

JGSEE

The Joint Graduate School of Energy and Environment



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Consortium involving five leading institutions

CENTER OF EXCELLENCE ON ENERGY TECHNOLOGY AND ENVIRONMENT



JGSEE Newsletter

Vol. 30 January - April 2018



The year 2018 is another important milestone for JGSEE as it concurs with the 20th anniversary of its establishment. As a Center of Excellence on Energy Technology and Environment (CEE), these past two decades define the sustained commitment and effort JGSEE-CEE has put in to deliver high quality graduate education and training, conduct high quality research, and provide technical services. JGSEE-CEE will continue to adhere to these three main missions to become an internationally recognised premier centre of knowledge and innovation in energy, environment and sustainability.

Since 7 December 2017, JGSEE-CEE is pleased to welcome its new director, Assoc Prof Dr Suneerat Fukuda. As part of the management team, Prof Navadol Laosiripojana and Assoc Prof Dr Savitri Garivait have been appointed as chairs of the Energy Division and Environment Division, respectively. With this new management team, organisational performance excellence is the aim. In line with its core competencies, JGSEE's education and research directions are better positioned to contribute to the 20-year National Strategic Plan (2017–2036) as a key means of moving the country toward "Thailand 4.0", a vision that focuses on transforming the country into a value-based and an innovation-driven economy while assuring sustainable/green growth. JGSEE's strategic research themes also closely adhere to the targeted S-curve industries with strong emphasis on industrial partnership. A number of collaborative research activities with the private sector have already been established. This includes collaboration with PTT on biofuels, bio-chemicals and bio-based materials, SCG on industrial solid fuel combustion and waste management, Toyota foundation on emission scenario modeling and among others via several TRF/industry co-funded projects. With government agencies, JGSEE works for instance with PCD on air pollution monitoring and with EPPO on energy efficiency improvement.

Internationalisation is also one of the strategies focused on to enhance the visibility of JGSEE and strengthen relationship with foreign partners. JGSEE has successfully developed a double degree program with Kyoto University and signed a MOU with Can Tho University, Vietnam to extend collaboration in both capacity building and research. Several visits and meetings took place to explore collaboration opportunities. This includes for instance meetings with delegates from the University of Stuttgart to discuss collaborative research on sustainable electrified city and a visit of Mitsubishi Heavy Industry (MHI) in Kyushu, Japan. Several international workshops and trainings have also been organised and contributed to by JGSEE. This includes the organisation of a Municipal Waste Management Workshop supported by IEEJ and contribution to a Training on Eco-labeling to Industry and Policy Makers from Sri Lanka. Lunch talks by JGSEE staff and students as well as invited guest speakers are also held on a weekly basis for knowledge dissemination and networking.

This year and over the next decade, JGSEE-CEE will continue to fulfill the needs of the country in the field of energy and environment and support the country through its transition phase to Thailand 4.0.

Suneerat Fukuda
Director

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MINISTRY OF ENERGY

Contribution to International Forum

Special Issue in the Journal Sustainability

Prof Shabbir H. Gheewala along with LCA expert colleagues from Japan, Germany and Switzerland has been a guest editor on the recently published Special Issue on “Responsible Value Chains for Sustainability: Practices and Challenges from EcoBalance” in the journal, Sustainability (published by mdpi with an impact factor of 1.789). This Special Issue is linked to Ecobalance, a biannual conference organised in Japan.



Contribution to Knowledge Platform

Municipal Waste Management Workshop



The Department of Local Administration (DLA), Ministry of Interior, Thailand and the Pollution Control Department (PCD, Thailand) in collaboration with the Ministry of the Environment, Japan (MOEJ) and JICA-Thailand successfully organised a workshop on “Municipal Waste Management”. The event was held at Pathumwan Princess Hotel on 5 February 2018.

Opening remarks were delivered by Mr Yoshinori Suga from the Embassy of Japan and Mr Anukoon Suthaphan from PCD. The morning session then started with a couple of talks by Ms Anuda Tawatsin (PCD) and Mr Kobchat Vichieansri (DLA) to introduce the JICA Project on “Capacity Development in Effective Waste Management Implementation”. Following these presentations, Mr Yoshihiro Ono from the Japan Environmental Facilities Manufacturers gave a talk on “Waste

Management and Technology: How to choose more Suitable Technologies”. Dr Vicharana Intrakamhaeng from PCD delivered another talk on “Measures and Challenges for Environmentally-Friendly Incineration in Thailand”. Following these presentations, Mr Tadashi Inagaki from the Japan Waste Management Association gave a presentation on “Regulations, Standards, and Certifications for Waste Management Facilities: Emission, Structure and Operation”. The morning session ended with a group discussion focusing on challenges for selecting suitable technologies and securing stable and environmentally-friendly operations, including the components to be incorporated in specific standards or guidelines.

The afternoon session of the event started with a presentation by Mr Takahito Kusaba from the Ministry of the Environment, Japan on “Showcases of Waste Management Projects in Asia”. This was followed by a talk by Mr Panuwatt Ontes from the Environment Department of the Bangkok Metropolitan Administration (BMA) on “Waste Management from Planning to Operation: Bangkok’s Case”. The event ended with a group discussion aiming at addressing challenges in planning, bidding, and operation, including examples of successful and unsuccessful cases. Dr Komsilp Wangyao, a JGSEE researcher and expert on waste treatment and disposal, was one of the facilitators of the discussion. The workshop was a great success gathering over 100 representatives from governmental, academic and private organisations both from Thailand and Japan.



Waste-to-Energy Workshop for Thailand 2018



JGSEE-CEE in collaboration with the Department of Alternative Energy Development and Efficiency (DEDE), Ministry of Energy, Thailand, the Department of Industrial Work (DIW), Ministry of Industry, Thailand and the Department of Local Administration, Ministry of Interior, Thailand, in partnership with the Ministry of Economy, Trade and Industry (METI), Japan, and the Institute of Energy Economic Japan (IEEJ), successfully organised the Waste-to-Energy Workshop for Thailand 2018 at Pathumwan Princess Hotel on 6 February 2018.

Prior to the start of the event, some welcome remarks were delivered by Mr Narapandra Yamalee, Director of the Work Plan Division of DEDE. Opening remarks were delivered by Mr Takao Ikeda, Senior Economist of the International Cooperation Unit of IEEJ. As the workshop began, a couple of policy related talks were delivered by Thai representatives from DEDE and DIW. The first talk by Ms Suthasinee Klaokitikul (DEDE) focused on “Renewable Energy Policy featuring Waste to Energy - Current Target of Waste-to-Energy in Thailand” while the second talk by Ms Nuchanat Suphansri (DIW) provided updates on “Policy on Industrial Waste in Thailand” and informed about the situation of MSW management by local governments in the country. On the Japanese side, Dr Kenji Kimura (IEEJ) talked about “Renewable Energy Policy featuring Waste to Energy - Current Target of Waste-to-Energy in Japan” while Mr Yoshikazu Honobe from the Japan Environmental Facilities Manufacturers Association (JEFMA) delivered a talk on “Key Considerations for Successful Waste-to-Energy Business”. Last Mr Isamu Sato from JASE-World shared some information about the outline of the Waste-to-Energy Handbook in ASEAN countries.

Following these policy talks, representatives from local governments in Thailand shared their views and experiences on policies and issues related to MSW management at the municipal level. These representatives included Mr Tavorn Jirapattanasophon from Phuket City Municipality, Mr Trinnawat Suwanprik from Chiang Mai Municipality, Mr Chitsanuphong Suwan from Nakhon Si Thammarat Municipality, Mr Yanyong Treewacharanon from Udonthani Municipality and Ms Pijitra Ngerphat from Mueang Chachoengsao Municipality.

A panel discussion was held at the end of the event involving contribution from both Japanese and Thai governmental representatives to discuss and share views on the next challenges and opportunities related to waste-to-energy in Thailand and related lessons learned from Japan. The workshop was a great success gathering over 90 representatives from governmental, academic and private organisations in Thailand and Japan.

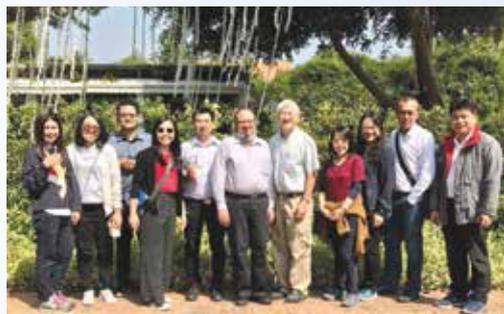


Training on Ecolabeling to Industry and Policy Makers from Sri Lanka



The Asian Institute of Technology invited Prof Shabbir H. Gheewala to provide a training on “LCA and Ecolabeling” at the Professional Development Course on “Sustainable Consumption and Production” that was held at AIT in February 2018. The 1-day training was delivered to participants from the industry and government in Sri Lanka.

Research Chair Grant Meeting in Chiang Rai



Last year, Prof Shabbir H. Gheewala and his LCSAL team received the 2016 NSTDA Research Chair Grant for the project entitled "Network for Research and Innovation for Trade and Production of Sustainable Food and Bioenergy (2017-2022)". Aside from JGSEE, the project team involves colleagues from Kasetsart University, Mahidol University, Prince of Songkla University, Mahasarakham University and Phayao University. This research grant aims at 1) Strengthening teamwork between students, researchers and senior researchers; 2) Collaboration between academic sector and productive service or society; and 3) Research study with high impact on economy and society.

Over the next 5 years of the implementation of this project, a series of meeting and seminars are going to be held. In this regard, a “FFCC and Research Chair Grant Project Meeting and Seminar” was held in Chiang Rai during 14 - 17 February at the University of Phayao to follow up with the progress of the network activities.

Technical Support from Lampung University to JGSEE Student for Field Survey with Industries in Indonesia



On 5 March 2018, Ms Ade Andini, a PhD student from JGSEE, visited Lampung Province in Indonesia for a month to conduct a field survey as part of her research thesis titled “A Torrefaction Study of Indonesian Agricultural Waste Blend at Laboratory and Pilot Scale”. This work is co-supervised by Dr Patrick Rousset, an adjunct senior researcher at JGSEE from CIRAD, and Dr Sebastien Bonnet of LCSAL (JGSEE). This one month survey financially supported by JGSEE and CIRAD was facilitated by Prof Udin Hasanuddin, Head of the Center of Research and Development of Tropical Biomass, Lampung University. The field survey aimed at assessing market demand and investigating market opinions on torrefied biomass.

During this one month work, Ms Andini visited several types of industries, including, producers of palm oil, sugarcane, tofu, coconut sugar, corn, cassava, bricks and several others. All those industries were surveyed as they were identified as being potentially interested in converting and/or using torrefied biomass as their fuels in the future. Towards the end of this one month investigation, Dr Rousset, with funding from TICA, joined Ms Andini for a week in order to meet the various stakeholders surveyed and provide expert advice on their processes. He also visited the Lampung University to interact with Prof Hasanuddin and colleagues, and deliver a presentation on torrefaction process and technologies to a gathering of lecturers, students and industrial representatives invited for the occasion.



Contribution to Research Platform

Visit of Mitsubishi Heavy Industry in Nagasaki and Meeting at Kyoto University



During 20-23 February 2018, a JGSEE delegation went to Japan to visit the Mitsubishi Heavy Industry (MHI) Research and Innovation Center and to attend a Thailand-Japan joint research project annual meeting. The JGSEE delegation was composed of Assoc Prof Dr Suneerat Fukuda, JGSEE director, Assoc Prof Dr Nakorn Worasuwannarak, member of AFPL, Dr Boonrod Sajjakulnukit member of EEP and JGSEE researchers from AFPL, including, Dr Supachita Krerkkaiwan and Dr Janewit Wannapeera. During the visit of the MHI Research and Innovation Center in Nagasaki, the team was given a tour of a pilot-scale coal combustion facility (4 ton/h capacity), an integrated gasification combined cycle (IGCC) facility using entrained flow air-blown gasifier and a BTL process facility converting biomass to biofuel.

At Kyoto University, the JGSEE team joined an annual meeting of the Thailand-Japan Joint research project titled "Development of Clean and Efficient Utilisation of Low Rank Coals and Biomass by Solvent Treatment". The project started in 2014 and activities are still ongoing. During the meeting, each contributing partner from Japan and Thailand delivered a progress report of the project activities and discussed the next steps to continue this research collaboration.

EleCity Hubs Meeting with German Delegates at JGSEE



On 6 March 2018, German delegates from the University of Stuttgart and the Institute for Energy and Environmental Research (IER) visited JGSEE-CEE. Assoc Prof Dr Suneerat Fukuda, JGSEE director, Prof Surapong Chirattananon, head of BEST, Prof Shabbir H. Gheewala, head of LCSAL and Dr Robert Himmler, a visiting professor at JGSEE joined an Elecity Hubs project meeting. It was also attended by Mr Micheal Paripol Tangtrongchit and Asst Prof Dr Apinya Limpaiaboon from the School of Architecture and Design (SoA+D) of KMUTT.

The meeting aimed at discussing collaboration opportunities under the project "Electrified Cities as Hubs for a Sustainable Transformation of metropolitan Regions in Southeast Asia (EleCity Hubs)". The Elecity Hubs project is a combined effort of German and Southeast Asian partners to investigate the above project topic and develop case studies and pilot applications. Following this first meeting, a wrap up session was held on 8 March 2018 at JGSEE to further discuss and detail potential future activities between JGSEE and IER.



MOU Signing Ceremony with Can Tho University in Vietnam



On 8 March 2018, Assoc Prof Dr Mai Van Nam, Dean of Graduate School, Can Tho University (CTU), Vietnam and Assoc Prof Dr Suneerat Fukuda, Director of JGSEE-CEE signed a Memorandum of Understanding (MOU) for research collaboration between CTU and JGSEE. This MOU aims at establishing a framework for research collaboration in the field of energy and environment. A particular focus of this research collaboration is on forest carbon mapping and climate change.

Kick-off Meeting of EU-SEA-NET Funded RESCuE Project in Vietnam



A kick-off meeting of the project titled "Monitoring and Optimising the Design Quality of Mangrove Restoration Towards a Sustainable Coastal Ecosystem Management in Thailand and Mekong Delta of Vietnam" (also referred to as the RESCuE project) was held on 8 March 2018 at Can Tho University (CTU) in Vietnam. This 3 year-project is funded by EU-SEA-NET and brings together 6 main partner institutes from the public and private sector located in 3 different European countries (France, Germany, Italy), 2 South East Asian countries (Thailand and Vietnam) and 1 East Asian country (Japan).

The project is led by Prof Valery Gond from CIRAD (France). Project investigators include Mr Uday Pimple from JGSEE (Thailand), Prof Uta Berger from Dresden University of Technology (Germany) and Prof Vo Quang Minh from CTU (Vietnam). The project research activities aim at contributing to global efforts on conservation and sustainable management of natural resources, and to the mitigation and rehabilitation of coastal zones. This is to be performed in line with the UN 2030 Agenda for Sustainable Development which defines specific targets and a set of goals to end poverty, protect the planet, and ensure prosperity for all over the next 15 years.

Contribution to MICS-Asia Workshop in Japan



During 13-14 March 2018, Assoc Prof Dr Savitri Garivait and Dr Pham Thi Bich Thao of ABBA-EIP (AGAR) participated to the 9th International Workshop on "Atmospheric Modelling Research in East Asia" (MICS-Asia workshop) in Fukuoka, Japan. As part of the workshop, discussions were held regarding current and future research works on air pollution and atmospheric deposition in East Asia. Research activities related to MISC-Asia and support for the MISC-Asia community were also addressed. At the occasion of this event, under the Southeast Asia group, Assoc Prof Dr Savitri Garivait gave an update of Thailand's atmospheric emission inventory for the year 2015. Dr Pham Thi Bich Thao as part of a session dedicated to ozone delivered a presentation focusing on ozone pollution in Thailand based on modeling results. Throughout the workshop, draft papers of model comparison studies were presented and plans for future research works and collaborative activities were discussed.

Following the MISC-Asia workshop, during 15-16 March 2018, Assoc Prof Dr Savitri Garivait and Dr Pham Thi Bich Thao along with Dr Agapol Junpen and Ms Orachorn Kamnoet (researcher of ABBA-EIP) visited the Center for Regional Environmental Research of the National Institute for Environmental Studies (NIES). The purpose of the visit was to discuss and review the activities performed under a collaborative research project on "Development of Thailand's Air Pollutants and Greenhouse Gases (GHGs) Emission Inventory and Projection for use in Air Quality Models" (TCAP project). Further updates about the project activities will be posted soon.

Award

Congratulations to Dr Supachita Krerkkaiwan for Receiving NRCT Award



JGSEE-CEE is pleased to congratulate Dr Supachita Krerkkaiwan for being selected to receive the 2017 PhD Dissertation award (Engineering and Industrial Research) from the National Research Council of Thailand (NRCT). Dr Supachita's thesis was on "Syngas Production from Co-gasification of Coal and Biomass". The study was performed under the supervision of Assoc Prof Dr Prapan Kuchonthara at Chulalongkorn University. The 2017 NRCT award ceremony was held on 2 February 2018 at the Bangkok International Trade & Exhibition Centre (BITEC).

Upcoming events

International Conference
The Future of ASEAN'S Energy Journey
E-mobility – Smart Grid – Smart City
Former Renewable Energy Asia 2018



6-9 JUNE 2018
 BITEC, BANGKOK, THAILAND
 (10.00 – 18.00 hrs.)

<http://www.renewableenergy-asia.com/Conference/InternationalConference.aspx>



7th INTERNATIONAL CONFERENCE ON SUSTAINABLE ENERGY AND ENVIRONMENT



**"Technology & Innovation for Global
Energy Revolution"**

**28-30 November 2018
Chatrium Hotel Riverside Bangkok, Thailand**

Conference Topics:

- Bioenergy and biofuels
- Renewable energy and smart energy systems
- Other energy conversion technologies
- Energy efficiency
- Energy and environmental policy
- Environmental and climate science, and mitigation technology

Important Dates:

Abstract submission deadline: 30 May 2018
Abstract acceptance notification: 1 July 2018
Full paper submission deadline: 15 September 2018
Early registration deadline: 15 October 2018

*Organized by the Joint Graduate School of Energy and Environment,
King Mongkut's University of Technology Thonburi and its consortium partners,
in collaboration with Kyoto University*



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