

Stanford



Inês Azevedo

Associate Professor of Energy Science Engineering, at the Stanford Doerr School of Sustainability and Senior Fellow at the Precourt Institute for Energy
Energy Science and Engineering

Bio

BIO

Professor Azevedo is passionate about solving problems that include environmental, technical, economic, and policy issues, where traditional engineering approaches play an important role but cannot provide a complete answer. In particular, she is interested in assessing how energy systems are likely to evolve, which requires comprehensive knowledge of the technologies that can address future energy needs and the decision-making process followed by various agents in the economy.

ACADEMIC APPOINTMENTS

- Associate Professor, Energy Science and Engineering
- Senior Fellow, Precourt Institute for Energy
- Associate Professor, Integrated Socio-Environmental Systems

ADMINISTRATIVE APPOINTMENTS

- Associate Professor (with tenure), Energy Science and Engineering, (2019- present)

HONORS AND AWARDS

- C3E Women in Clean Energy, Research Award, C3E (2017)
- Philip L. Dowd Fellowship Award, Carnegie Mellon University (2017)
- "Young Scientists Under 40, World Economic Forum (WEF) (2014)

LINKS

- Azevedo Research: <https://earth.stanford.edu/ere/about/energy-resources-engineering-faculty>
- Interdisciplinary Energy Systems (INES) Research Group: <https://ines.stanford.edu/>
- Google Scholar: <https://scholar.google.com/citations?user=f2yeR2QAAAAJ&hl=en&oi=ao>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Professor Azevedo is passionate about solving problems that include environmental, technical, economic, and policy issues, where traditional engineering approaches play an important role but cannot provide a complete answer. In particular, she is interested in assessing how energy systems are likely to evolve, which requires comprehensive knowledge of the technologies that can address future energy needs and the decision-making process followed by various agents in the economy.

Teaching

COURSES

2022-23

- Energy and the Environment: EARTHSYS 101, ENERGY 101 (Win)
- Fundamentals of Renewable Power: EARTHSYS 102, ENERGY 102 (Spr)
- Sustainable Energy Decisions: CEE 263H, ENERGY 263 (Win)
- Sustainable Energy Interdisciplinary Graduate Seminar: CEE 372, ENERGY 309, MS&E 495 (Aut, Win, Spr)

2021-22

- ERE Master's Graduate Seminar: ENERGY 351 (Spr)
- ERE PhD Graduate Seminar: ENERGY 352 (Spr)
- Energy and the Environment: EARTHSYS 101, ENERGY 101 (Win)
- Sustainable Energy Decisions: ENERGY 263 (Win)
- Sustainable Energy Interdisciplinary Graduate Seminar: CEE 372, ENERGY 309, MS&E 495 (Aut, Win)

2020-21

- ERE Master's Graduate Seminar: ENERGY 351 (Aut)
- ERE PhD Graduate Seminar: ENERGY 352 (Aut)
- Energy and the Environment: EARTHSYS 101, ENERGY 101 (Win)
- Sustainable Energy Interdisciplinary Graduate Seminar: ENERGY 309 (Aut, Win, Spr)

2019-20

- Introduction to Quantitative Methods for Energy Decisions: ENERGY 263 (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Jill Horing, Wennan Long, Yuhao Nie

Doctoral Dissertation Co-Advisor (AC)

Kiran Chawla, Kirat Singh, Jayson Toweh

Master's Program Advisor

Dhruv Suri

Doctoral (Program)

Jill Ferguson, Nora Hennessy, Tapas Peshin, Ranjitha Shivaram, Madalsa Singh

Publications

PUBLICATIONS

- **Subnational implications from climate and air pollution policies in India's electricity sector.** *Science (New York, N.Y.)*
Sengupta, S., Adams, P. J., Deetjen, T. A., Kamboj, P., D'Souza, S., Tongia, R., Azevedo, I. M.
2022; 378 (6620): eabh1484
- **Sustained cost declines in solar PV and battery storage needed to eliminate coal generation in India** *ENVIRONMENTAL RESEARCH LETTERS*
Mohan, A., Sengupta, S., Vaishnav, P., Tongia, R., Ahmed, A., Azevedo, I. L.
2022; 17 (11)

-
- **Charging infrastructure access and operation to reduce the grid impacts of deep electric vehicle adoption** *NATURE ENERGY*
Powell, S., Cezar, G., Min, L., Azevedo, I. L., Rajagopal, R.
2022
 - **Current and Future Estimates of Marginal Emission Factors for Indian Power Generation.** *Environmental science & technology*
Sengupta, S., Spencer, T., Rodrigues, N., Pachouri, R., Thakare, S., Adams, P. J., Tongia, R., Azevedo, I. M.
2022
 - **Should India Move toward Vehicle Electrification? Assessing Life-Cycle Greenhouse Gas and Criteria Air Pollutant Emissions of Alternative and Conventional Fuel Vehicles in India.** *Environmental science & technology*
Peshin, T., Sengupta, S., Azevedo, I. M.
2022
 - **Bidding on a Peer-to-Peer Energy Market: An Exploratory Field Study** *INFORMATION SYSTEMS RESEARCH*
Worner, A., Tiefenbeck, V., Wortmann, F., Meeuw, A., Ableitner, L., Fleisch, E., Azevedo, I.
2022
 - **Distributional health impacts of electricity imports in the United States** *ENVIRONMENTAL RESEARCH LETTERS*
Hennessy, E. M., de Chalendar, J. A., Benson, S. M., Azevedo, I. L.
2022; 17 (6)
 - **Expert elicitation on paths to advance fuel cell electric vehicles** *ENERGY POLICY*
Whiston, M. M., Azevedo, I., Litster, S., Samaras, C., Whitefoot, K. S., Whitacre, J. F.
2022; 160
 - **The Great Intergenerational Robbery: A Call for Concerted Action Against Environmental Crises** *ANNUAL REVIEW OF ENVIRONMENT AND RESOURCES*
Gadgil, A., Tomich, T. P., Agrawal, A., Allouche, J., Azevedo, I. L., Bakarr, M., Jannuzzi, G. M., Liverman, D., Malhi, Y., Polasky, S., Roy, J., Urge-Vorsatz, D., Wang, et al
2022; 47: 1-4
 - **Paths to market for stationary solid oxide fuel cells: Expert elicitation and a cost of electricity model** *APPLIED ENERGY*
Whiston, M. M., Azevedo, I., Litster, S., Samaras, C., Whitefoot, K. S., Whitacre, J. F.
2021; 304
 - **Recent developments at energy policy** *ENERGY POLICY*
Thomas, S., Antunes, C., Azevedo, I., Madlener, R., Yeh, S., Zhou, P., Du, H., Goutte, S.
2021; 159
 - **Energy systems in scenarios at net-zero CO2 emissions.** *Nature communications*
DeAngelo, J., Azevedo, I., Bistline, J., Clarke, L., Luderer, G., Byers, E., Davis, S. J.
2021; 12 (1): 6096
 - **The food we eat, the air we breathe: a review of the fine particulate matter-induced air quality health impacts of the global food system** *ENVIRONMENTAL RESEARCH LETTERS*
Balasubramanian, S., Domingo, N. G., Hunt, N. D., Gittlin, M., Colgan, K. K., Marshall, J. D., Robinson, A. L., Azevedo, I. L., Thakrar, S. K., Clark, M. A., Tessum, C. W., Adams, P. J., Pandis, et al
2021; 16 (10)
 - **Welfare analysis of the ecological impacts of electricity production in Chile using the sparse multinomial logit model** *ECOLOGICAL ECONOMICS*
De La Maza, C., Davis, A., Azevedo, I.
2021; 184
 - **Do LED lightbulbs save natural gas? Interpreting simultaneous cross-energy program impacts using electricity and natural gas billing data (vol 3, 015003, 2021)** *ENVIRONMENTAL RESEARCH COMMUNICATIONS*
Adekanye, O. G., Davis, A., Azevedo, I. L.
2021; 3 (5)
 - **The impact of Uber and Lyft on vehicle ownership, fuel economy, and transit across U.S. cities.** *iScience*
Ward, J. W., Michalek, J. J., Samaras, C., Azevedo, I. L., Henao, A., Rames, C., Wenzel, T.
-

2021; 24 (1): 101933

- **Do LED lightbulbs save natural gas? Interpreting simultaneous cross-energy program impacts using electricity and natural gas billing data** *ENVIRONMENTAL RESEARCH COMMUNICATIONS*
Adekanye, O. G., Davis, A., Azevedo, I. L.
2021; 3 (1)
- **Energy Efficiency: What Has Research Delivered in the Last 40 Years?** *ANNUAL REVIEW OF ENVIRONMENT AND RESOURCES, VOL 46, 2021*
Saunders, H. D., Roy, J., Azevedo, I. L., Chakravarty, D., Dasgupta, S., Du Can, S., Druckman, A., Fouquet, R., Grubb, M., Lin, B., Lowe, R., Madlener, R., Mccoy, et al
2021; 46: 135-165
- **How does new energy storage affect the operation and revenue of existing generation?** *Applied Energy*
Goteti, N. S., Hittinger, E., Azevedo, I. L.
2021; 285 (116383)
- **Effects of Air Emission Externalities on Optimal Ridesourcing Fleet Electrification and Operations.** *Environmental science & technology*
Bruchon, M. B., Michalek, J. J., Azevedo, I. L.
2021
- **Global food system emissions could preclude achieving the 1.5° and 2° C climate change targets.** *Science (New York, N.Y.)*
Clark, M. A., Domingo, N. G., Colgan, K., Thakrar, S. K., Tilman, D., Lynch, J., Azevedo, I. L., Hill, J. D.
2020; 370 (6517): 705–8
- **Regional and county flows of particulate matter damage in the US** *ENVIRONMENTAL RESEARCH LETTERS*
Sergi, B., Azevedo, I., Davis, S. J., Muller, N. Z.
2020; 15 (10)
- **Characterizing the association between low-income electric subsidies and the intra-day timing of electricity consumption** *ENVIRONMENTAL RESEARCH LETTERS*
Sherwin, E. D., Azevedo, I. L.
2020; 15 (9)
- **The COVID-19 lockdowns: a window into the Earth System** *NATURE REVIEWS EARTH & ENVIRONMENT*
Difffenbaugh, N. S., Field, C. B., Appel, E. A., Azevedo, I. L., Baldocchi, D. D., Burke, M., Burney, J. A., Ciais, P., Davis, S. J., Fiore, A. M., Fletcher, S. M., Hertel, T. W., Horton, et al
2020; 1 (9): 470-481
- **Climate and Health Benefits of Rapid Coal-to-Gas Fuel Switching in the U.S. Power Sector Offset Methane Leakage and Production Cost Increases.** *Environmental science & technology*
Deetjen, T. A., Azevedo, I. L.
2020
- **What are the best combinations of fuel-vehicle technologies to mitigate climate change and air pollution effects across the United States?** *ENVIRONMENTAL RESEARCH LETTERS*
Tong, F., Azevedo, I. L.
2020; 15 (7)
- **Optimizing Emissions Reductions from the U.S. Power Sector for Climate and Health Benefits.** *Environmental science & technology*
Sergi, B. J., Adams, P. J., Muller, N. Z., Robinson, A. L., Davis, S. J., Marshall, J. D., Azevedo, I. L.
2020
- **The Paths to Net Zero How Technology Can Save the Planet** *FOREIGN AFFAIRS*
Azevedo, I., Davidson, M. R., Jenkins, J. D., Karplus, V. J., Victor, D. G.
2020; 99 (3): 18–27
- **Simulating a residential building stock to support regional efficiency policy** *APPLIED ENERGY*
Glasgo, B., Khan, N., Azevedo, I.
2020; 261
- **Reducing Mortality from Air Pollution in the United States by Targeting Specific Emission Sources** *Environmental Science & Technology Letters*

Thakrar, S. K., Balasubramanian, S. X., Adams, P. J., Azevedo, I. M., Muller, N. Z., Pandis, S. N., Polasky, S., Pope III, C. A., Robinson, A. L., Apte, J. S., Tessum, C. W., Marshall, J. D., Hill, et al
2020; 7 (9): 639-645

- **Life-cycle greenhouse gas emissions of alternative and conventional fuel vehicles in India**

Peshin, T., Azevedo, I. L., Sengupta, S., IEEE
IEEE.2020

- **Characterizing the association between low-income electric subsidies and the intra-day timing of electricity consumption** *Environmental Research Letters*

Sherwin, E. D., Azevedo, I. M.
2020; 15 (9)

- **Regional and county flows of particulate matter damage in the US** *Environmental Research Letters*

Sergi, B., Azevedo, I., Davis, S. J., Muller, N. Z.
2020; 15 (10)

- **The COVID-19 lockdowns: a window into the Earth system** *Earth & Environment*

Diffenbaugh, N. S., Field, C. B., Appel, E. A., Azevedo, I. L., et al
2020; 1: 470-481

- **Trace element allocation across air pollution control devices in coal fired power plants** *Philip L. Dowd Fellowship Award*

Sun, X., Gingerich, D. B., Azevedo, I. L., Mauter, M. S.
2020

- **Federal policy, local policy, and green building certifications in the U.S.** *Energy and Buildings*

Adekanye, O. G., Davis, A., Azevedo, I. L.
2020; 209 (15)

- **Hydrogen Storage for Fuel Cell Electric Vehicles: Expert Elicitation and a Levelized Cost of Driving Model** *Environmental Science & Technology*

Whiston, M. M., Azevedo, I. M., Litster, S., Samaras, C., Whitefoot, K. S., Whitacre, J. F.
2020; 55 (1): 553-562

- **Techno-economic analysis of forest biomass blends gasification for small-scale power production facilities in the Azores** *Fuel*

Cardoso, J. C., Silva, V., Eusébio, D., Azevedo, I. L., Tarelho, L. A.
2020; 279 (1)

- **Keep wind projects close? A case study of distance, culture, and cost in offshore and onshore wind energy siting** *Energy Research & Social Science*

Lamy, J., Bruine de Bruin, W., Azevedo, I. M., Morgan, M.
2020; 63

- **Quantifying the social equity state of an energy system: environmental and labor market equity of the shale gas boom in Appalachia** *ENVIRONMENTAL RESEARCH LETTERS*

Mayfield, E. N., Cohon, J. L., Muller, N. Z., Azevedo, I. L., Robinson, A. L.
2019; 14 (12)

- **Effects of on-demand ridesourcing on vehicle ownership, fuel consumption, vehicle miles traveled, and emissions per capita in US States** *TRANSPORTATION RESEARCH PART C-EMERGING TECHNOLOGIES*

Ward, J. W., Michalek, J. J., Azevedo, I. L., Samaras, C., Ferreira, P.
2019; 108: 289–301

- **Fine particulate matter damages and value added in the US economy.** *Proceedings of the National Academy of Sciences of the United States of America*

Tschofen, P., Azevedo, I. L., Muller, N. Z.
2019

- **How Much Are We Saving after All? Characterizing the Effects of Commonly Varying Assumptions on Emissions and Damage Estimates in PJM.** *Environmental science & technology*

Donti, P. L., Kolter, J. Z., Azevedo, I. L.
2019

- **Aligning evidence generation and use across health, development, and environment** *CURRENT OPINION IN ENVIRONMENTAL SUSTAINABILITY*

- Tallis, H., Kreis, K., Olander, L., Ringler, C., Ameyaw, D., Borsuk, M. E., Fletschner, D., Game, E., Gilligan, D. O., Jeuland, M., Kennedy, G., Masuda, Y. J., Mehta, et al
2019; 39: 81–93
- **Choice at the pump: measuring preferences for lower-carbon combustion fuels** *ENVIRONMENTAL RESEARCH LETTERS*
Helveston, J. P., Seki, S. M., Min, J., Fairman, E., Boni, A. A., Michalek, J. J., Azevedo, I. L.
2019; 14 (8)
 - **Alternative-fuel-vehicle policy interactions increase US greenhouse gas emissions** *TRANSPORTATION RESEARCH PART A-POLICY AND PRACTICE*
Jenn, A., Azevedo, I. L., Michalek, J. J.
2019; 124: 396–407
 - **Trace Element Mass Flow Rates from US Coal Fired Power Plants** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Sun, X., Gingerich, D. B., Azevedo, I. L., Mauter, M. S.
2019; 53 (10): 5585–95
 - **Support for Emissions Reductions Based on Immediate and Long-term Pollution Exposure in China** *ECOLOGICAL ECONOMICS*
Sergi, B., Azevedo, I., Xia, T., Davis, A., Xu, J.
2019; 158: 26–33
 - **Solar PV as a mitigation strategy for the US education sector** *ENVIRONMENTAL RESEARCH LETTERS*
Hanus, N. L., Wong-Parodi, G., Vaishnav, P. T., Darghouth, N. R., Azevedo, I. L.
2019; 14 (4)
 - **Expert assessments of the cost and expected future performance of proton exchange membrane fuel cells for vehicles** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Whiston, M. M., Azevedo, I. L., Litster, S., Whitefoot, K. S., Samaras, C., Whitacre, J. F.
2019; 116 (11): 4899–4904
 - **Economic Viability of a Natural Gas Refueling Infrastructure for Long-Haul Trucks** *JOURNAL OF INFRASTRUCTURE SYSTEMS*
Tong, F., Azevedo, I., Jaramillo, P.
2019; 25 (1)
 - **Understanding Cumulative Risk Perception from Judgments and Choices: An Application to Flood Risks** *RISK ANALYSIS*
De La Maza, C., Davis, A., Gonzalez, C., Azevedo, I.
2019; 39 (2): 488–504
 - **Cumulative environmental and employment impacts of the shale gas boom.** *Nature sustainability*
Mayfield, E. N., Cohon, J. L., Muller, N. Z., Azevedo, I. M., Robinson, A. L.
2019; 2: 1122–31
 - **Comparing consumer perceptions of appliances' electricity use to appliances' actual direct-metered consumption** *Environmental Research Communications*
Lesic, V., Glasgo, B., Krishnamurti, T., Bruine de Bruin, W., Davis, M., Azevedo, I.
2019; 1 (11)
 - **Science and technology advice to European governments and to the European Union** *Theory and Practice in Policy Analysis*
Morgan, M.
2019
 - **Reduced-Order Dispatch Model for Simulating Marginal Emissions Factors for the United States Power Sector.** *Environmental science & technology*
Deetjen, T. A., Azevedo, I. L.
2019
 - **Fine Particulate Air Pollution from Electricity Generation in the US: Health Impacts by Race, Income, and Geography.** *Environmental science & technology*
Thind, M. P., Tessum, C. W., Azevedo, I. L., Marshall, J. D.
2019
 - **Meeting U.S. Solid Oxide Fuel Cell Targets** *Joule*
Whiston, M. M., Azevedo, I. M., Litster, S., Samaras, C., Whitefoot, K. S., Whitacre, J. F.
2019; 3 (9): 2060-2065

- **Reducing the fuel consumption and greenhouse gas emissions of medium- and heavy-duty vehicles, phase two, final report**
Research Council, N.
The National Academies Press. Washington, DC.
2019
- **The implications of scope and boundary choice on the establishment and success of metropolitan greenhouse gas reduction targets in the United States** *ENVIRONMENTAL RESEARCH LETTERS*
Markolf, S. A., Matthews, H., Azevedo, I. L., Hendrickson, C.
2018; 13 (12)
- **Global carbon intensity of crude oil production.** *Science (New York, N.Y.)*
Masnadi, M. S., El-Houjeiri, H. M., Schunack, D., Li, Y., Englander, J. G., Badahdah, A., Monfort, J., Anderson, J. E., Wallington, T. J., Bergerson, J. A., Gordon, D., Koomey, J., Przesmitzki, et al
2018; 361 (6405): 851–53
- **Decarbonizing intraregional freight systems with a focus on modal shift** *ENVIRONMENTAL RESEARCH LETTERS*
Kaack, L. H., Vaishnav, P., Morgan, M., Azevedo, I. L., Rai, S.
2018; 13 (8)
- **Expert assessments on the future of direct current in buildings** *ENVIRONMENTAL RESEARCH LETTERS*
Glasgo, B., Azevedo, I., Hendrickson, C.
2018; 13 (7)
- **Net-zero emissions energy systems** *SCIENCE*
Davis, S. J., Lewis, N. S., Shaner, M., Aggarwal, S., Arent, D., Azevedo, I. L., Benson, S. M., Bradley, T., Brouwer, J., Chiang, Y., Clack, C. M., Cohen, A., Doig, et al
2018; 360 (6396): 1419–+
- **Assessing the evolution of power sector carbon intensity in the United States** *ENVIRONMENTAL RESEARCH LETTERS*
Schivley, G., Azevedo, I., Samaras, C.
2018; 13 (6)
- **Estimation of the year-on-year volatility and the unpredictability of the United States energy system** *NATURE ENERGY*
Sherwin, E. D., Henrion, M., Azevedo, I. L.
2018; 3 (4): 341–46
- **Towards demand-side solutions for mitigating climate change** *NATURE CLIMATE CHANGE*
Creutzig, F., Roy, J., Lamb, W. F., Azevedo, I. L., de Bruin, W., Dalkmann, H., Edelenbosch, O. Y., Geels, F. W., Grubler, A., Hepburn, C., Hertwich, E. G., Khosla, R., Mattauch, et al
2018; 8 (4): 268–71
- **A sunny future: expert elicitation of China's solar photovoltaic technologies** *ENVIRONMENTAL RESEARCH LETTERS*
Lam, L. T., Branstetter, L., Azevedo, I. L.
2018; 13 (3)
- **Induced seismicity hazard and risk by enhanced geothermal systems: an expert elicitation approach** *ENVIRONMENTAL RESEARCH LETTERS*
Trutnevyte, E., Azevedo, I. L.
2018; 13 (3)
- **Consumers' perceptions of energy use and energy savings: A literature review** *ENVIRONMENTAL RESEARCH LETTERS*
Lesic, V., de Bruin, W., Davis, M. C., Krishnamurti, T., Azevedo, I. L.
2018; 13 (3)
- **Quantifying the capacity value of natural gas efficiency in New England** *UTILITIES POLICY*
Gilbraith, N., Jaramillo, P., Azevedo, I.
2018; 50: 101–10
- **Distributional costs of wind energy production in Portugal under the liberalized Iberian market regime** *ENERGY POLICY*
Prata, R., Carvalho, P. S., Azevedo, I. L.
2018; 113: 500–512

- **Do tidal stream energy projects offer more value than offshore wind farms? A case study in the United Kingdom** *ENERGY POLICY*
Lamy, J. V., Azevedo, I. L.
2018; 113: 28–40
- **The effect of providing climate and health information on support for alternative electricity portfolios** *ENVIRONMENTAL RESEARCH LETTERS*
Sergi, B., Davis, A., Azevedo, I.
2018; 13 (2)
- **Integrating climate and health objectives to inform clean energy siting in capacity expansion modeling** *Energy Policy Research Conference*
Adams, S. B., Muller, P., Robinson, N., Davis, S., Azevedo, I.
2018
- **Inverse Optimal Power Flow: Assessing the Vulnerability of Power Grid Data** *AI for Social Good Workshop at NeurIPS 2018*
Donti, P., Azevedo, I., Kolter, J.
2018
- **Marginal Emissions Factors for Electricity Generation in the Midcontinent ISO** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Thind, M. S., Wilson, E. J., Azevedo, I. L., Marshall, J. D.
2017; 51 (24): 14445–52
- **Estimating the Quantity of Wind and Solar Required To Displace Storage-Induced Emissions** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Hittinger, E., Azevedo, I. L.
2017; 51 (21): 12988–97
- **Assessing the value of information in residential building simulation: Comparing simulated and actual building loads at the circuit level** *APPLIED ENERGY*
Glasgo, B., Hendrickson, C., Azevedo, I.
2017; 203: 348–63
- **Was it worthwhile? Where have the benefits of rooftop solar photovoltaic generation exceeded the cost?** *ENVIRONMENTAL RESEARCH LETTERS*
Vaishnav, P., Horner, N., Azevedo, I. L.
2017; 12 (9)
- **China's wind industry: Leading in deployment, lagging in innovation** *ENERGY POLICY*
Lam, L. T., Branstetter, L., Azevedo, I. L.
2017; 106: 588–99
- **Consistency and robustness of forecasting for emerging technologies: The case of Li-ion batteries for electric vehicles** *ENERGY POLICY*
Sakti, A., Azevedo, I. L., Fuchs, E. H., Michalek, J. J., Gallagher, K. G., Whitacre, J. F.
2017; 106: 415–26
- **Rethinking the Social Cost of Carbon Dioxide** *ISSUES IN SCIENCE AND TECHNOLOGY*
Morgan, M., Vaishnav, P., Dowlatabadi, H., Azevedo, I. L.
2017; 33 (4): 43–50
- **Estimating the effect of multiple environmental stressors on coral bleaching and mortality** *PLOS ONE*
Welle, P. D., Small, M. J., Doney, S. C., Azevedo, I. L.
2017; 12 (5): e0175018
- **Lessons from wind policy in Portugal** *ENERGY POLICY*
Pena, I., Azevedo, I. L., Fialho Marcelino Ferreira, L.
2017; 103: 193–202
- **Spatially resolved air-water emissions tradeoffs improve regulatory impact analyses for electricity generation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Gingerich, D. B., Sun, X., Behrer, A., Azevedo, I. L., Mauter, M. S.
2017; 114 (8): 1862–67
- **An integrated approach for estimating greenhouse gas emissions from 100 US metropolitan areas** *ENVIRONMENTAL RESEARCH LETTERS*
Markolf, S. A., Matthews, H., Azevedo, I. L., Hendrickson, C.

2017; 12 (2)

- **Assessing the value of information in residential building simulation: Comparing simulated and actual building loads at the circuit level** *9th International Conference on Energy Efficiency in Domestic Appliances and Lighting*
Glasgo, B., Azevedo, I., Hendrickson, C.
2017
- **Do Low-income Electric Subsidies Change Electricity Consumption Behavior?** *International Energy Program Evaluation Conference*
Sherwin, E., Azevedo, I.
2017
- **Characterization of utility programs' enrollment by income and region** *European Council for an Energy Efficient Economy Summer Study*
Sherwin, E., Azevedo, I., Meyer, R.
2017
- **Do Low-income Electric Subsidies Make Electricity Consumption More Peaky?** *Energy Efficiency in Domestic Appliances and Lighting*
Sherwin, E., Azevedo, I.
2017
- **Task-based End-to-end Model Learning in Stochastic Optimization** *Advances in Neural Information Processing Systems 30*
Donti, P., Amos, B., Kolter, J.
2017
- **PV technical potential in the United States with a focus on non-profit buildings and the associated regional health and environmental benefits** *9th International Conference on Energy Efficiency in Domestic Appliances and Lighting*
Hanus, N., Wong-Parodi, G., Azevedo, I., Davis, A.
2017
- **How much electricity can we save by using direct current circuits in homes? Understanding the potential for electricity savings and assessing feasibility of a transition towards DC powered buildings** *APPLIED ENERGY*
Glasgo, B., Azevedo, I., Hendrickson, C.
2016; 180: 66–75
- **Known unknowns: indirect energy effects of information and communication technology** *ENVIRONMENTAL RESEARCH LETTERS*
Horner, N. C., Shehabi, A., Azevedo, I. L.
2016; 11 (10)
- **Should we build wind farms close to load or invest in transmission to access better wind resources in remote areas? A case study in the MISO region** *ENERGY POLICY*
Lamy, J. V., Jaramillo, P., Azevedo, I. L., Wisser, R.
2016; 96: 341–50
- **Air emission implications of expanded wastewater treatment at coal-fired generators**
Gingerich, D., Sun, X., Behrer, A., Azevedo, I., Mauter, M.
AMER CHEMICAL SOC.2016
- **Trace element allocation across air pollution control devices in coal fired power plants**
Sun, X., Gingerich, D., Azevedo, I., Mauter, M.
AMER CHEMICAL SOC.2016
- **China's wind electricity and cost of carbon mitigation are more expensive than anticipated** *ENVIRONMENTAL RESEARCH LETTERS*
Lam, L. T., Branstetter, L., Azevedo, I. L.
2016; 11 (8)
- **Effect of regional grid mix, driving patterns and climate on the comparative carbon footprint of gasoline and plug-in electric vehicles in the United States** *ENVIRONMENTAL RESEARCH LETTERS*
Yuksel, T., Tamayao, M. M., Hendrickson, C., Azevedo, I. L., Michalek, J. J.
2016; 11 (4)
- **Alternative Fuel Vehicle Adoption Increases Fleet Gasoline Consumption and Greenhouse Gas Emissions under United States Corporate Average Fuel Economy Policy and Greenhouse Gas Emissions Standards** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*

-
- Jenn, A., Azevedo, I. L., Michalek, J. J.
2016; 50 (5): 2165–74
- **Forecasting light-duty vehicle demand using alternative-specific constants for endogeneity correction versus calibration** *TRANSPORTATION RESEARCH PART B-METHODOLOGICAL*
Haaf, C., Morrow, W., Azevedo, I. L., Feit, E., Michalek, J. J.
2016; 84: 182–210
 - **Dynamic Data Center Load Response to Variability in Private and Public Electricity Costs**
Horner, N., Azevedo, I., Sicker, D., Agarwal, Y., IEEE
IEEE.2016
 - **United States Data Center Energy Usage Report**
Shehabi, A., Smith, S., Sartor, D., Brown, R., Herrlin, M., Koomey, J., Masanet, E., Horner, N., Azevedo, I., Lintner, W.
ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY.
2016
 - **Heterogeneity in the response to gasoline prices: Evidence from Pennsylvania and implications for the rebound effect** *ENERGY ECONOMICS*
Gillingham, K., Jenn, A., Azevedo, I. L.
2015; 52: S41–S52
 - **A review of learning rates for electricity supply technologies** *ENERGY POLICY*
Rubin, E. S., Azevedo, I. L., Jaramillo, P., Yeh, S.
2015; 86: 198–218
 - **Comparison of Life Cycle Greenhouse Gases from Natural Gas Pathways for Light-Duty Vehicles** *ENERGY & FUELS*
Tong, F., Jaramillo, P., Azevedo, I. L.
2015; 29 (9): 6008–18
 - **Regional Variability and Uncertainty of Electric Vehicle Life Cycle CO₂ Emissions across the United States** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Tamayao, M. M., Michalek, J. J., Hendrickson, C., Azevedo, I. L.
2015; 49 (14): 8844–55
 - **Comparison of Life Cycle Greenhouse Gases from Natural Gas Pathways for Medium and Heavy-Duty Vehicles** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Tong, F., Jaramillo, P., Azevedo, I. L.
2015; 49 (12): 7123–33
 - **How will we fund our roads? A case of decreasing revenue from electric vehicles** *TRANSPORTATION RESEARCH PART A-POLICY AND PRACTICE*
Jenn, A., Azevedo, I., Fischbeck, P.
2015; 74: 136–47
 - **Nonproliferation improvements and challenges presented by small modular reactors** *PROGRESS IN NUCLEAR ENERGY*
Prasad, S., Abdulla, A., Morgan, M., Azevedo, I.
2015; 80: 102–9
 - **Bulk Energy Storage Increases United States Electricity System Emissions** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Hittinger, E. S., Azevedo, I. L.
2015; 49 (5): 3203–10
 - **Assessing regional differences in lighting heat replacement effects in residential buildings across the United States** *APPLIED ENERGY*
Min, J., Azevedo, I., Hakkarainen, P.
2015; 141: 12–18
 - **Changing the Renewable Fuel Standard to a Renewable Material Standard: Bioethylene Case Study** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Posen, I., Griffin, W., Matthews, H., Azevedo, I. L.
2015; 49 (1): 93–102
 - **Evaluating the Benefits of Commercial Building Energy Codes and Improving Federal Incentives for Code Adoption** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*

-
- Gilbraith, N., Azevedo, I. L., Jaramillo, P.
2014; 48 (24): 14121–30
- **Economic analysis of the profitability of existing wind parks in Portugal** *ENERGY ECONOMICS*
Pena, I., Azevedo, I., Fialho Marcelino Ferreira, L.
2014; 45: 353–63
 - **Comparing the magnitude of simulated residential rebound effects from electric end-use efficiency across the US** *ENVIRONMENTAL RESEARCH LETTERS*
Thomas, B. A., Hausfather, Z., Azevedo, I. L.
2014; 9 (7)
 - **The role of energy storage in accessing remote wind resources in the Midwest** *ENERGY POLICY*
Lamy, J., Azevedo, I. L., Jaramillo, P.
2014; 68: 123–31
 - **Should policy-makers allocate funding to vehicle electrification or end-use energy efficiency as a strategy for climate change mitigation and energy reductions? Rethinking electric utilities efficiency programs** *ENERGY POLICY*
Thomas, B. A., Azevedo, I. L.
2014; 67: 28–36
 - **Consumer End-Use Energy Efficiency and Rebound Effects** *ANNUAL REVIEW OF ENVIRONMENT AND RESOURCES, VOL 39*
Azevedo, I. L., Gadgil, A., Liverman, D. M.
2014; 39: 393–418
 - **Difusión de energía eólica: comparación de políticas de incentivos en Estados Unidos y Europa**
Peña-Cabra, I., González, E., Azevedo, I., Ferreira, L.
Revista Nano Ciencia y Tecnología.
2014
 - **The unsustainable rise of the Chinese wind turbine manufacturing industry** *NBER conference on The Economics of Environmental Protection*
Lam, L., Azevedo, I., Branstetter, L.
2014
 - **Reducing the fuel consumption and greenhouse gas emissions of medium- and heavy-duty vehicles, phase two, first report**
Research Council, N.
The National Academies Press. Washington, DC.
2014
 - **Labeling energy cost on light bulbs lowers implicit discount rates** *ECOLOGICAL ECONOMICS*
Min, J., Azevedo, I. L., Michalek, J., de Bruin, W.
2014; 97: 42–50
 - **The impact of federal incentives on the adoption of hybrid electric vehicles in the United States** *ENERGY ECONOMICS*
Jenn, A., Azevedo, I. L., Ferreira, P.
2013; 40: 936–42
 - **Effects of government incentives on wind innovation in the United States** *ENVIRONMENTAL RESEARCH LETTERS*
Horner, N., Azevedo, I., Hounshell, D.
2013; 8 (4)
 - **Regional variations in the health, environmental, and climate benefits of wind and solar generation** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Siler-Evans, K., Azevedo, I., Morgan, M., Apt, J.
2013; 110 (29): 11768–73
 - **Expert assessments of the cost of light water small modular reactors** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Abdulla, A., Azevedo, I., Morgan, M.
2013; 110 (24): 9686–91
-

- **Reducing US Residential Energy Use and CO2 Emissions: How Much, How Soon, and at What Cost?** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Azevedo, I., Morgan, M., Palmer, K., Lave, L. B.
2013; 47 (6): 2502–11
- **Estimating direct and indirect rebound effects for US households with input-output analysis Part 1: Theoretical framework** *ECOLOGICAL ECONOMICS*
Thomas, B. A., Azevedo, I. L.
2013; 86: 199–210
- **Estimating direct and indirect rebound effects for US households with input-output analysis. Part 2: Simulation** *ECOLOGICAL ECONOMICS*
Thomas, B. A., Azevedo, I. L.
2013; 86: 188–98
- **Assessment of solid-state lighting**
Research Council, N.
THE NATIONAL ACADEMIES PRESS.
2013
- **Modeling technology learning for electricity supply technologies, Phase I report**
Azevedo, I., Jaramillo, P., Rubin, E., Yeh, S.
Electric Power Research Institute.
2013
- **Modeling technology learning for electricity supply technologies, Phase II report**
Azevedo, I., Jaramillo, P., Rubin, E., Yeh, S.
Electric Power Research Institute.
2013
- **Managing Variable Energy Resources to Increase Renewable Electricity's Contribution to the Grid**
Scott Institute for Energy Innovation, W.
Carnegie Mellon University.
2013
- **The Rebound Effect: Implications of Consumer Behaviour for Robust Energy Policies**
Azevedo, I., Sonnberger, M., Thomas, B., Morgan, G., Renn, O.
International Risk Governance Council.
2013
- **Electricity consumption and energy savings potential of video game consoles in the United States** *ENERGY EFFICIENCY*
Hittinger, E., Mullins, K. A., Azevedo, I. L.
2012; 5 (4): 531–45
- **Edison Revisited: Should we use DC circuits for lighting in commercial buildings?** *ENERGY POLICY*
Thomas, B. A., Azevedo, I. L., Morgan, G.
2012; 45: 399–411
- **Marginal Emissions Factors for the U.S. Electricity System** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Siler-Evans, K., Azevedo, I., Morgan, M.
2012; 46 (9): 4742–48
- **Distributed cogeneration for commercial buildings: Can we make the economics work?** *ENERGY POLICY*
Siler-Evans, K., Morgan, M., Azevedo, I.
2012; 42: 580–90
- **ICT solutions in transportation systems: estimating the benefits and environmental impacts in the Lisbon**
Baptista, P. C., Azevedo, I. L., Farias, T. L., Aguilera, Bhouri, N., Farhi, N., Leurent, F., Seidowsky, R.
ELSEVIER SCIENCE BV.2012: 716–25
- **Designing building energy efficiency programs for greenhouse gas reductions** *ENERGY POLICY*
Blackhurst, M., Azevedo, I., Matthews, H., Hendrickson, C. T.

2011; 39 (9): 5269–79

- **Preparing US community greenhouse gas inventories for climate action plans** *ENVIRONMENTAL RESEARCH LETTERS*
Blackhurst, M., Matthews, H., Sharrard, A. L., Hendrickson, C. T., Azevedo, I.
2011; 6 (3)
- **Residential electricity consumption in Portugal: Findings from top-down and bottom-up models** *ENERGY POLICY*
Wiesmann, D., Azevedo, I., Ferrao, P., Fernandez, J. E.
2011; 39 (5): 2772–79
- **A contribution for a better understanding of the residential sector electricity demand** *Proceedings of the European Energy Efficiency Council (ECEEE) Summer Study*
Abreu, J., Azevedo, I., Pereira, F.
2011
- **The Transition to Solid-State Lighting** *PROCEEDINGS OF THE IEEE*
Azevedo, I., Morgan, M., Morgan, F.
2009; 97 (3): 481–510
- **The open source stochastic building simulation tool SLBM and its capabilities to capture uncertainty of policymaking in the U.S. building sector**
Stadler, M., Marnay, C., Azevedo, I., Komiyama, R., Lai, J.
ERNEST ORLANDO LAWRENCE BERKELEY NATIONAL LABORATORY.
2009
- **Energy efficiency and conservation: a bright idea with solid-state lighting?** *European Council for an Energy Efficient Economy (ECEEE) Summer Study*
Azevedo, I.
2007

PRESENTATIONS

- Effects of On-Demand Ridesourcing on U.S. Vehicle Ownership, Travel Patterns, and Energy Use Externalities - NBER Conference on Economics of Energy Use in Transportation (5/3/2019)
- Panel at Stanford Energy Dialogues on Energy Demand - Stanford Energy (1/21/2020 - 1/21/2020)
- “Distributional effects from air pollution in the United States” - Lawrence Berkeley National Laboratory (11/13/2019 - 11/13/2019)
- Optimal ride-hailing fleets electrify more, modify operations, and reduce air pollution emissions when emissions costs are internalized - CARS Annual Meeting, Stanford University (11/7/2019 - 11/7/2019)
- Air pollution and climate consequences from energy strategies in the United States - Energy Institute Seminar (10/21/2019 - 10/21/2019)
- “Understanding the Health, Environmental, and Climate Change Consequences of Different Energy Technology Strategies in the United States”, - Chevron Leaders meeting (10/14/2019 - 10/14/2019)
- “Understanding the Health, Environmental, and Climate Change Consequences of Different Energy Technology Strategies in the United States”, - Rice University (9/26/2019 - 9/26/2019)
- “Understanding the Health, Environmental, and Climate Change Consequences of Different Energy Technology Strategies in the United States”, - Energy @ Stanford and SLAC
- “The health, environmental and climate change effect of energy intervention” - University of Pittsburgh at Greensburg (4/16/2019 - 4/16/2019)
- “Sustainability: Where Engineering Meets Behavioral Science”, - Mascaro Environmental Sustainability Conference, (4/7/2019 - 4/9/2019)
- “Health, environmental, and climate change consequences of different interventions in the U.S. Power Sector”, - Oak Ridge Annual Meeting of the Council for Sponsoring Institutions (ORAU) (3/5/2019 - 3/5/2019)
- “Energy, Climate Change, & Air Quality”, - Encontros da Ciência
- “Energy Demand”, - IIASA & RITE Workshop in Nara (9/25/2018 - 9/27/2018)
- Climate, health and environmental consequences of climate change mitigation interventions in the U.S. electric grid - Imperial University (6/29/2018 - 6/29/2018)
- “Understanding the effects of different interventions in the U.S. Power Sector - ETH Academy on Sustainability and Technology (6/1/2017 - 6/1/2017)
- “De-carbonization of the U.S. electricity sector” - CMU Energy Week Panel (3/31/2017 - 3/31/2017)
- “A presentation of the Climate and Energy Decision Research”, (3/29/2017 - 3/29/2017)

- “Achieving Deep Carbon Reductions: Paths for Pennsylvania’s Electricity Future” - Pennsylvania Environmental Council meeting (3/15/2017 - 3/15/2017)
- “Understanding costs, benefits and environmental justice issues when pursuing different interventions in the US electric system,” - Energy and Resources Engineering Department
- “Combining social science research and energy systems approaches: what can we learn about energy efficiency rebound effects,” - Colloquia for the Center for Energy Policy and Economics (12/16/2016 - 12/16/2016)
- “Understanding costs, benefits and environmental justice issues when pursuing different interventions in the US electric system” - Colloquia for the Institute of Science, Technology and Policy (12/13/2016 - 12/13/2016)
- “Energy efficiency rebound effects,” - Behavioral Colloquium (12/16/2016)
- “Understanding the health, environmental and climate change benefits from interventions in the US electricity grid,” - Program in Science, Technology, and Environmental Policy (STEP) (12/5/2016)
- “Location-specific costs and benefits of rooftop solar photovoltaic,” - iTeam Seminar at Carnegie Mellon University (12/6/2016)
- “Health, environmental and climate change effects of interventions in the US electric grid,” - UC San Diego (10/26/2016)
- “Health, environmental and climate change effects of interventions in the US electric grid,” - Federation of American Scientists (FAS) 70th Year Anniversary Symposium and Gala (9/26/2016)
- “Understanding health, environmental and climate trade-offs and co-benefits in climate change mitigation strategies for the power sector and transportation,” - UC Irvine (9/21/2016)
- “Understanding health, environmental and climate trade-offs and co-benefits in climate change mitigation strategies for the power sector and transportation,” - UC Berkeley (9/12/2016)
- “Getting near zero: decarbonizing the last 20%” - Aspen Global Change Institute (8/5/2016)
- 29. “Understanding the uncertainties in consequences of climate change for the United States power sector infrastructure when considering a realistic mitigation pace and adaptation needs,” - ETH (5/30/2016)
- “Overview of CEDM work” - First Steinbrenner Annual Meeting (4/22/2016)
- “Perceived trade-offs in greenhouse cases and criteria air pollutant electricity portfolios” - The Electricity Conference (4/21/2016)
- “Energy pathways, policies and decisions” - Andy Talk at the First Energy Week (3/14/2016)
- “What can we learn about energy efficiency rebound effects?” - Leeds University (11/11/2015)
- “Understanding the health, environmental and climate change damages from interventions in the US electricity grid,” - Wayne State University (10/8/2015)
- “Energy efficiency and the rebound effect” - EMF Climate Change Impacts and Integrated Assessment (7/23/2015)
- “De-carbonizing the electricity sector in the United States: what big data analytics can tell us about sustainable transitions,” - EMF Climate Change Impacts and Integrated Assessment (7/23/2015)
- “Energy innovation for climate change: systems approaches and societal responses” - Our Common Future Under Climate Change International Scientific Conference (7/10/2015)
- “Consumer choices of lighting products and the feasibility of DC circuits for lighting” - SPARC International Lighting Event (5/28/2015)
- “The benefits and costs of pushing renewables,” - 2015 Austin Electricity Conference (4/2015)
- “Behavior first: powering up innovation by putting people at the center of program design and strategy” - Emerging Technologies Summit (10/21/2014)
- “Keep it simple to keep it cool: improving projections in energy demand” - IRGC workshop on “Improving Demand Projections” (10/14/2014)
- “China energy innovation,” - Tianjin University (9/13/2014)
- “Interdisciplinary research in energy efficiency and climate change - Power Lunch Seminar at Duke University (2/28/2014)
- Trade-offs in climate mitigation strategies: assessing the regional variations in the health, environmental, and climate benefits of wind and solar generation across the US,” - Nicholas School for the Environment, Duke University (2/28/2014)
- “Assessing the regional variations in the health, environmental, and climate benefits of wind and solar generation across the United States,” - the IEEE Women in Engineering seminar series (2/12/2014)
- “The need to account for uncertainty,” - CRAG-IRGC Symposium (11/21/2013)
- 49. “Assessing the regional variations in the health, environmental, and climate benefits of wind and solar generation across the United States / Learning curves for energy technologies,” - NETL (6/12/2013)
- “Assessing the regional variations in the health, environmental, and climate benefits of wind and solar generation across the United States,” - Iniciativa Ambiente, Instituto Superior Técnico (5/28/2013)

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- “Assessing the regional variations in the health, environmental, and climate benefits of wind and solar generation across the United States,” - Coimbra University (5/27/2013)
 - “Research on energy efficient lighting: understanding the engineer-economics aspects, consumer perceptions of light and color and consumer decision-making models,” - Golisano Institute for Sustainability, Rochester Institute of Technology (5/1/2013)
 - “Assessing the regional variations in the health, environmental, and climate benefits of wind and solar generation across the United States,” - Conference on Mathematics of Energy and Climate Change (3/26/2013)
 - “Energy efficiency supply curves” - Advanced School on Mathematics of Energy and Climate Change (3/28/2013)
 - “Assessing the regional variations in the health, environmental, and climate benefits of wind and solar generation across the United States,” - Rutgers Energy Institute (REI) Seminar Series, Rutgers University (February 9, 2013)
 - “Reducing CO2 emissions: technology, uncertainty, decision making and consumer behavior” - Energy & Resources Group at University of California Berkeley and the Lawrence Berkeley National Laboratory (10/31/2012)
 - “Research on energy efficient lighting: understanding the engineer-economics aspects, consumer perceptions of light and color and consumer decision-making models,” - Center for Research in Environmental Decisions (CRED) (4/26/2012)
 - “The Importance of Climate Data for Energy Efficiency Investments” - Asian Pacific Economic Cooperation (APEC) Climate Symposium 2011 (10/17/2011)
 - “Learning curves and wind diffusion for wind technology in the European Union” - ICCG and ICARUS project (5/20/2011)
 - “A transition to solid state lighting” - Faculdade de Engenharia do Porto (FEUP) at Porto University (5/5/2010)
 - “An engineering-economic analysis of white light-emitting diodes for general illumination for the US residential and commercial sectors,” - Environmental Energy Technologies Division Seminars (2/15/2008)
 - “Realistic energy efficiency supply curves for the US residential sector,” - Climate Decision Making Center Seminar Series, CMU (2/5/2008)
 - “Decarbonizing electricity/electricity transition” - Our Common Future Under Climate Change International Scientific Conference (7/9/2015)
 - Invited panel presentation and discussion for Engineering the Anthropocene - Engineering the Anthropocene (March 5, 2020 - March 5, 2020)
 - “Understanding the health and climate change effects of energy technologies in the United States” - Department of Civil and Environmental Engineering, UC Berkeley (February 28, 2020 - February 28, 2020)
 - “Understanding the health and climate change effects of energy technologies in the United States” - Santa Fé Institute workshop on New Mexico Decarbonization, Invited Talk, Santa Fe Institute (February 27, 2020 - February 27, 2020)