

Eleanor M. Hennessy

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EDUCATION

Stanford University, Palo Alto, CA

Sep '18 - June '23

Ph.D., Energy Science and Engineering

Thesis: Equity and Environmental Justice in the Clean Energy Transition in the United States

Primary advisor: Dr. Inês Azevedo

Co-Advisor: Dr. Sally Benson

Additional Committee Member: Dr. Margot Gerritsen

Stanford University, Palo Alto, CA

Sep '15 - June '17

M.S., Civil and Environmental Engineering

Concentration: Atmosphere and Energy

Rice University, Houston, TX

Aug '11 - May '15

B.S., Civil and Environmental Engineering

Concentration: Environmental Engineering

Minor: Energy and Water Sustainability

PUBLICATIONS

Journal Articles:

Peer-reviewed:

1. **Hennessy, E.M.**, Singh, M., and Azevedo, I.M.L. 2024. "Pathways to zero emissions in California's heavy-duty transportation sector." *Environmental Research: Infrastructure and Sustainability* (4) 035001
2. **Hennessy, E.M.** and Azevedo, I.M.L. 2024. "Emerging environmental justice issues at the intersection of transportation and electricity systems." *Progress in Energy* 6 (3) 033003.
3. Okoroafor, et al., 2024. "Fueling the California Mobility Market with Hydrogen from Natural Gas plus Carbon Capture and Sequestration." *International Journal of Greenhouse Gas Control*. 133 104095.
4. **Hennessy, E.M.** and Syal, S.M., 2023. "Assessing Justice in California's Transition to Electric Vehicles." *iScience* 26 (7) 106856.
5. **Hennessy, E.M.**, de Chalendar, J.A., Benson, S.M., and Azevedo, I.M.L., 2022. "Distributional health impacts of electricity imports in the United States." *Environmental Research Letters* 17 (6) 064011.
6. Jacobson, et al., 2018. "100% clean and renewable wind, water, and sunlight (WWS) all-sector energy roadmaps for 53 towns and cities in North America." *Sustainable Cities and Society* 42, 22-37.
7. Jacobson, et al., 2017. "100% clean and renewable wind, water, and sunlight all-sector energy roadmaps for 139 countries of the world". *Joule* 1 (1) 108-121.

In review:

1. **Hennessy, E.M.**, Scown, C., and Azevedo, I.M.L. 2023. "Commodity-specific health and climate impacts of long-haul truck electrification." *Minor revision*.
2. **Hennessy, E.M.** et al. 2024. "Changing Boundaries, Distributed Control, and Implications for Transport Sustainability." *In review*.

3. **Hennessy, E.M.**, Chester, M.V. 2024. “Electric Utility Vulnerability to Wildfire and Post-Fire Debris Flow in California”. *Revise & resubmit*.
4. Syal, S.M., **Hennessy, E.M.**, Eggerman, K., Carrillo, E., and Gerritsen, M., 2023. “Inclusive Community Identification and Selection for Equitable Engagement in Transportation Projects.” *Revise & resubmit*.
5. Singh, M., **Hennessy, E.M.**, Saltzer, S., Berson, A. 2024. “Policies to retire old light-duty vehicles will help achieve California’s zero-emissions targets and provide substantial air-pollution co-benefits.” *In review*.

Report Contributions

1. **Hennessy, E.M.**, Singh, M., Azevedo, I., and Saltzer, S. 2022. “Pathways to Carbon Neutrality in California: Decarbonizing the Transportation Sector,” *Stanford Center for Carbon storage and Stanford Carbon Removal Initiative*.
2. Bracci, et al. 2022. “Fueling the California Mobility Market with Hydrogen from Natural Gas plus Carbon Capture and Storage”, *Stanford Natural Gas initiative and Stanford Center for Carbon Storage*.
3. AC Transit, 2021. “Zero Emission Transit Bus Technology Analysis” AC Transit.

PRESENTATIONS

Selected Conferences

1. Hennessy, E.M., Chester, M.V. “Electric Utility Vulnerability to Wildfire and Post-Fire Debris Flow in California”. June 2024. *International Symposium for Sustainable Systems and Technology*.
2. Hennessy, E.M. “Environmental Justice Implications of Power Plant Siting in the United States.” June 2024. *International Symposium for Sustainable Systems and Technology*.
3. Hennessy, E.M., Batur, I.M., Bhat, C., Pendyala, R. “Understanding Factors Contributing to Electric Vehicle Ownership in California”. June 2024. *International Conference on Transportation and Development*. (poster)
4. Hennessy, E.M. “Environmental Justice Implications of Power Plant Siting in the United States.” December 2023. *AGU Fall Meeting*. (poster)
5. Hennessy, E.M., Singh, M., Saltzer, S., and Azevedo, I.M.L. October 2023. “Pathways to zero-emissions in California’s Heavy-duty Transportation Sector.” *INFORMS 2023 Annual Meeting*.
6. Hennessy, E.M., Scown, C., and Azevedo, I.M.L. December 2022. “Commodity-specific health and climate impacts of long-haul truck electrification” *AGU Fall Meeting*.
7. Hennessy, E.M., Syal, S.M., and Gerritsen, M. November 2022. “Equity in the Electric Vehicle Transition in California. *Behavior, Energy, and Climate Change Conference*.
8. Hennessy, E.M., Singh, M., and Azevedo, I.M.L. October 2022. “Decarbonizing Heavy Duty Transport in California. *USAAE Annual Meeting*.
9. Hennessy, E.M., Benson, S.M., Azevedo, I.M.L. December 2021. “Distributional health impacts of electricity imports in the United States.” *AGU Fall Meeting*.
10. Hennessy, E.M., Benson, S.M., Azevedo, I.M.L. December 2020. “Distributional health impacts of electricity imports in the United States.” *C3E Conference*.
11. Hennessy, E.M., and Onori, S. April 2019. “Towards Electrification of the Military Vehicle Fleet. *SAE Conference*.

Workshops

1. Energy Justice in the Energy Transition. October 2023. Southern Methodist University.

Affiliate Meetings and Research Reviews

1. Hennessy, E.M. “Health, climate, and equity benefits of long-haul truck electrification.” May 2023. *Stanford Bits and Watts Annual Meeting*.
2. Hennessy, E.M., Eggerman, K., Litong, T., Gerritsen, M., and Syal, S.M. May 2022. “Understanding Social Drivers and Barriers to Sustainable Mobility in Sonoma County.” *Stanford Earth Research Review*.
3. Hennessy, E.M., Benson, S.M., Azevedo, I.M.L. November 2021. “Distributional health impacts of electricity imports in the United States.” *SCCS Affiliates Meeting*.

Invited Talks:

1. Hennessy, E.M. and Syal, S.M. Equitable Access to Technology: Electric Vehicles Brown Bag. May 2024. Federal Energy Regulatory Commission.
2. Hennessy, E.M. “Centering Equity in the Transition to Clean Energy”. February 2023. Arizona State University.
3. Hennessy, E.M. “Centering Equity in the Transition to Clean Energy”. February 2023. University of California Irvine.

TEACHING EXPERIENCE

Course Instruction

ENERGY 312 Equitably Decommissioning Internal Combustion Engine Vehicles: Sonoma County Community Engagement
Primary Instructor

Fall '21

Designed and taught course in which students learned about the challenges associated with transitioning to electric vehicles and decommissioning conventional vehicles. Students conducted interviews with community members and did self-designed group projects.

ENERGY 104/204 Sustainable Energy for 9 Billion

Spring '20, '21, '22

Teaching Assistant

Contributed to redesigning course, lecture material development, and homework creation. Taught students how to use the Python programming language to create global energy system models. Held office hours, TA sessions, and graded assignments.

CEE 64 / CEE 263D Air Pollution and Global Warming:
History, Science, and Solutions

Winter '17

Teaching Assistant

Assisted with homework and quiz design, led recitation sessions, and organized course assistants.

CEE 63 / CEE 263C Weather and Storms

Fall '16

Teaching Assistant

Led recitation sessions, graded final papers, organized course assistants (graders).

Guest Lectures:

“Sustainable Energy”. October 2023. ASU 101. Arizona State University

“Transportation”. September 2022. ENERGY 13SC Energy in Hawaii: Forefront of Clean Energy Technology and Policy. Stanford University

“Air Pollution.” March 2022. ENERGY 104/204 Sustainable Energy for 9 Billion. Stanford University

“Air Pollution.” May 2021. ENERGY 104/104 Sustainable Energy for 9 Billion. Stanford University

“Decarbonizing Transportation.” May 2020. ENERGY 104/204 Sustainable Energy for 9 Billion. Stanford University

“Energy Access.” March 2016. Air Pollution and Global Warming. Stanford University

GRANTS AND FELLOWSHIPS

McGee Levenson Grant	2021
Stanford Environmental Justice Fellowship	2021
Karl Knapp Fellow in City Government	2019
Schneider Fellow	2016

MENTORSHIP AND LEADERSHIP

Mentorship

New Student Mentor, Energy Resources Engineering	2019 - 2023
Mentor, Stanford Earth Young Investigators	Summer 2022
Project Leader, Stanford Energy Club – Collaboration with Antora Energy	2020
Project Leader, Stanford Energy Club – K-12 Educational Outreach	2017
Student leader, Solutions Project	2016 - 2017

Leadership Activities

Diversity Liaison, Department of Energy Resources Engineering	Fall 2022 – Spring 2023
Rising Environmental Leaders Program	Spring 2022
Student Advisory Board: Partnerships for Climate Justice in the Bay Area, Stanford Haas Center	2021
Engineers for a Sustainable World	2017

WORK EXPERIENCE

City of Palo Alto Utilities, Palo Alto, CA Summer 2019
Summer Fellow – Built a model to determine the cost-effectiveness of battery energy storage from utility and customer perspectives based on simulated battery dispatch and interaction with the wholesale electricity market.

Center for Sustainable Energy, San Diego, CA 2018
Research Analyst – Cleaned, analyzed, and visualized data for clean energy products including identifying factors contributing to readiness for solar adoption, updating a utility rate calculation tool, quantifying GHG emissions reductions due to program implementation, and visualizing EV purchase trends in San Francisco.

United Nations Foundation, Washington D.C. Summer 2016
Summer Fellow in Energy Access – Designed, implemented, and analyzed a survey of energy access practitioners to understand the current challenges in the sector's work.

PROFESSIONAL SERVICE

Journal reviews:

Environmental Research Letters
Environmental Research: Infrastructure and Sustainability
Environmental Research: Energy
Environmental Research Communications
iScience
Environmental Science & Technology

Conference submission reviews:

Transportation Research Board Annual Conference
United States Association for Energy Economics North American Conference
International Symposium on Sustainable Systems and Technology

Panels and Moderator Roles

Panelist, Early Career Researchers Panel, ISSST 2024	Jun '24
Session Moderator, Rising Environmental Leaders Program Summit	Mar '24
Session Moderator, IRF Global Conference 2023	Nov '23
Student Moderator, Stanford Global Energy Dialogues	Mar '21
Panelist, Stanford @ SLAC New Student Panel	Sep '19

LANGUAGES, SKILLS, AND CERTIFICATIONS

Languages

English (native speaker)
Spanish (working proficiency)

Skills

Python, R, MATLAB, GIS

Certifications

Engineer in Training (Civil Engineering)	Aug '15
IOP Trusted Reviewer	Jun '24

SELECTED MEDIA

1. Udasin, Sharon. July 2024. "California must retire gas-guzzling trucks to meet 2045 emissions targets: Study." *The Hill*. <https://thehill.com/policy/equilibrium-sustainability/4760409-california-trucks-retirement-carbon-neutrality/>
2. Golden, Mark. May 2022. "Electricity imports within the U.S. are associated with about 700 premature deaths annually, study finds." <https://energy.stanford.edu/news/within-us-exporting-electricity-imports-about-700-premature-deaths-annually-stanford-study>
3. Hennessy, N., and Syal, S. November 2021. "Uncovering Barriers to Clean Transportation in Sonoma County." <https://medium.com/ejstanford/uncovering-barriers-to-clean-transportation-in-sonoma-county-2d76b700bac5>
4. Gibson, Kate. February 2020. "A model internship: Evaluating batteries for customers of Palo Alto Utilities." <https://energy.stanford.edu/spotlight/nora-hennessy>
5. Merchant, Emma. March 2024. "Potential Changes to Alternate-Fuel Standards Could Hike Gas Prices in California. Critics See a "Regressive Tax" on Low-Income Communities." <https://insideclimatenews.org/news/28032024/california-gas-prices-hike-impact-low-income-communities/>