

**ENERGY AND ENVIRONMENTAL ECONOMICS, INC.**

San Francisco, CA

*Partner*

Mr. Cutter leads E3's practice area enabling distributed resources and electric vehicles to serve as valuable resources for the electric grid. He manages E3's team working on vehicle grid integration with utilities, regulators, automakers and electric vehicle service providers to develop strategic roadmaps, perform cost-benefit analysis and develop business strategies. Building on decades of experience in distributed resources, Mr. Cutter is also leading work on valuation of energy storage and flexible loads, with an emphasis on distribution planning. Prior to joining E3, he worked as an independent consultant in water resources for seven years, and at PG&E for ten years. Some of the many projects Mr. Cutter has led include:

- Developing transportation electrification strategies for utilities in California, Arizona, the Pacific Northwest, Ohio, Massachusetts, and Quebec, and winning management and regulatory approval supported by robust modeling of EV charging behavior and cost-benefit analysis.
- Quantifying the value of distribution-aware vehicle-to-grid (V2G) EV services for local distribution and wholesale energy market benefits for Electric Power Research Institute (EPRI) and Nuvve. Leading the team developing E3's EV Grid Impacts Model optimizing charging behavior for 30+ vehicle types and customer segments.
- Leading development of E3's Integrated Distributed Energy Resources (IDER) model to develop the business case for targeted deployment of solar, storage, EVs and other DER. Engaged with numerous utilities and project developers to evaluate proposed storage projects in competitive solicitations.
- Leading E3's advanced cost-benefit analysis for DERs and improved valuation of DERs to support key strategic decision-making regarding impacts on rates, competitiveness, and electrification policy.
- Leading California Solar Initiative (CSI) RD&D \$1.8 million PV integrated storage project, deploying Sunverge systems for SMUD to provide local distribution and customer benefits. Analysis with E3's Integrated Distributed Energy Resources (IDER) model showed benefits increased by 2.5x when storage is dispatched for utility and customer benefits.
- Developing and updating robust models since 2009 calculating avoided costs and reporting on cost-effectiveness of energy efficiency, demand response, and distributed generation programs for four investor-owned and 34 municipal utilities in California.

**100<sup>TH</sup> MERIDIAN**

San Anselmo, CA

*Lead Consultant*

2000-2005

- Developed robust economic and reservoir operations models for FERC re-licensing proceedings
- Developed cost of generation model for California Energy Commission comparing costs for different technology, ownership, financing and operating scenarios

## **PG&E ELECTRIC TRANSMISSION SERVICES**

*Senior Resource Analyst*

San Francisco, CA

1998-1999

- Developed and promoted policy changes before the California Independent System Operator, saving PG&E over \$60 million in annual Reliability Must Run payments; successfully advocated progressive solutions in uncertain regulatory environment

## **PG&E POWER MARKET PLANNING**

*Senior Resource Planner*

San Francisco, CA

1997-1998

- Structured and implemented extensive Energy Trading Risk Management System
- Created and analyzed hedging strategies for energy trading at real-time desk

## **PG&E – VARIOUS**

San Francisco, CA

1989-1997

- Developed and advocated transportation and storage pricing strategies, increasing margins and earning revenues of \$7 million per month from sales of storage and transportation products
- Implemented risk management procedures for valuing embedded options in transportation and storage contracts
- Lead regulatory policy analyst for implementation of capacity brokering for PG&E's intra- and interstate natural gas pipelines

## Education

University of California

*M.B.A., Haas School of Business*

Berkeley, CA

University of California

*M.S., Energy and Water Resources, Energy and Resources Group*

Berkeley, CA

Tufts University

*B.A., Economics and German, Magna Cum Laude*

Medford, MA

## Refereed Publications

1. E. Cutter, B. Haley, J. Hargreaves, J. Williams, "Utility Scale Energy Storage and the Need for Flexible Capacity Metrics", *Applied Energy*, 124 (2014) 274-282.
2. DeBenedictis, A., B. Haley, C.K. Woo, E. Cutter "Operational energy-efficiency improvement of municipal water pumping in California," *Energy*, 53 (2013) 237-243.
3. Cutter, Eric A., C.K. Woo, F. Kahrl, A. Taylor "Maximizing the Value of Responsive Load," *The Electricity Journal*, (2012) 25:7, 6-16.

4. *Cutter, Eric A., Ben Haley, Jim Williams and C.K. Woo, "Cost-effective Water-Energy Nexus: A California Case Study", The Electricity Journal 27 (5) (2014).*