

# The 30th AIM International Workshop

Ohyama Memorial Hall in National Institute for Environmental Studies and Online  
August 28 and 29, 2024

## DAY 1: August 28, 2024

10:00 of JST      Open Zoom Account and Registration

### 10:30-11:40      Session 1: Opening

Chairperson: Dr. Toshihiko Masui (NIES)

10:30-10:35      Opening remarks

Dr. Masahide Kimoto (NIES)

10:35-10:40      Opening remarks

Mr. Yoshinori Suga (MOEJ)

10:40-11:00      Activities in FY 2023-2024

Dr. Toshihiko Masui (NIES)

11:00-11:20      Keynote speech: Potential Energy and CO<sub>2</sub> Emissions Impacts of Naturally Occurring, Abundant, Geologic Hydrogen

Dr. James Edmonds (PNNL)

11:20-11:40      Keynote speech: Can we move to the pathway for 1.5C globally?

Dr. Kejun Jiang (ERI)

11:40-11:50      Photo session

11:50-13:30      Lunch Break

### 13:30-15:00      Session 2: GHG mitigations in Asia (1)

Chairperson: Dr. Tatsuya Hanaoka (NIES)

13:30-13:45      India Towards Net Zero: Issues and Challenges

Prof. Manmohan Kapshe (MANIT) and

Dr. Satish Yawale (The Energy and Resources Institute)

13:45-14:00      Integrated Assessment Model in China: Progress and Prospect

Prof. Hancheng Dai (Peking Univ.) and Prof. Yang Xie (BUAA)

14:00-14:15      Energy and Economy-wide Implications of Transport Sector Electrification in Nepal

Prof. Ram Manohar Shrestha (AITM), Dr. Salony Rajbhandari (NIES) and

Dr. Bijay B. Pradhan (Thammasat Univ.)

14:15-14:30      Integration of Computable General Equilibrium Model with Power Sector Optimization Models for Net-Zero Scenario Analyses

	Prof. Yong-Gun Kim, Prof. Tae-Yong Jung and Ms. Weiyi Jiang (Yonsei Univ.)
14:30-14:45	Evaluating Taiwan's Optimal Power Supply Mix in 2050 Dr. Yi-Hua Wu (National Applied Research Laboratories)
14:45-15:00	Discussion
15:00-15:30	Break
<b>15:30-17:00</b>	<b>Session 3: GHG mitigations in Asia (2)</b>  Chairperson: Dr. Tung Lam Nguyen (VNPI)
15:30-15:40	Introduction of LoCARNet Ms. Tomoko Ishikawa and Dr. Mikiko Kainuma (IGES)
15:40-15:55	Thailand NDC 3.0 Increasing Ambition of the Next Generation NDCs Prof. Bundit Limmeechokchai, Dr. Pornphimol Winyuchakrit, Dr. Piti Pita, Dr. Pemika Misila (Thammasat Univ.), Dr. Salony Rajbhandari and Dr. Achiraya Chaichaloempreecha (NIES)
15:55-16:10	Allocating FOLU Net Sink Target to Sub-National Prof. Rizaldi Boer (IPB) and Dr. Rositta Annuri (NIES)
16:10-16:25	Indonesia NZE 2060 of Energy Sector: How to Accelerate Decarbonization in Power Sector Prof. Retno Gumilang Dewi (ITB)
16:25-16:40	AIM Modelling Application at National to Local Level Planning and Decision Making Process: The Case of Malaysia Prof. Chin Siong Ho (UTM)
16:40-17:00	Discussion
17:00-17:10	Break
<b>17:10-19:30</b>	<b>Session 4: Poster Session and Reception</b>
19:30	Adjourn

## **DAY2: August 29, 2024**

9:30 of JST      Open Zoom Account and Registration

### **10:00-11:40      Session 5: Climate impact, adaptation, and sustainability**

Chairperson: Dr. Kiyoshi Takahashi (NIES)

10:00-10:15      Subnational Modeling of U.S. Agriculture and Biofuels

Dr. Ronald Sands (USDA)

10:15-10:30      AFOLU Relevant AIM Global Model's Activities

Prof. Tomoko Hasegawa (Ritsumeikan Univ.) and Dr. Kazuaki Tsuchiya (NIES)

10:30-10:45      Developing an Integrated Assessment Model to Explore Optimal Cost-Benefit Paths for Shared Socioeconomic Pathways Scenarios

Dr. Xuanming Su (JAMSTEC)

10:45-11:00      Inspecting Climate Justice for Urban Adaptation Planning in Korea

Dr. Yoonjung Kim, Dr. Huicheul Jung (KEI) and Prof. Dongkun Lee (SNU)

11:00-11:15      Projection of Impacts on Ambulance Transport System and Economic Burden under Extremely High Temperatures Induced by Climate Change

Dr. Kazutaka Oka, Dr. Yasushi Honda and Dr. Yasuaki Hijioka (NIES)

11:15-11:40      Discussion

11:40-13:00      Lunch Break

### **13:00-14:20      Session 6: GHG Mitigation in Japan**

Chairperson: Dr. Toshihiko Masui (NIES)

13:00-13:15      Introduction of This Session and CGE analysis

Dr. Toshihiko Masui (NIES)

13:15-13:30      Japan's GHG Net-Zero Scenario Using AIM/Enduse[1.0]

Mr. Go Hibino (NIES) and Mr. Tomoki Hirayama (MHRT)

13:30-13:45      Power Supply and Demand for Decarbonized Society: Development of AIM/MOGPM (Multi-Regional Optimal Generation Planning Model)

Dr. Shuichi Ashina (NIES)

13:45-14:00      From National Decarbonization Scenario to Regional Decarbonization Scenario

Dr. Yuko Kanamori and Dr. Kei Gomi (NIES)

14:00-14:20      Discussion

14:20-14:40      Coffee Break

### **14:40-15:40      Session 7: Global analyses of GHG Mitigation**

Chairperson: Dr. Tatsuya Hanaoka (NIES)

14:40-14:55      Global Modelling for Simultaneous Achievement of "Deep Decarbonization," "Air Quality

	Improvement,” and “Nitrogen Waste Reduction” Dr. Tatsuya Hanaoka and Dr. Silva Herran Diego (NIES)
14:55-15:10	Updates on AIM Global Modeling and Relevant International Activities Prof. Shinichiro Fujimori, Prof. Ken Oshiro (Kyoto Univ.) and Dr. Osamu Nishiura (NIES)
15:10-15:25	IAMC’s SWG on National Scenarios Current Status Prof. Saritha Sudharma Vishwanathan (Kyoto Univ.)
15:25-15:40	Discussion
15:40-16:00	Break
<b>16:00-17:30</b>	<b>Session 8: Toward the Next 30 Years</b>  Chairperson: Dr. Silva Herran Diego (NIES)
16:00-16:20	Necessary Next Steps
16:20-17:30	Discussion on Research Proposal toward the Next 30 Years
<b>17:30-18:00</b>	<b>Session 9: Closing</b>  Chairpersons: Dr. Silva Herran Diego (NIES)
17:30-17:40	Poster Award Ceremony Dr. Junya Takakura (NIES)
17:40-18:00	Closing Remarks Dr. Mikiko Kainuma (IGES and NIES)
<b>18:00-19:30</b>	<b>Dinner</b>
19:30	Adjourn

## Poster session

- (1) Analysis of Regional Reallocation of Zero-carbon Ammonia Production in China with Carbon Neutrality Targets  
Dr. Pianpian Xiang (Institutes of Science and Development, CAS)
- (2) Economic and Environmental Implications of India's Industry Transition to Net Zero  
Dr. Dipti Gupta (IIM Lucknow)
- (3) Macroeconomic Impacts of Policies on Decarbonized Power Sector in Thailand  
Dr. Salony Rajbhandari (NIES)
- (4) Decarbonation through the Land Use Change in a Depopulated Society in the Future  
Dr. Satoko Kawarasaki (NIES)
- (5) Implications of Transport Demand and Modal Shift Effects on GHG Emissions in Thailand  
Dr. Achiraya Chaichaloempreecha (NIES)
- (6) Predicting Flood and Landslide Hazards in Indonesia: A Machine Learning Approach for Risk Assessment and Urban Planning  
Ms. Sujung Heo (SNU)
- (7) How Ammonia (NH<sub>3</sub>) Can Play a Role in Climate Change, Air Quality, and N Deposition by Being a Carbon-free Fuel?  
Dr. Thanapat Jansakoo (Kyoto Univ.)
- (8) Can the Construction of Ecological Civilization Promote the Transformation of the Green Lifestyles of Residents?  
Dr. Wang Chen (Institute of Energy Research, Jiangxi Academy of Sciences)
- (9) Assessment of Spatial and Seasonal Variation of Water Quality in the Plain River Network Area of Taihu Lake, East China  
Dr. Yanyan Fan (Institute of Energy Research, Jiangxi Academy of Sciences)
- (10) The Multidimensional Global Poverty and Income Inequality Landscape in a Decarbonizing World  
Ms. Shiya Zhao (Kyoto Univ.)
- (11) Forest Cover Loss in Republic of Korea over 1990-2020  
Dr. Yong Piao (SNU)
- (12) Assessing Climate Impacts through Integration of a Global Computable General Equilibrium Model with Regional and Sector Specific Damage Functions  
Dr. Eun Young Kim (Yonsei Univ.)
- (13) Optimizing Urban Green Space Planning for Enhancing Carbon Storage and Urban Ecosystem Connectivity  
Ms. Hyemee Hwang (SNU)
- (14) The Impact of Household Members' Time-Use Patterns on Residential Carbon Emissions in China's Residential Electricity Sector  
Ms. Qi Zeng (Tokyo Institute of Technology)
- (15) Strategic Afforestation: Identifying Exclusion Zones for Global Biodiversity Conservation  
Dr. Pavithra Rangani Wijenayake (NIES)
- (16) Model for Estimating the Global Energy Potential of Solar and Wind Energies with Hourly Data  
Dr. Diego Silva Herran (NIES)
- (17) GHG Emission Reduction Potential in the Industrial Sectors: Comparison of IAM and Sector Model

Dr. Osamu Nishiura (NIES)

(18) Optimal Pathways for Green Infrastructure toward Climate Resilience

Mr. Saeyeon Jang (SNU)

(19) Estimation of Photovoltaic Power Generation Potential over 2020-2060: an Empirical Study from China

Prof. Lu Gao (Univ. of South China)

(20) Limited Impact of Surface Ozone Reduction on Mitigating Global Hunger under Stringent Climate Change Mitigation Policy

Dr. Shujuan Xia (NIES)

(21) Utilizing Urban IoT Sensor data to Build More Advanced Air Temperature Information Using Machine Learning

Ms. Ayano AIDA (Univ. of Seoul)

(22) Optimizing Urban Forest Allocation for Enhancing Carbon Uptake Using a Deep Learning-Based NPP Prediction Model

Ms. Daseul Kim (SNU)

(23) Projection of Waste Generation of Solar Panels

Dr. Reina Kawase (Lake Biwa Environmental Research Institute)

(24) De-polluting China's Cement Industry while Improving Cement Quality

Prof. Zhaoling Li (Shanghai Univ.)

(25) Critical Enabling Conditions to Realise a Net-zero Climate Resilient Development Pathway in Four ASEAN Member States

Dr. Yosuke Arino (IGES)

(26) Rethinking the Economic Impact of Future Energy Demand Changes

Mr. Yohan Choi (Univ. of Seoul)

(27) Vulnerability of the Municipal Government in Aquaculture due to Changes in Sea Surface Temperature - A Case of Tongyeong City

Ms. Yeeun Lee (Yeungnam Univ.)

(28) Spatial Conservation Priorities Using Species Occurrence Data and Species Distribution Model against Climate Change

Prof. Yongwon Mo (Yeungnam Univ.)

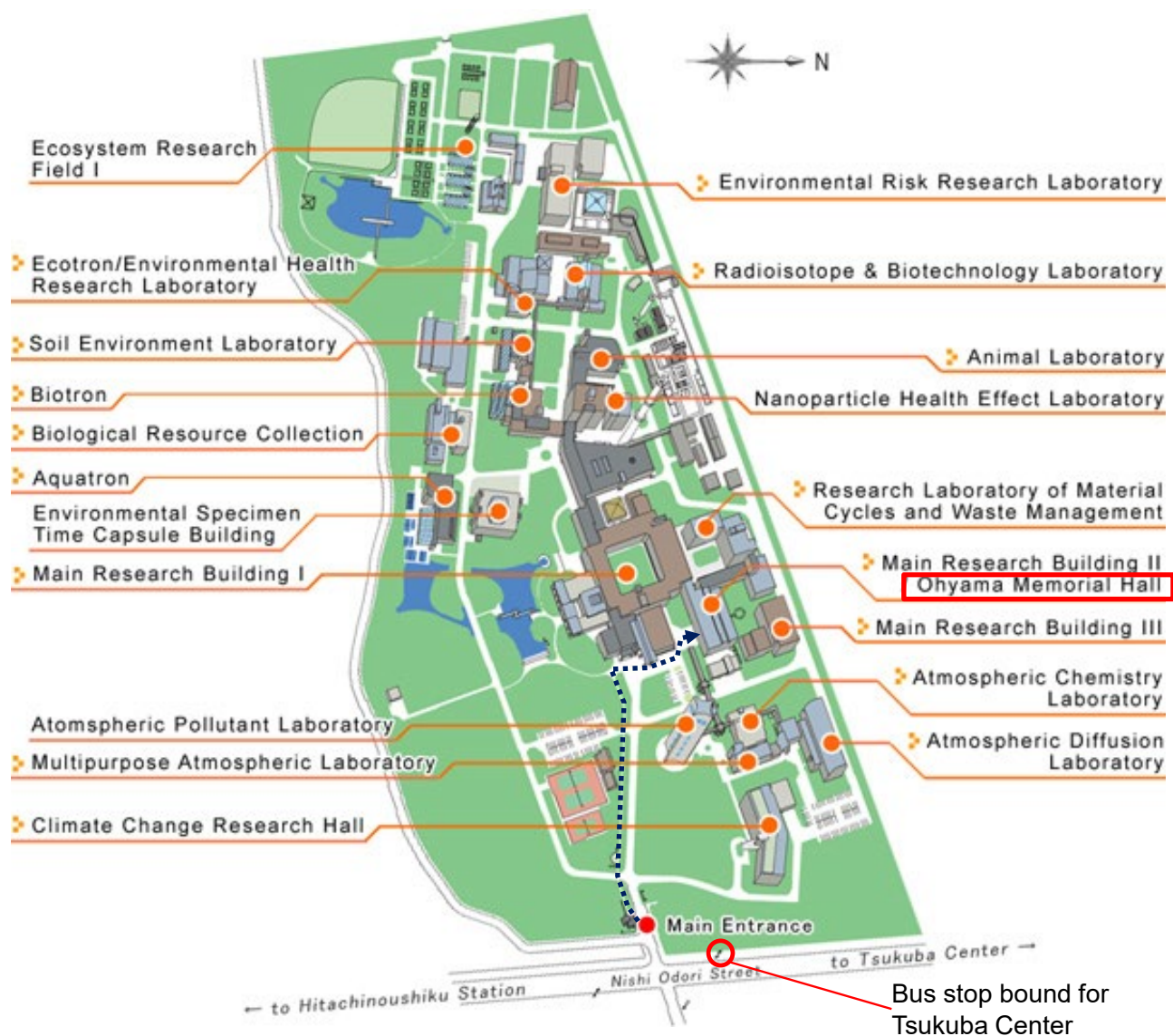
(29) The Role of Wildlife Protection Areas in the Land-use Change Using Time-series Data in the Republic of Korea

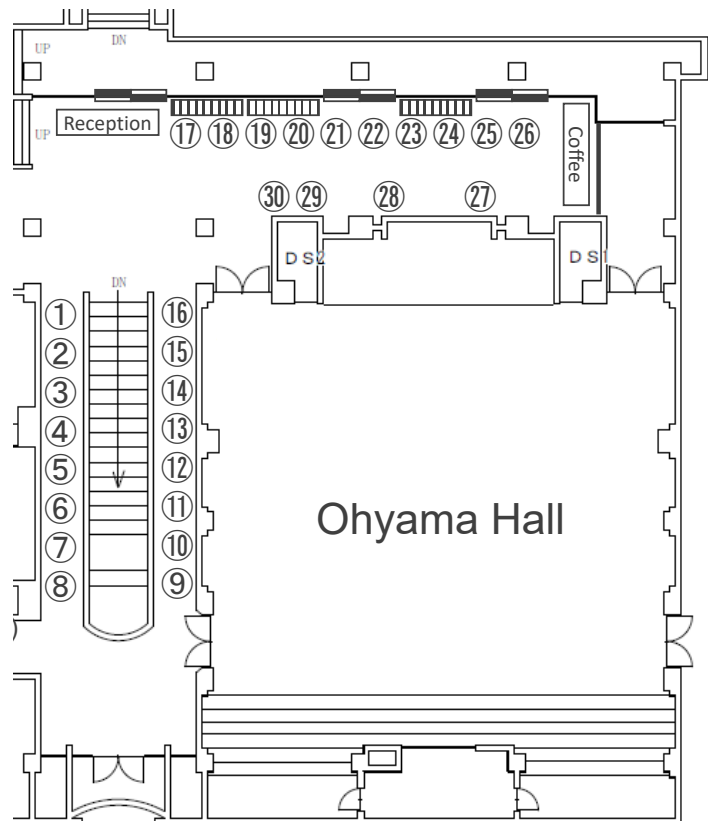
Ms Min Seon Kim (Yeungnam Univ.)

(30) Socioeconomic Impacts from Shifting to Sustainable Food Consumption towards Indonesia's Net Zero Emission

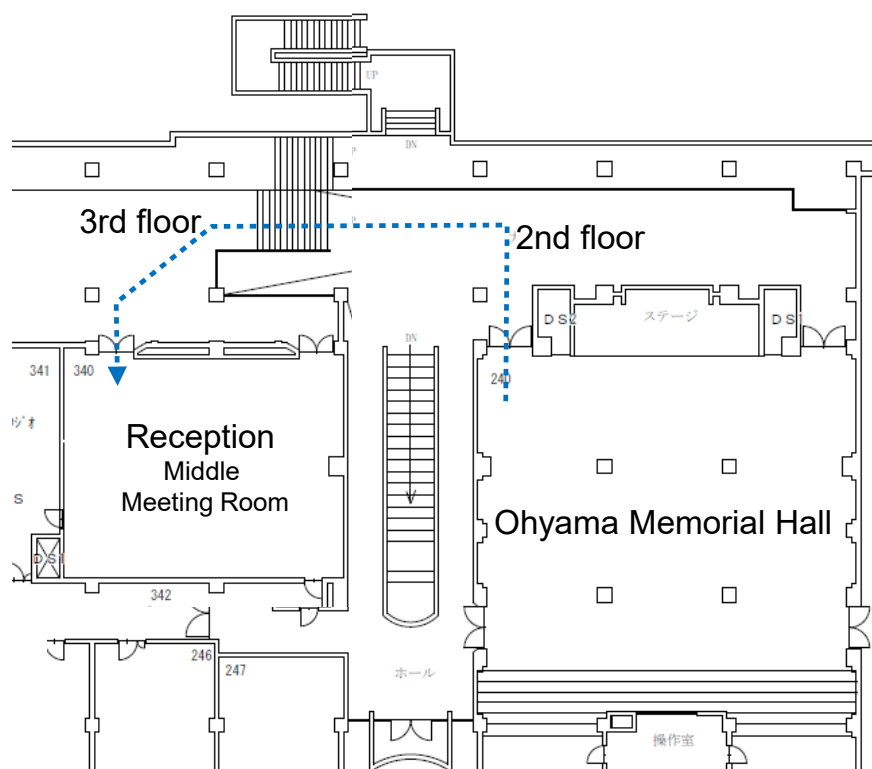
Dr. Annuri Rossita (NIES)

Online poster session: <https://nies.box.com/s/p5ffks528j1mznbkdydoeh9j5204yxs>





Layout of poster session (Ohyama Memorial Hall)



Location of Middle Meeting Room for Reception and Dinner