Fangxing Liu

44 Montgomery Street, Suite 1500, San Francisco, CA 94104
fangxing.liu@ethree.com

ENERGY AND ENVIRONMENTAL ECONOMICS, INC. San Francisco, CA
Managing Consultant

Ms. Liu provides modeling and analysis with a focus on electrification and distributed energy resources. She has worked on several electrification projects examining the benefits and costs of zonal electrification as a means to help transition natural gas systems and electrify buildings. She also leads E3's DER valuation model, RESTORE, to assess revenues for a variety of standalone and hybrid storage projects for investors in CAISO and ERCOT. She is a key contributor to E3's avoided cost analysis including E3's longstanding work on the Avoided Cost Calculator (ACC) for the California Public Utilities Commission, distributed energy resource valuation framework in Illinois, and avoided cost testimony in the Northwest.

Ms. Liu previously worked as a utilities engineer at the Public Advocates Office of the California Public Utilities Commission, developing policy strategies for microgrids, DER integration and aggregation, utility deferral framework, and DER interconnection. Ms. Liu completed her master's degree in Civil and Environmental Engineering from UC Berkeley and received her bachelor's degree in Civil and Environmental Engineering from the University of Illinois at Urbana-Champaign.

Select E3 projects include:

Long-term Renewable Procurement Plan, Illinois Power Agency (2025 – ongoing). Led the update of Illinois's Renewable Energy Credit (REC) pricing model and Renewable Portfolio Standard (RPS) budget model. Both tools are critical to supporting the state's long-term renewable energy planning and achieving its clean energy goals.

Title 24 Building Standards, California Energy Commission (2024 – ongoing). Managed the development of Long-term System Costs (LSC) for the most recent cycle of California's Title 24 Building Standards. LSC factors are used to evaluate lifecycle cost effectiveness of proposed code measures, within the context of California's forecasted energy landscape.

Avoided Cost Calculator, California Public Utilities Commissions (2021 – ongoing). Led model development of a new tool E3 developed for the ACC to integrate calculations of greenhouse gas emissions and capacity avoided costs, updating the fundamental revenue streams for DERs. Model development improved on E3's established ACC model, introducing an updated approach to calculate and improve avoided costs analysis. Starting in 2023, she became technical lead for many avoided cost work streams.

Storage Revenue Modeling for Confidential Storage Developers (2021 – ongoing). Project Manager and RESTORE optimization modeler for multiple projects examining storage revenue opportunities for investors and developers in ERCOT and CAISO. Applies and communicates knowledge of storage operation and optimization.

Targeted Electrification and Gas Decommissioning, California Energy Commission (2021-2023). Led model development and contributed report writing for an E3 study. The report developed a cost-benefit methodology for targeted electrification paired with targeted gas decommissioning, ultimately finding broad cost effectiveness for zonal electrification when paired with the decommissioning of parts of the natural gas system.

CALIFORNIA PUBLIC UTILITIES COMMISSION San Francisco, CA
Utilities Engineer, Public Advocates Office 2020-2021

- Prepared comments and reports on commercializing microgrids and transitioning microgrids away from non-renewable energy resources
- Recommended processes to use distributed energy resources to defer electric distribution upgrades
- Researched technical issues and policy mechanisms to integrate and aggregate distributed energy resources

UNIVERSITY OF CALIFORNIA, BERKELEY Berkeley, CA
Graduate Student Instructor January 2020 – May 2020

- Taught students to use quantitative optimization tools (e.g. linear programming and nonlinear programming) and MATLAB for planning and managing large-scale civil and environmental systems

ENVIRONMENTAL INTEGRITY PROJECT Washington, DC
Research Intern June 2019 – August 2019

- Assisted development of AshTracker, a database recording ground water contamination near coal disposal areas from more than 250 coal-burning power plants in U.S.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN Urbana, IL
Research Assistant 2018 - 2019

- Organized and analyzed measurements of the sources, energy use, and environmental impacts of traditional biomass stoves in rural China

Education

University of California, Berkeley Berkeley, CA
M.S., Civil and Environmental Engineering 2020

University of Illinois at Urbana-Champaign Urbana, IL
B.S., Civil and Environmental Engineering with minor in Business 2019