

Maghfira Ramadhani (Afi)

221 Bobby Dodd Way NW
Atlanta, GA 30332

+1 (404) 610-6287
maghfira.ramadhani@gatech.edu
maghfiraer.github.io



Education

Ph.D. Economics, Georgia Institute of Technology, expected May 2027.

Minor in Higher Education, Certificate in College Teaching

Committee: Dylan Brewer (co-chair), Bobby Harris (co-chair), Casey Wichman, Laura Taylor

M.S. Economics, Georgia Institute of Technology, 2025.

B.S. & M.S. Petroleum Engineering, Institut Teknologi Bandung, 2021.

Research Interests

Energy and Environmental Economics, Applied Microeconomics, Empirical Industrial Organization

Working Papers

1. "Battery Storage and Natural Gas Generator Market Power"

(Job Market Paper)

This paper estimates the impact of utility-scale battery storage on the market power of incumbent fossil fuel generators. Using unit-level data from the Texas electricity market, I find that local storage entry reduces natural gas peaker markups by 14 to 19 percent during evening ramp hours, operating through a flattening of residual demand rather than through changes in operating efficiency. This disciplining effect is concentrated among small-capacity generators, while large-capacity incumbents with dominant local market shares are unaffected and see their inframarginal rents rise. As a result, storage entry increases aggregate producer rent by \$200 million annually rather than reducing it. The net social benefit of storage instead comes almost entirely from displaced emissions: I estimate a total annual benefit of \$2.2 billion, driven by \$2.4 billion in annual environmental benefit, against a \$9 billion investment cost.

2. "Digital Dispatch and Demand Response in Grid Emergencies: Evidence from Household Cooling in California's Flex Alerts"

(with Dylan Brewer and Soren Anderson)

We study how moral suasion and automation interact to drive electricity conservation during an unprecedented western U.S. heatwave in 2022. We use smart-thermostat data from five western states and a natural experiment in California: a series of unevenly-broadcast conservation requests punctuated midway by a statewide emergency phone alert. We document three findings. First, unevenly-broadcast requests suffer from rapid habituation. Second, the highly salient phone alert reverses this habituation. Third, the phone alert dampens Californians' tendency to override centralized thermostat changes, tripling the efficacy of automation. These results imply strong complementarities between smart technology and salient moral suasion frictions.

3. "Pollution, Avoidance Behavior, and Health"

(with Bobby Harris)

We estimate the causal effect of air pollution on avoidance behavior and health using a novel high-frequency wearable device and electronic health record data from the NIH All of Us program. Analyzing 60 billion minute-level observations for nearly 60,000 individuals, we exploit daily wind direction instruments to identify the impact of PM_{2.5} on physical activity. We document substantial defensive behavior: a one standard deviation increase in PM_{2.5} reduces daily step counts by approximately 290. This response is non-linear and exhibits intraday intertemporal substitution. Our findings demonstrate that ignoring compensatory avoidance behavior yields downward-biased estimates of the biological damage function and the welfare costs of pollution.

Peer Reviewed Publications

- Matthew E. Oliver, Oliver Chapman, Santiago Grijalva, Daniel C. Matisoff, Maghfira Ramadhani, and Amanda West. (2026). "[Managing zero-marginal-cost, intermittent renewable energy: A survey of the engineering, economic, and policy challenges](#)" *Renewable and Sustainable Energy Reviews*, 226, 116334.
- Muhammad Ichsan, Matthew Lockwood, and Maghfira Ramadhani. (2022). "[National oil companies and fossil fuel subsidy regimes in transition: The case of Indonesia](#)". *The Extractive Industries and Society*, 11, 101104.

Honors, Fellowships, and Awards

2026	John Wylder Dissertation Fellowship (\$6,000)
2026	Georgia Tech Economics Fourth Year Paper Prize
2026	Google Cloud Research Credit (\$1,000)
2025	Tech to Teaching Certificate, Georgia Tech
2025	Herbert P. Haley Fellowship for the most highly qualified graduate students
2025	Diversity Fellowship in Environmental and Energy Economics (Berkeley/Sloan)
2025	Google Cloud Research Credit (\$1,000)
2025	Georgia Tech EPICenter Summer Research Fellowship (\$7,500)
2025	Georgia Tech Economics Third Year Paper Prize
2025	Georgia Tech CRIDC Award
2025	Omicron Delta Epsilon Travel Award ($\times 2$)
2022–2027	School of Economics Graduate Fellowship
2022–2024	Richard House Fellowship
2021	Best Master Graduate, Institut Teknologi Bandung

Conference and Workshops

* indicates scheduled

2027	AEA Annual Meeting*
2026	AEA Annual Meeting, Georgia Tech Energy Day, APPAM Fall Research Conference*
2025	AERE at SEA Annual Meeting; Berkeley/Sloan Summer School in Energy and Environmental Economics; Atlanta Economics PhD Student Symposium; AERE Summer Conference; Georgia Tech CRIDC; Empirical Method in Energy Economics
2024	BREAD-IGC PhD course on Urban Economics; SWEEEP at Georgia Tech; Colorado University Environmental and Resource Economics Workshop; EPICenter at Georgia Tech

Teaching Experience

Georgia Institute of Technology

Graduate Teaching Fellow at Center for Teaching and Learning (2026-2027)

Instructor: Statistics for Economists (Fall 2025) [[Course Website](#)][[Teaching Evaluation](#)]

Guest Lecturer: PhD Environmental Economics (Spring 2025)

Head TA: PhD Econometrics II (Spring 2026), PhD Environmental Economics (Spring 2025),

Environmental Economics (Spring 2025, 2026, Summer 2023, 2024), International Economics (Spring 2023),

Math for Economists (Spring 2023, 2024), Energy Economics (Fall 2023), Advanced Microeconomics (Fall 2023),

Econometric Analysis (Fall 2022), Statistics for Economists (Fall 2024)

Institut Teknologi Bandung

Instructor: Energy Economics (2017-2022)

Head TA: Master-level Energy Policy (2017-2022), Optimization & Operation Research (2017)

Professional Service

Referee: Journal of Environmental Economics and Management

Reviewer: AERE Summer Conference, AERE at SEA Annual Meeting

Member: American Economic Association (AEA)

Association of Environmental and Resource Economists (AERE)

Association for Public Policy Analysis and Management (APPAM)

Other: Mentee, Association for Mentoring and Inclusion in Economics (AMIE) Program (2025-2026)

Member, Georgia Tech School of Economics Chair Search Committee (2025-2026)

Founder and Organizer, Georgia Tech Economics PhD Workshop (2025)

Research Experience

2024– Student Affiliate, Georgia Tech Energy Policy and Innovation Center (EPICenter)

2024– Student Affiliate, Georgia Tech Climate, Environmental, and Resource (CLEAR) Economics Lab

2023–2024 Graduate Research Assistant to Matthew E. Oliver

2017–2022 Adjunct Faculty, Institut Teknologi Bandung

Policy and Economic Advisory: Provided economic policy analysis and advisory to the governor's office, the national oil and gas regulator, several state-owned energy enterprises, and private companies through a series of consulting projects.

Affiliations: Center for Research on Energy Policy; Indonesia Center of Excellence on Carbon Capture and Storage; Carbon and Environmental Research Indonesia; Governor's Expert Staff in Energy

Related Publications (*indicates former undergraduate student advisee) :

1. Prasandi Abdul Aziz, Willy Dharmawan*, Wijoyo Daton, Maghfira Ramadhani, and Steven Chandra. (2023). "Optimization of hydraulic fracturing and economic analysis using production sharing contract and gross split for well-X on a naturally fractured volcanic reservoir: A case study of geothermal well Y in Indonesia" In *AIP Conference Proceedings*, 2598 (1), 030015.
2. Stephen Salomo*, Muhammad Rahmadhani*, Maghfira Ramadhani, Asep Permadi, and Ari Iskandar. (2022). "Comparative Study on Fixed-Price Contract versus Incentive-Based Contract in Indonesia's Oil and Gas Industry," In *46th Indonesian Petroleum Association Annual Conventions Proceedings*. [Preprint]
3. Muhammad Ichsan, Yusuf F. Martak, Maghfira Ramadhani, Chitra R. Septyandrica, and Purnomo Yusgiantoro. (2021). "Is cheap fuel policy a (short-term) remedy for costly transportation in rural Indonesia?" In *IOP Conference Series: Earth and Environmental Science*, 753 (1), 012030.
4. Maghfira Ramadhani, Prasandi Abdul Aziz, Steven Chandra, and Wijoyo Daton. (2021). "CO₂ sink and source matching for better CO₂ utilization in increasing oil production: Case study of field X and Y in Indonesia," In *AIP Conference Proceedings*, 2363 (1), 020015

Additional Information

Software: Stata, R, Python, L^AT_EX, Julia (basic)

Language: English (fluent), Bahasa Indonesia (native)

Citizenship: Indonesian (F-1 Visa, STEM OPT Eligible)

References

Dylan Brewer

Associate Professor, School of Economics
Georgia Institute of Technology
brewer@gatech.edu ✉

Bobby Harris

Assistant Professor, School of Economics
Georgia Institute of Technology
bobby.harris@gatech.edu ✉

Casey Wichman

Associate Professor, School of Economics
Georgia Institute of Technology
wichman@gatech.edu ✉

Laura Taylor

Professor, School of Economics
Director, Energy Policy and Innovation Center (EPICenter)
Georgia Institute of Technology
ltaylor75@gatech.edu ✉

Last updated: August 4, 2026