

**ENERGY AND ENVIRONMENTAL ECONOMICS, INC.**

San Francisco, CA

*Director, Distributed Energy Resources*

Mr. Cutter leads E3's practice enabling energy storage, electric vehicles and responsive load to serve as valuable resources for the electric grid. Mr. Cutter manages a team of 8 staff working on 70+ projects with utilities, regulators and technology companies to match distributed energy solutions to their most valuable applications for the customer, grid and environment. Mr. Cutter is currently focused on developing regulatory and business strategies for utility transportation electrification programs quantifying the economic benefits energy storage under high renewable penetration. Prior to joining E3, Mr. Cutter worked as an independent consultant in water resources for seven years and at PG&E for ten years. Some of the many projects that Mr. Cutter has led include:

- Leading development of E3's energy storage dispatch optimization model RESTORE to co-optimize the benefits of targeted deployment of solar, storage, EVs and other DER. Maximizing the value of energy storage in projects for numerous regulators, utilities and project developers.
- Assisting utilities in California, Ohio, the Pacific Northwest and Quebec in formulating, justifying and winning regulatory approval for transportation electrification programs with analysis showing the benefits of EVs for utilities, ratepayers, drivers and society as a whole.
- Supporting regulatory approval of EV charging infrastructure applications for SCE and SDG&E before the California Public Utilities Commission (CPUC) with robust cost-benefit analysis.
- California Energy Commission (CEC) research project with the Electric Power Research Institute (EPRI) providing distribution aware vehicle-to-grid (V2G) EV services for local distribution and wholesale energy market benefits. Leading the team developing E3's EV Grid Impacts Model optimizing charging behavior for 30+ vehicle types and customer segments.
- California Solar Initiative (CSI) RD&D \$1.8 million PV integrated storage project, deploying Sunverge systems for SMUD to provide local distribution and customer sided benefits. Analysis with Integrated Distributed Energy Resources (IDER) model showed increased benefits of 2.5 times when storage is dispatched for utility and customer benefits.
- Lead developer of distributed energy resource management strategies, incentives and business models for the integration of high penetration PV on the UCSD Campus

**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**

San Francisco, CA

*Senior Resource Analyst*

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**

San Francisco, CA

*Senior Resource Planner*

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

Berkeley, CA

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

University of California

Berkeley, CA

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

Tufts University

Medford, MA

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

### Citizenship

United States

### 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. Kahr, 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).