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ENERGY AND ENVIRONMENTAL ECONOMICS, INC.

San Francisco, CA

Associate Director

Mr. Landsman joined E3 in 2021 to support E3's Climate Pathways and Electrification group. At E3, Mr. Landsman works primarily on building electrification and decarbonization, from a technical, policy and economic lens. Mr. Landsman has developed a number of models to forecast heat pump adoption, on both a regional and national scale, as well as help cities and states understand the consumer and utility impacts of building electrification. Mr. Landsman also does work in campus decarbonization, helping universities achieve their net zero emissions targets.

Prior to joining E3, Mr. Landsman worked at the MEP engineering firm, Integral Group, leading the Building Performance team, with a focus on energy and carbon modeling, policy and guideline development, and demand forecasting. He has extensive experience with building-scale electrification and decarbonization. Mr. Landsman holds an M.S. in Architecture, Building Science, and Sustainability from the University of California, Berkeley and a B.S. in Civil Engineering from Cornell University.

Recent E3 projects include:

City of Palo Alto Utilities, Citywide Electrification Funding & Financing Analysis (2024). Project manager, evaluation of community cost to electrify building and transportation sectors in Palo Alto, and study of potential funding and financing pathways to close the cost gap.

Confidential Utility, Targeted Electrification (2024). Project manager, assessment of the societal and customer cost-effectiveness of targeted electrification and gas decommissioning on a census tract basis.

Bay Area Air Quality Management District, Building Appliance Rules Support (2024). Project manager, support BAAQMD in understanding customer cost implications of a Zero NOx Standard, considering both upfront costs and bill impacts.

California Energy Commission, Targeted Gas Decommissioning (2023). Technical Lead, analysis of the societal, ratepayer and customer cost-effectiveness of targeted electrification and gas decommissioning for pilot sites in northern California.

Confidential Utility, Load Forecast (2023). Technical Lead, development of comprehensive tool for confidential utility to determine hourly electric and gas load forecasts under varying scenarios of electrification.

New York City Office of Climate & Environmental Justice, NYC Long Term Energy Plan (2022). Project manager, Study the citywide cost gap and customer bill impacts associated with building electrification of NYC's stock of rent-stabilized unsubsidized affordable housing.

National Parks of Lakes Superior Foundation, Park Decarbonization Analysis (2022). Project supervisor, evaluation of the different demand-side and supply-side measures to fully decarbonize the national parks of Lake Superior buildings and vehicle fleet.

Confidential OEM, Building Decarbonization Dashboard (2022). Project manager, creation of tool to evaluate cost and carbon impacts of electrifying buildings across the United States, helping jurisdictions to demonstrate value proposition and help implement electrification policy.

Confidential OEM, Heat Pump National Electrification Analysis (2021). Technical lead, development of an adoption model for national heat pump market, capturing policy and economic drivers.

Washington State Department of Commerce, Consumer-Owned Utilities Building Electrification (2022). Technical lead, evaluation of the financial impacts of building end-use fuel conversion on consumer-owned electric utilities and their customers.

Maryland Commission on Climate Change, Maryland Building Decarbonization Study (2021). Analyst, assessment of building decarbonization scenarios for the state of Maryland, including consumer and utility economic impacts.

NYSERDA, New York Building Electrification Roadmap (2021). Analyst, development of an adoption model for New York heat pump market, capturing policy and economic drivers.

California Energy Commission, 2025 Codes & Standards Support (2022). Project manager, production of TDV and source energy metrics for the 2025 Title 24 Code Cycle.

University of Hawaii, Manoa, Strategic Energy Master Plan (2022). Project manager, analysis of the UH Manoa costs required to decarbonize campus loads, evaluating 4 bookend decarbonization scenarios.

University of California San Diego, Campus Decarbonization Analysis (2021). Project manager, evaluation of decarbonization scenarios for UCSD campus, and cost-benefit analysis of expanded energy storage.

California Air Resource Board, CARB Scoping Plan 2022 (2021). Analyst, generation of California heat pump market projections for PATHWAYS model.

INTEGRAL GROUP Oakland, CA 2016-2021

Team Leader, Building Performance Team

- o Directed the Building Performance Team, including business development, resource planning, quality control, technical oversight, project management, and mentorship of junior staff
- o Frequently executed zero net energy (ZNE) modeling, code compliance modeling, and LEED modeling for over 2 million sq ft of construction, including lab, office, retail, multifamily res, hotel, government, and higher education
- Created custom tools for electrical and thermal demand forecasting across large building stocks and campuses
- o Developed interactive tools for a prominent tech company to optimize and assess the performance of district energy systems, renewables, and batteries to maximize carbon and cost savings for a large building portfolio
- Designed and generated an interactive tool for the University of California to evaluate early-stage new construction projects for energy consumption, utility costs, and carbon emissions
- Assessed the energy, financial, and social implications of proposed changes to the California energy code, Title 24-2019, as part of the Code and Standards Enhancement (CASE) team
- Conducted study of essential envelope and HVAC technologies for achieving zero net energy, as part of the EPIC ZNE Research Roadmap, funded by the California Energy Commission
- o Directed study on feasibility of zero net energy affordable housing in the Bay Area, identifying key energy and load reduction strategies, funded by Pacific Gas & Electric

- Developed guidelines and life cycle cost analysis for Zero Net Energy building design in the state of Massachusetts, in partnership with the United State Green Building Council
- Assessed the potential of passive design strategies to abate heat and maintain thermal comfort in public schools across the state of Hawaii, funded by the Hawaii Department of Education

CENTER FOR THE BUILT ENVIRONMENT

Researcher

Berkeley, CA August 2014 – August 2016

- Evaluated "best practice" passive design strategies used in India including natural ventilation, night cooling, solar chimneys, evaporative cooling, and cavity walls by analyzing data collected from residential and commercial buildings for the Center for Building Energy Research and Development (CBERD)
- Examined comfort responses in "business as usual" versus "energy efficient" buildings in India's five key climate zones by administering field studies, comprising of surveys and measurements

Education

University of California, Berkeley
M.S., Architecture, Building Science, and Sustainability

Berkeley, CA 2016

Cornell University College of Engineering B.S., Civil Engineering

Ithaca, NY 2014

<u>Publications</u>

1. Jared Landsman, Gail Brager, Mona Doctor-Pingel (2018) "Performance, prediction, optimization, and user behavior of night ventilation," Energy and Buildings.

Public Presentations

- 1. Debunking the Myths of Hybrid Heat Pumps, ACEEE Hot Air & Hot Water Forum, 2024.
- 2. Title 24 Lifecycle Cost & Source Energy Metrics, CalBEM, 2022.
- 3. Electrification of the Built Environment, AIA COTE Webinar, November 2020.
- 4. Batteries & Electrification: The Key to Unlocking Decarbonization, Integral Group Webinar, May 2020.
- 5. Photovoltaic and Battery Bank Optimization for District Scale Systems, Getting to Zero Forum, October 2019.
- 6. Natural Ventilation Modeling Methodology, ASHRAE SimBuild Conference, September 2019.

- 7. Changing California Code: Finding the Next Savings Opportunities, ASHRAE Bldg Performance Analysis Conference, September 2018.
- 8. Strategies for Passive Survivability in Existing Schools, ASHRAE SimBuild Conference, September 2017.

Industry Affiliations

- o International Building Performance Simulation Association, SFBA Board Member, 3 years.
- o LEED Environmental Quality Technical Advisory Group, Member, 3 years.
- o ASHRAE, member, 5 years.