KYUNGMIN LEE

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EDUCATION

PhD	Univesity of Delaware, Energy and Environmental Policy	(Expected) 2025
	Dissertation: The Impact of Human Behaviors and the Built Environment on Energy Use and Heat in Cities.	
MCP	Seoul National University, Environmental Studies	2018
BA	Sungshin Women's University, Economics	2014

RESEARCH FOCUS

- Environmental Policy & Planning, Eergy Policy, Climate Policy
- Urban Informatics, Urban Resilience, Computational Social Science
- Community Development, Nonprofit Management, Public Finance, Social Justice

PUBLICATIONS

Peer Reviewed Journal Articles

2. Arjunan, P., Dobler, G., **Lee, K.**, Miller, C., Biljecki, F., & Poolla, K. (2021, November). Operational characteristics of residential air conditioners with temporally granular remote thermographic imaging. In *Proceedings of the 8th ACM international conference on systems for energy-efficient buildings, cities, and transportation* (pp.184-187). https://doi.org/10.1145/3486611.3486659

1. **Lee, K.**, & Yun, S.J. (2018). Positive Effects and Problematic Conditions of Adopting the Benefit Sharing Mechanism in Renewable Energy Projects: Focusing on the Case of Onshore Wind Farms in Jeju Island. *Space & Environment*: Vol.65. (pp.227~270). doi: https://doi.org/10.19097/kaser.2018.28.3.227
   - Featured in the *Monthly Electrical Technology & Information* 2019 January [CrossRef]

Papers Under Review

3. **Lee, K.**, Yun, S.J., & Park, S.A. Varied Drivers for Reducing CO2 Emissions in Countries with Legislated Carbon Neutrality Targets: A Kaya Identity Clustering Analysis. *Environment, Development and Sustainability* (R&R) https://papers.ssrn.com/abstract=4985181
   - Awarded a Best Student Paper Award from the NECoPA 2023 Fall Conference.
   - Awarded an Excellence Research Award from the Korea Safety Health and Environment Foundation.

2. **Lee, K.**, Yun, S.J., & Myeong, J.Y. Proposing a Value-Sharing Mechanism for Wind Power: Impact of Benefit-sharing and Community Engagement on Acceptance and Environmental Awareness. *Renewable and Sustainable Energy Review* (Under Review) https://papers.ssrn.com/abstract=4985185

1. **Lee, K.**, Nathanael, W. B., Park, Y., Jeung, J., Kang, I. Integrated Analysis of Happiness Using Empirical Models and Deep Learning from a Sustainability Perspective.

Work in Progress

5. **Lee, K.**, & Dobler, G. A Novel Approach to Assessing the Efficacy of Policy-driven Urban Energy Demand Reduction via Proximal Infrared Remote Sensing.
4. **Lee, K.**, Dobler, G, & Powers, T. Privacy-preserving Spatio-temporal Data Aggregation for Energy-End Use in City.
3. **Lee, K.**, & Dobler, G. Urban Heat Island Effect and Structural Form of City Using Proximal Remote Sensing.
2. Chotalia, S., **Lee, K.**, Hustse, V., Kaam, S., Quispe, D. Optimizing Carbon Emissions and Cost Reductions for Household Energy Demand Using Machine Learning.
1. **Lee, K.** Using machine learning approach for energy and environmental policy

Policy Reports

4. Cho, H., Lim, Y., Kim, S., Jeong, H., & **Lee, K.** (2019) Technical Assistance for the Development of an Urban Adaptation Plan for Kurunegala Project, D4.1 Report on the Results of Climate Change Risk and Vulnerability Asssessment. CTCN Requests No. 2018000009 Vol 3. UN Climate Technology Centre and Network, & Korea Environment Institute.
3. Cho, H., Rubio, C., Jeong, H., **Lee, K.**, & Odawa, S. (2019) Technical Assistance for the Development of an Urban Adaptation Plan for Kurunegala Project, D4.2 Climate Change Risk Assessment Guidelines. CTCN Requests No. 2018000009 Vol 4. UN Climate Technology Centre and Network, & Korea Environment Institute.
2. Kim, G., & **Lee, K.** (2016). A Comparative Study of Humanitarian Programs for Climate Refugees. *Enerzine Focus*: Vol.69 Energy Climate Policy Institute; Republic of Korea
1. Kim, T., Maeng, J., Park, J., & **Lee, K.** (2014). A Study on Environmental Assessment Guideline for Site Selection of Offshore Wind Farm Project. Korea Environment Institute.

PRESENTATIONS AND INVITED LECTURES

Conference Panel Paper / Poster Presentations

2024
- A Novel Approach to Assessing the Efficacy of Policy-driven Urban Energy Demand Reduction via Proximal Infrared Remote Sensing. *Conference on Neural Information Processing Systems* (*NeurIPS*) *2024 Workshop on Tackling Climate Change with Machine Learning.* Vancouver, Canada. Poster. December 2024. (Forthcoming)
- Insight to Action: Optimizing Carbon Emissions and Cost Reductions for Household Energy Demand Using Machine Learning. *Conference on Neural Information Processing Systems* (*NeurIPS*) *2024 Workshop on Tackling Climate Change with Machine Learning.* Vancouver, Canada. Poster. December 2024. (Forthcoming)

- Behavioral Metrics and the Limits of Aggregation for Anonymization and Privacy Preservation Policy. *Association for Public Policy Analysis & Management (APPAM).* National Harbor, Maryland, USA. Panel Paper. November 2024. (Forthcoming)
- Monitoring HVAC Use Behavior in Buildings and Energy Policy Using Proximal Infrared Images. *Association for Public Policy Analysis & Management (APPAM).* National Harbor, Maryland, USA. Poster. November 2024. (Forthcoming)
- Did Financial Benefit-sharing and Community Engagement Increase Residential Acceptance of Windmills and Environmental Protection Awareness? *Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA).* Washington DC, USA. Panel Paper. November 2024. (Forthcoming)
- Monitoring HVAC Use and Behavioral Metrics for Energy and Privacy Policy Using Proximal Infrared Images. *Chungnam National University Conference of Advanced Technology (CCAT).* Virtual Presentation. Panel Paper. November 2024. (Forthcoming)
- Proposing a Value-Sharing Mechanism for Wind Power: Impact of Benefit-sharing and Community Engagement on Acceptance and Environmental Awareness. *Northeast Conference on Public Administration (NECoPA).* New York City, USA. Panel Paper. November 2024. (Forthcoming)
- Analyzing Benefit-Sharing Mechanisms for Wind Farms in Jeju Island: A Framework and Survey. *Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA)-Asia.* Seoul, South Korea. Poster. June 2024.
- Privacy-Preserving Spatio-Temporal Data Aggregation for Energy End Use in City. *Urban Association Affairs (UAA).* New York City, USA. Panel Paper. April 2024.

2023
- A Novel Approach to Assessing the Efficacy of Policy-driven Urban Energy Demand Reduction via Proximal Infrared Remote Sensing. *Association for Public Policy Analysis & Management (APPAM).* Atlanta, Georgia, USA. Panel Paper. November 2023.
- Drivers of CO2 Emissions Trends in Countries That Have Legislated Carbon Neutrality Targets. *Northeast Conference on Public Administration (NECoPA).* Virtual Presentation. Panel Paper. November 2023.

2022
- An Exploratory Study on Carbon Neutrality Monitoring Models and Scenarios for the Establishment of a Sustainability Assessment System: A Comparison of Korea and Countries Enacted Legally Binding Agreements. *Korea Safety, Health, and Environment Foundation,* Virtual Presentation. Panel Paper. November 2022.

2018
- An Influence of the Benefit Sharing Mechanism to the Local Acceptance and Environmental Awareness: Focusing on the Case of Onshore Wind Farms in Jeju Island. *Bio-resources, Energy, Environment, and Materials Technology International Conference.* Hongcheon, South Korea. Poster. June 2018.
- An Exploratory Study on Positive Effects of and Problematic Conditions of Adopting the Benefit Sharing Mechanism: Focusing on the Case of Onshore

Wind Farms in Jeju Island. *Korea Environmental Policy and Administration Society*. Seoul, South Korea. Panel Paper. February 2018.

2016
- A Study on Impacts from Price Subsidy and Tax Policy of EVs in South Korea. *Korea Environmental Economics Association International Conference*. Seoul, South Korea. Panel Paper. June 2016.

Invited Lectures / Guest Speakers

2024
- Novel Approach to Assessing the Efficacy of Policy-driven Urban Energy Demand Reduction via Proximal Infrared Remote Sensing. *Principles of Urban Data Science (SPPA720). Biden School of Public Policy and Administration. University of Delaware*. September 2024.

2023
- Computational Social Science for Energy and Environmental Policy. *Department of Public Administration. Chungnam National University*. October 2023.
- Data-Driven Policy Making For Disaster Management. *Department of Public Administration. Chungnam National University*. April 2023.

2021
- Overview of Data Science and Machine Learning Tools in the Energy and Environmental Policy Field. *Department of Public Administration. Chungnam National University*. November 2021.

2020
- A Case Study of Machine Learning Applications in Energy and Environmental Policy. *Department of Public Administration, Chungnam National University*. October 2020.

Symposiums

2024
- Detection of Building Energy End-Use Via Proximal Infrared Remote Sensing and Computer Vision. *UD DARWIN Symposium*. February 2024.

2023
- Detection of Building Energy End-Use Via Proximal Infrared Remote Sensing and Computer Vision. *UD Data Science Symposium*. September 2023.

2021
- Extraction of Air Conditioner Unit Indicators from Proximal Infrared Remote Sensing of Buildings. *UD Data Science Symposium*. November 2021.

Keynote Address

2023
- Data-Driven Policymaking for Energy and Environmental Policy. *Harvard Data Science Initative*. December 2023.

2022
- An Exploratory Study on Carbon Neutrality Monitoring and Scenario Evaluation: Comparative Analysis of Korea and Countries that Enacted Carbon Neutrality. *Naioth Debriefing Conference*. November 2022.

HONORS AND AWARDS

Research Fellowships

2023   University of Delaware, Doctoral Fellowship for Excellence 2023–2024 (~$30,000)

2022   University of Delaware, Summer Doctoral Fellowship ($4,500)

Research Grants/Awards

2024	UD Travel Grant Awards ($3,000)
2023	Northeast Conference on Public Administration (NECoPA) 2023, Best Student Paper Award ($140)
2022	Korea Safety Health and Environment Foundation, Environmental Research Forum, Excellence Research Award ($250)
2015	Korea Energy Climate Policy Institute, Research Grant Program Competition, Grant Award ($1,550)

Honors

2024	Climate Change AI In-Person Summer School ($1000)
2022	Aspen Institute, Future Leaders Climate Summit Cohort (Travel Award)
2016	Korea Meteorological Administration, International Meteorological Expert Program, UN Internship Fellowship Award (~$3,600)
2015	Ministry of Environment of Korea & Korea Environment Corporation, Global Environmental Leaders Program, UN Internship Fellowship Award (~$6,000)
2014	Korea National Assembly Climate Change Forum, Climate Change Academy, Excellence Award (Travel Award, UNFCCC COP20 Observer)

Academic Distinctions / Scholarships

2019-23	University of Delaware, Tuition & Assistantships
2015-16	Seoul National University, Merit-based & Work-Study Scholarships
2011-13	Sungshin Women's University, Merit-based Scholarships

RESEARCH EXPERIENCE

University of Delaware, Research Assistant	Feb. 2023 – Present
Korea Environment Institute, Researcher	May 2019 – Jun. 2019
Seoul National University, Research Assistant	Sep. 2015 – Aug. 2016
Korea Environment Institute, Research Intern	Apr. 2014 – Dec. 2014

TEACHING EXPERIENCE

University of Delaware, Teaching Assistant	Aug. 2019 – Dec. 2022

Undergraduate Level Courses (2019-2022)

Crafting Public Policy (UAPP225)

Non-Governmental Actors: Interest Groups	Spring 2022
Environmental and Energy Policy	Spring 2021
Policy Implementation and Regulatory Rule-Making	Spring 2020

Introduction to Energy and Environmental Policy (ENEP250)

Global Environmental Law and Policy/Climate Policy/Seminar	Fall 2022
Study Team Workshop	Spring 2022
Environmental Law and Policy	Fall 2020

Political Economy of the Environment (ENEP410)

Global Capitalism and the Environment	Fall 2021

Environmental Sustainability: Political and Economic Analysis (ENEP410)
Global Financing: Climate Change and the Least Developed Countries   Fall 2019

RELEVANT WORK EXPERIENCE

Korea Marine Environment Management Corporation   Jun. 2018 – Sep. 2018
    International Affairs Specialist, *International Cooperation Team*
United Nations Environment Program (UNEP)   Mar. 2017-Aug. 2017
    Intern, *Green Growth Knowledge Platform*
United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)-East and North-East Asia Office (ENEA)
    Intern, *Environmental Affairs*   Sep. 2016 – Feb. 2017

SERVICE ACTIVITIES

Journal Review
Policy Studies Journal (PSJ), 2023

Conference Service
ARNOVA-Asia, Session Moderator, June 2024
APPAM Data Science Community, Steering Committee, 2023-2024

Department and University Service
UD Climate Change Hub, Climate Fellows, 2023-2024
UD Computational Social Science Association, Acting President, 2022-2023
UD Data Science Institute, Graduate Fellow, 2021-2023
UD Biden School Student Association, Secretary, 2021-2022
UD Korean Graduate Student Association, Officer, 2021-2022
UD Energy and Environmental Policy Student Association, Alumni Chair, 2020-2021

Community Service
UD Center for Global Programs & Services, Korean Culture Night, Volunteer, 2024
NAIOTH, Research & Thesis Writing Training Program Mentor, 2023-Present
Annual Delaware Korean Festival, Volunteer, 2021
Korean Youth Climate Change Network BIGWAVE, Steering Committee, 2016-2019

PROFESSIONAL & ACADEMIC AFFILIATIONS

Association for Public Policy Analysis and Management (APPAM), Member; **Public Management Research Association (PMRA),** Member; **Urban Affairs Association (UAA),** Member; **American Society for Public Administration (ASPA),** Member; **Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA),** Member; **American Planning Association (APA),** Member; **Society of Policy Scientists,** Member

TRAINING

Summer Institute in Computational Social Science (SICSS)-**Korea 2024,** Korea Advanced Institute of Science and Technology (KAIST) and KDI School of Public Policy and Management
Climate Change AI In-Person Summer School 2024, Mila-Québec AI Institute

LANGUAGES

Korean (Native), **English** (Proficient), **French, Chinese** (Beginner)

COMPUTER SKILLS

Python (Main), R, LaTeX, SPSS, ArcGIS