Special Session in the 3RINCs 2023

Challenges of waste decarbonization towards zero emission in developing countries

13:00 – 14:30 (JST), 16 March 2023

Session A (Room III), Kyoto University, Japan

Organized by

The Collaborative Research Laboratory (National Institute of Environmental Study- JAPAN, Kasetsart University, and King Mongkut's University of Technology Thonburi-Thailand), Ochanomizu University, Institute for Global Environmental Strategies (IGES)

Introduction

In developing countries, incineration and RDF production are beginning to operate with the aim of reducing the amount of municipal solid waste landfilled. By incinerating municipal solid waste or processing it into RDF, it is possible to reduce various environmental loads, including greenhouse gas emissions, compared to disposing of untreated municipal solid waste in landfills. However, it is not easy to construct and operate incineration facilities in developing countries due to various constraints. This session reviews the advantages and disadvantages of waste-to-energy such as energy recovery with incineration, RDF production, and anaerobic digestion operated in Thailand and Vietnam. This session also discusses the future visions of municipal solid waste management in the local municipalities in developing countries.

Objective

This special session aims to serve as a platform to exchange up-to-date knowledge on multiple benefits of the introduction of waste treatment technology before landfilling as well as to explore the possibility and opportunity on the case study and practices from developing countries to overcome challenges in moving holistic waste management from upstream, mainstream and downstream towards carbon neutrality and zero emission in the near future.

Expected outcomes

Applying GHG mitigation options in coupling with sustainability development in waste management in developing countries to serve the target of the Paris Agreement is challenging. It is a question of how to approach these two pillars together with the possibility to meet zero emissions in the future. It is expected in this special session that participants will be fed with their views on the waste management situation in developing countries in a full cycle and their potential and possibility to move towards zero emissions in 2050. In addition, discussion on the barrier, challenges, success factors as well as good practices from developing countries in the panel discussion will serve as a starting point for research collaboration and network expansion as well as promoting regional and global active climate actions in the future.

Session I: Potential, Advantage, and Constraints

Moderator: Dr. Tomonori Ishigaki, NIES Japan

Presentations (15-minute presentation and 5-minute Q&A for each)

1. Dr. Chart Chiemchaisri, Kasetsart University, Thailand
   Potential of Greenhouse Gas Emission Mitigation of Municipal Solid Waste Management in Bangkok Metropolitan
2. Dr. Kosuke Kawai, National Institute for Environmental Studies, Japan
   Lessons learned from residual waste management in Europe and Japan
3. Ms. Trang DT Nguyen, Ochanomizu University, Japan
   Drivers and constraints of waste-to-energy incineration for sustainable municipal solid waste management in Vietnam

Session II: Panel discussion on Success factors for zero emission approach

Moderator: Dr. Sirintornthep Towprayoon, JGSEE-KMUTT Thailand

Panelists

- Dr. Toyohiko Nakakubo
  Professor, Department of Human-Environmental Science, Ochanomizu University, Japan
- Dr. Komsilp Wangyao
  King Mongkut's University of Technology Thonburi, Thailand
- Dr. Yasuhiko Hotta
  Programme Director, Sustainable Consumption and Production Department, Institute for Global Environmental Strategies (IGES), Japan