Karl Walter

44 Montgomery Street, Suite 1500, San Francisco, CA 94104
karl.walter@ethree.com

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

Mr. Walter is a member of E3's Integrated System Planning practice area where he has supported utilities, governments, and industry players in understanding how energy systems will transform under deep decarbonization. He focuses on resource adequacy and capacity expansion planning. He has advanced model capabilities as a developer on both E3's Resource Adequacy Model (RECAP) and Renewable Energy Solutions Model (RESOLVE) and has leveraged those models to analyze system reliability, forecast resource capacity value, and assess the potential value of emerging technologies.

Prior to joining E3, Mr. Walter worked at Guidehouse (fka Navigant), where he co-authored several technical reports on clean demand-side technologies – smart buildings, virtual power plants, low-GWP refrigerants, plug loads, and IoT devices. He also built packages and led impact evaluations in R for energy efficiency evaluations and helped design and create the Fuel Substitution Scenario Analysis Tool (FSSAT) for the CEC to assess building decarbonization options in California. Mr. Walter completed an M.S. in CEE - Systems from UC Berkeley and a B.S. in Energy Engineering also from UC Berkeley.

Select E3 projects include:

California Energy Commission, EPC-19-056, Assessing the Value of Long Duration Storage (2022-2023). Investigated the reliability contribution of LDES under varying future scenarios and assessed the cost effectiveness and potential grid value of LDES under a range of policy conditions for an E3 project investigating the role of long duration energy storage in achieving California's energy and climate goals.

Oregon Public Utilities Commission, Capacity Accreditation Analysis (2022-2023). Assessed utility submissions for assessing capacity value and provided expertise on the shortcomings and strengths of utility capacity accreditation methodologies. Helped prepare slides and analysis regarding accreditation of capacity for solar and storage QFs. Attended PUC public meeting and addressed questions from stakeholders.

Resource Adequacy in the Desert Southwest (2021-2022). Analyst helping analytical tasks, running modeling, completing QA/QC, investigating results, preparing slides, and coauthoring sections of E3's final report. The study sought to (1) identify any immediate risks to reliability in the Desert Southwest region, (2) define durable best practices for resource adequacy planning, and (3) utilize these techniques to evaluate the region's readiness to meet resource adequacy challenges.

GUIDEHOUSE CONSULTING San Francisco, CA
Consultant July 2018 – June 2021

- Co-created R-based Fuel Substitution Scenario Planning Tool for the California Energy Commission (CEC). This tool will enable building decarbonization efforts by outputting the demand, emission, and cost impacts of different electrification scenarios.

- Led R-based analyses and impact evaluation reports for five energy efficiency programs with 24,250 MWh of total savings.
- Co-authored technical research reports to guide California Energy Commission's investments in emerging technologies such as low-GWP refrigerants and smart buildings. A $13.5 million CEC solicitation was informed by our report on refrigerants.
- Designed market forecast models for Navigant Research reports on virtual power plants, microgrids, and modular microgrids.

ENERGY, CONTROLS, AND APPLICATIONS LAB (ECAL), UC BERKELEY Berkeley, CA
Undergraduate Researcher January 2018-May 2018

- Reviewed fast charging literature to identify new modeling and optimization techniques which yielded novel results.

CARBON180 Oakland, CA
Intern June 2016 – August 2016

- Headed biochar research: interviewed 15 industry experts and developed introductory literature and policy recommendations. Presented findings at Cal Energy Corps Symposium.

Education

University of California, Berkeley Berkeley, CA
M.S., Systems Engineering in Civil and Environmental Engineering May 2021

University of California, Berkeley Berkeley, CA
B.S., Energy Engineering, Minor in Public Policy May 2018

Reports

Olson, A., G. Gangelhoff, A. Fratto, H. Felicien, **K. Walter**. April 2023. *Analysis of Hourly & Annual GHG Emissions: Accounting for Hydrogen Production*. Energy and Environmental Economics, American Council on Renewable Energy (ACORE).

Olson, A., E. Cutter, L. Bertrand, V. Venugopal, S. Spencer, **K. Walter**, A. Gold-Parker. March 2023. *Rate Design for the Energy Transition: Getting the Most Out of Flexible Loads on a Changing Grid*. Energy and Environmental Economics, Energy Systems Integration Group (ESIG).

Schlag, N., A. Au, **K. Walter**, R. Li, R. Go, T. Wallace, L. Alagappan, A. Olson. February 2022. *Resource Adequacy in the Desert Southwest*. Energy and Environmental Economics.

Gangelhoff, G., T. Wallace, H. Jiang, **K. Walter**, H. Felicien, A. Burdick, A. Olson. September 2021. *Review of Puget Sound Energy Effective Load Carrying Capability Methodology*. Energy and Environmental Economics.

Mehrhoff, J., P. Asmus, H. Lorah, **K. Walter**. Q2 2020. *Virtual Power Plant Overview: Flexibility Market Analysis and Forecasts: 2020-2029.* Guidehouse Insights.

Goetzler, W., D. Ghosh, B. Feldman, J. Mehrhoff, P. Thakur, **K. Walter**. Q1 2020. *Smart Building Ecosystem: Current Status and Future Opportunities.* Navigant prepared for California Energy Commission.

Goetzler, W., J. Young, G. Parzygnot, **K. Walter**. Q4 2019. *RD&D Opportunities to Reduce Plug Load Energy Consumptions.* Navigant prepared for California Energy Commission.

Feldman, B., J. Mehrhoff, **K. Walter**, R. Taylor, H. Lorah. Q3 2019. *Integrated DER Programs for Utilities and Energy Suppliers: Drivers, Barriers, Case Studies, and Market Forecasts.* Navigant Research.

Goetzler, W., J. Young, P. Thakur, **K. Walter**. Q2 2019. *RD&D Opportunities to Advance Low Global Warming Potential Refrigerants and Non-Vapor-Compression Technologies.* Navigant prepared for

Presentations

Young, J., **K. Walter**. 2020. "PNNL VOLTTRON Market Assessment." Guidehouse prepared for PNNL.

Walter, K. 2018. "RecoverE: Smart Drain Water Heat Recovery." BERC Energy Summit. UC Berkeley.

Walter, K. 2017. "Electric Vehicle Cost Recovery by Utilities." Navigant.