)</i>	09.00 – 12.00 a.m.	<i>Sufficient Economy Philosophy (SEP) and Sustainable Development Goal (SDG)</i> <i>(12) VDO presentation:</i> Location : Kriengsak Farm, Chiang Mai Province Address : Chiang Mai Province	<i>Prof Dr. Kriangsak Mengamphan</i>	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	
Day 13 : Friday 23 June 2023				
<i>Sufficient Economy Philosophy (SEP) for community-based mitigating and adaptation to global warming (Part 1)</i>	09.00 – 12.00 a.m.	<i>Sufficient Economy Philosophy (SEP) for community-based mitigating and adaptation to global warming (Part 1)</i> <i>(13) VDO presentation:</i> Location : Ban Nam Rap Community Address : Trang Prov	<i>Dr. Nuttuya Yuangyai</i>	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	
<i>Saturday 24 June 2023: Official Holiday</i>				
<i>Sunday 25 June 2023: Official Holiday</i>				
Day 14 : Monday 26 June 2023				
<i>Sufficient Economy Philosophy (SEP) for community-based mitigating and adaptation to global warming (Part 2)</i>	09.00 – 12.00 a.m.	<i>Sufficient Economy Philosophy (SEP) for community-based mitigating and adaptation to global warming (Part 2)</i> <i>(14) VDO presentation:</i> Location : Ban Laem Community Address : Trang Province	<i>Dr. Nuttuya Yuangyai</i>	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	

Date/ Period /Topic	Time (Thailand time)	Content	Speaker	Note
Day 15 : Tuesday 27 June 2023				
<i>Sufficient Economy Philosophy (SEP) for community-based mitigating and adaptation to global warming (Part 3)</i>	09.00 – 12.00 a.m.	<i>Sufficient Economy Philosophy (SEP) for community-based mitigating and adaptation to global warming (Part 3)</i> <i>(15) VDO presentation:</i> Location : Pattani Province and Narathiwat Province	<i>Dr. Nuttuya Yuangyai</i>	
<i>Country Report</i>	13.00 – 16.00 p.m.	<i>Country Report</i>	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	
	16.00 – 17.00 p.m	<i>Conclusion & Closing Ceremony</i>	<i>Assoc. Prof. Dr. Kuaanan Techato,</i>	