

SAE ROK JEONG (SHE/HER/HERS)

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EDUCATION

Jimmy and Rosalynn Carter School of Public Policy, Georgia Institute of Technology	Atlanta, GA
Ph.D. Student	Expected June 2030
Harris School of Public Policy, University of Chicago	Chicago, IL
M.A. in Public Policy	June 2025
Seoul National University	Seoul, Republic of Korea
M.A. in Technology Management, Economics and Policy	August 2016
Hanyang University	Seoul, Republic of Korea
B.S. in Earth Resources and Environmental Engineering	August 2014
Honors: Summa Cum Laude	

HONORS, SCHOLARSHIPS

Stamps Fellowship	2025 – 2030
Harris Merit Scholarship	2024 – 2025
Scholarship for International Program	2013
Resource Development Specialized University Scholarship	2011-2012
Excellent Scholarship	2011-2012

WORK EXPERIENCE

NEXT group	Seoul, Republic of Korea
Senior Analyst	April 2021 - August 2023
<ul style="list-style-type: none">Analyzed data to decompose greenhouse gases emission factors and predict trendsLed the Korean Industrial Decarbonization Roadmap (2022-2050) project	
Agora Energiewende	Berlin, Germany
Visiting Researcher	June 2022 - February 2023
<ul style="list-style-type: none">Developed an Excel tool for Global Steel Transformation projectResearched and compared the Green Deal in the European Union and Korea	
Korea Investors Service, an affiliate of Moody's Ratings	Seoul, Republic of Korea
Credit Analyst	September 2018 - January 2021
<ul style="list-style-type: none">Rated financial credits of over 100 Korean petrochemical, fine chemical, and cosmetic companiesForecasted outlook for corporations' credibility by combining industrial outlook and corporate competition	
DB Financial Investment Research Center	Seoul, Republic of Korea
Research Assistant	July 2016 - May 2018
<ul style="list-style-type: none">Analyzed global monthly fund flowCollected data for assets, including global stock index, foreign exchange, commodity and interpreted market condition	

PUBLICATIONS

- Jeong S., Jung M., Yoon H. J.** (2026). Strategic responses to China's overcapacity: a system dynamics analysis of South Korea's petrochemical industry, *Energy Sources, PartB: Economics Planning and Policy*, 21(1), <https://doi.org/10.1080/15567249.2025.2603659>
- Jeong S., Kim S.** (2025). Analysis of price elasticity of electricity demand by region and use in South Korea, *Energy & Environment*, <https://doi.org/10.1177/0958305X251385233>
- Jeong S., Chang E.** (2025). Industrial Concentration in South Korea: Implications for the Auction Design of Carbon Contract for Difference, *Climate Policy*, 1–11. <https://doi.org/10.1080/14693062.2025.2475039>
- Hong S., Kim E., **Jeong S.** (2023). Evaluating the Sustainability of the Hydrogen Economy Using Multi-criteria Decision-making Analysis in Korea, *Renewable Energy*, 204, pp.485-492, <https://doi.org/10.1016/j.renene.2023.01.037>
- Kim S., **Jeong S.**, Heo E. (2019). Effects of Shale Boom on Ethylene and Propylene Prices, *Energy Sources, PartB: Economics, Planning, and Policy*, 14, pp.49-66, <https://doi.org/10.1080/15567249.2019.1607631>
- Jeong S., Heo E.** (2015). Stochastic Characteristics of International Energy Market Prices Considering a Structural Break: Case study of the US Henry Hub Natural Gas Prices, *Innovation Studies*, 10(2), pp.123-141

SKILLS

STATA, R, Python, LaTeX, Microsoft Office (Excel, Word, PowerPoint), Vensim, GAMS, QGIS, Notion

RESEARCH EXPERIENCE

- Impacts of China's Self-Sufficiency Policy on South Korea's Petrochemical Industry** March 2024 – September 2024
- Simulated production margins for ethylene and polyethylene in South Korea based on China's self-sufficiency targets
 - Applied system dynamics modelling to consider non-linear relationships among variables using Vensim
- Analysis of Price Elasticity of Electricity Demand by Region and Use in South Korea** February 2024 – July 2024
- Analyzed the regional price elasticity of industrial and residential electricity demand in South Korea from 2010 to 2021
 - Applied the Autoregressive Distributed Lag (ARDL) in STATA
- Measuring Industrial Concentration: Implications for Carbon Contracts for Difference** November 2023 – May 2024
- Measured industrial concentration of Korea's manufacturing using the Concentration Ratio and the Herfindahl-Hirschman Index
 - Developed a new definition of enterprise boundaries to effectively measure concentration
 - Derived implications for auction designs aimed at reducing industrial GHG emissions
- Evaluating the Sustainability of the Hydrogen Economy Using Multi-Criteria Decision-making Analysis in Korea** 2021
- Evaluated the environmental, economic, and social sustainability of hydrogen economy under the energy trilemma framework
 - Compared the positive and negative impacts of hydrogen with other energy carriers, including nuclear, coal, gas and renewables
- Effects of the U.S. Shale Boom on Ethylene and Propylene prices** 2017 – 2018
- Analyzed the effect of the U.S. shale boom on the olefin industries
 - Investigated the paths through which U.S. natural gas prices affect ethylene and propylene prices, using Structural Equation Model (SEM) in R

PRESENTATIONS

- "South Korea's Strategy in Overcapacity Petrochemical Market: A Scenario Analysis Using System Dynamics Model", 2024 Spring Conference of the Korean Society of Mineral and Energy Resources Engineers. Yeosu, Korea, June 2024
- "Driving Forces behind the Green Transition – Comparing Governmental Green Strategies in the EU, South Korea and the U.S.", Agora Energiewende Webinar, December 2, 2022, <https://www.agora-energiewende.de/en/events/driving-forces-behind-the-green-transition/>
- "Meta Study on Stochastic behavior of Natural Resources Price", 2016 Spring Conference of the Korean Society of Mineral and Energy Resources Engineers. Wonju, Korea, April 2016
- "Mean Reversion Characteristics in the Natural Gas Price: Considering a Structural Break", 2015 Fall Joint Conference of Geology, Mineral and Energy Resources. Jeju, Korea, October 2015
- "Literature Review and Meta Study on the relationship between electricity demand and economic growth", 2015 Spring Conference of the Korean Society of Mineral and Energy Resources Engineers. Korean Institute of Geology and Mineral, Korea, April 2015

REPORTS

- Jeong S. (2023). "Implementing Carbon Contract for Difference in Korea", NEXT Group issue brief (funding provided by the Federal Ministry of Economic Affairs and Climate Action of the Federal Republic of Germany), <https://nextgroup.or.kr/?xBfO9Z2b>
- Jeong S., Ko E. (2022). "2050 Carbon Neutrality Roadmap for Korea: K-Map Scenario for Industrial Sector", NEXT Group report, <https://eng.nextgroup.or.kr/?tM7BGZ10>
- Agora Energiewende, GESI, IGT, NEXT Group (2022). "2050 Carbon Neutrality Roadmap for Korea: K-Map Scenario", <https://eng.nextgroup.or.kr/?t69CSV35>
- Jeong S., Song Y. (2021). "Increasing Electricity Demand in the Metropolitan Area Is Beyond the Capacity of the Existing System", NEXT Group issue brief, <https://eng.nextgroup.or.kr/?uac8Jdgh>
- Jeong S., Kim S. (2021). "RE100, Reforming Electricity 100?: Can Corporate Power Purchase Agreement (PPA) Ease the Regulations of the Electricity Market?", NEXT Group issue brief, <https://eng.nextgroup.or.kr/?z3CUSQON>

OP-ED

- "Carbon Contract for Difference to promote industrial decarbonization", September 4, 2023, Hankyung ESG, <https://www.hankyung.com/article/2023090411461>

TEACHING

- University of Chicago** Chicago, IL
- Kenneth C. Griffin Department of Economics, *Teaching Assistant for the Principles of Microeconomics course* Spring Quarter 2025
- Kenneth C. Griffin Department of Economics, *Teaching Assistant for the Introduction to Econometrics course* Winter Quarter 2025
- Social Science Collegiate Division, *Teaching Assistant for the Global Environmental Change course* Winter Quarter 2025
- Harris School of Public Policy, *Evening Master's Program Tutor [Data Analytics, Analytical Politics course]* Autumn Quarter 2024
- Seoul National University** Seoul, Republic of Korea
- Teaching Assistant for the Management of Energy, Environment and Technology course* Second Semester 2015