



UNITED NATIONS OFFICE FOR SUSTAINABLE DEVELOPMENT  
INCHEON, REPUBLIC OF KOREA

## Expert Group Meeting on Sustainable Application of Waste-to-Energy in Asian Region

22-23 February 2017, Busan, Republic of Korea

Organized by

United Nations Office for Sustainable Development (UNOSD) in collaboration with Korea Association of Energy, Climate Change and Environment (KAECE) and Korean Ministry of Environment

### Day 1 : 22 February 2018 (Thursday)

#### Opening session (09:00-10:30)

*This session is designed to provide opening remarks, the objectives of the seminar and guide for agenda and discussion among participants.*

#### **Facilitator : Okhyun Yang, UNOSD**

- Eunhae Jeong, Senior Development Management Expert, UNOSD
- Jong-In Dong, President of KAECE, Republic of Korea
- Young-Mok Kim, Former President of Korean International Cooperation Agency
- Geun Hee Lee, Director General, Climate and Environment Bureau, Busan Metropolitan City
- Objectives of the seminar – Eunhae Jeong, UNOSD
- Roundtable introduction – participants

#### **Session 1 : Settling the Scene : Sustainable Waste Management in the Context of the SDGs and the Paris Agreement (11:00-12:30)**

*This session is designed to provide the overview of the waste and biomass management and its impact on the achievement of the Sustainable Development Goals. It will also provide a brief overview on how proper and safe energy conversion from municipal solid waste and waste biomass can contribute to mitigation of greenhouse gas emission.*

#### **Facilitator : Dr. Jurgen Vehlow, Karlsruhe Institute of Technology**

- Keynote Speech  
Overview on waste and biowaste generation and their management status in Southeast Asian countries – Dr. Somrat Kerdsuwan, King Mongkut's University of Technology North Bangkok, Thailand
- Climate change challenges by Paris Agreement and its implication in renewable energy application from waste and biowaste – Dr. Young-Soo Choi, Korea University, Korea

- Waste-biomass based biogas production and energy utilization to cope with climate change issue in Malaysia, Dr. Nasehir Khan Yahaya, Ministry of Natural Resources and Environment, Malaysia
- Discussion - participants

**Session 2 : Eco-Friendly Approaches towards Waste and Biomass-to-energy Conversion (13:00-14:30)**

*This session is designed to share current scientific and technological knowledge on waste management and its eco-friendly energy application. This session will provide updated status of technology development and its applications especially on the measures to minimize the environmental impact based on actual field cases.*

**Facilitator : Prof. Dae-Won Park, Seoul National University of Technology**

- Renewable energy application from waste and biomass: European case study – Dr. Jurgen Vehlow, Karlsruhe Institute of Technology, Germany
- Waste-to-energy recovery perspectives and energy conversion efficiency analysis in Korea - Dr. Jong-In Dong, University of Seoul, Korea
- New and renewable energy application and its future in Thailand - Ms. Rungrawee Yingyuad, Ministry of Energy, Thailand
- Biomass co-combustion and carbon dioxide reduction in power plants – Dr. Won Yang, Korea Institute of Industrial Technology, Korea
- Discussion – participants

**Session 3 : Country Presentations (14:30-18:00)**

*This session is designed to have presentations and discussion on the current status and challenges of applying integrated approaches to achieve eco-friendly waste and biomass-to-energy conversion in the country level. Participants will share specific examples of their cases.*

**Facilitator : Prof. Jin-Do Chung, Hoseo University**

*Experts from each country will present the status of waste management and future policy directions for renewable energy from waste and biomass.*

- Thailand: Dr. Somrat Kerdsuwan, King Mongkut’s University of Technology North Bangkok
- Vietnam: Dr. Nguyen Sy Linh, Ministry of Natural Resources and Environment (Institute of Strategy and Policy on Natural Resources and Environment)
- Myanmar: Dr. Hla Toe, Ministry of Education (Pray University)
- Malaysia: Prof. Mohd Ali Hassan, Universiti Putra Malaysia
- Indonesia: Dr. Fadjar Goembira, Andalas University
- Philippines: Dr. Ofero Caparino, Philippine Center for Postharvest Development and Mechanization
- Pakistan: Mr. Wasim Udin Ghauri, Asian Institute for Environmental Research and

## Energy

- Korea: Dr. Young-Sam Yoon, National Institute of Environmental Research
- China: Prof. Yong Chi, Zhejiang University
- Japan: Prof. Katsuya Kawamoto, Okayama University
  
- Discussion – participants

### **Day 2 : 23 February 2018 (Friday)**

#### **Session 4 : Technology Development and International Cooperation (09:00-11:30)**

*This session is designed to discuss future directions on technology development and to facilitate international cooperation in dealing with eco-friendly renewable energy securement from waste and biomass resources to cope with climate change challenges and to facilitate the implementation of the sustainable development goals.*

*The session will be facilitated through group and plenary discussion to explore practical options for future international cooperation.*

**Facilitators : Prof. Mohd Ali Hassan, Universiti Putra Malaysia**

- Energy valorization and human health effect for biomass-to-energy application like cachaba and biogases waste – Dr. Luc Hens, Frije Universiteit Brussels, Belgium
- Green technology field application for coping with climate change issues - Changsun Jang, Green Technology Center Korea, Korea
- Fluidized Bed Combustor combustion technology application for waste-to-energy conversion – Dr. Yong Chi, Zhejiang University, China
- Bio-methane production and energy conversion by anerobic digestion of organic wastes: case studies - Mr. Ki Hyung Lee, Korea Environment Corp., Korea
- Utilization of biogas to valuable chemicals, Prof. Yun Hin Taufiq-Yap, Universiti Putra Malaysia, Malaysia.
- Waste-to-fuel conversion with advanced separation/treatment technology, Mr. Hyun-Soo Kim, ACI, Korea
  
- Discussion – participants

**Session 5 : Conclusion (13:30-14:00)**

*This session focuses on conclusion covering the knowledge gaps to be addressed in short and long terms in Southeast and East Asian region, mechanisms to enhance partnership for capacity development, technology cooperation, and recommendations on the way forward.*

*Participants will provide recommendations on how to apply integrated approaches in achieving Sustainable Development Goals related to waste management and eco-friendly energy conversion approach. The session will be facilitated through plenary discussion to define the key points discussed during the two-day meeting.*

**Facilitators : Dr. Seong Seok Seo, TS Environmental Technolgy Institute, Korea**

- EGM Forum summary - Jong-In Dong, President, KAECE
- EGM Forum closing remark - Eunhae Jeong, UNOSD
- Wrap up and closing

**Session 6 : Technical Visit (14:30-17:00)**

*This session will provide a chance to visit waste-to-energy facilities in Metropolitan Busan area. The plant encompasses high-efficiency energy conversion process, optimised air pollution control system, which is connected with municipal sewage treatment plant.*

**Facilitators : Okhyun Yang, UNOSD**

- Visiting Facility: Haewunhae Resource Recovery Facility, Haewundae District, Busa