

## SUMMARY

Ms. Wolfe is President of Resero Consulting and has more than 29 years' experience with electric utilities and in the energy industry. She provides expert strategic support to individual clients and works in multi-stakeholder environments performing large studies and policy assessments. She has been responsible for performing market structural analyses; contributing to market designs and performing market power studies. Ms. Wolfe has extensive experience in Western markets and in ERCOT: works with market participants to set strategy in the CAISO and ERCOT markets, evaluated benefits and costs associated with the RTO-West; WestConnect, ERCOT and SPP; developed tariffs and implementation processes for ERCOT and other ISOs. She has represented clients in a number of industry forums, led extended seminars on market design details, is an adept facilitator of diverse stakeholders, and serves as an expert witness on critical wholesale energy matters.

Prior to forming Resero, Ms. Wolfe was a Director with CRA International and a Vice President with its predecessor firm, Tabors Caramanis and Associates, where she directed teams of consultants in the performance of studies and analyses.

Prior to joining Tabors Caramanis & Associates, Ms. Wolfe was a Senior Consultant for Henwood Energy Services Inc. Her work there included quantitative analysis to support strategic decisions about energy purchases and sales, forecasting of future energy prices, and policy support in the California restructuring arena.

Ms. Wolfe worked as a System Scientist at Lawrence Livermore Laboratory, providing quantitative and qualitative support addressing a wide variety of government and private policy issues.

Ms. Wolfe also worked as a Plant Engineer for the Sacramento Municipal Utility District overseeing maintenance and design upgrades for a wide variety of plant electrical distribution and instrument and controls systems, as well as working as a shift technical advisor to the Operations department and holding the role of Senior Licensing Engineer. She holds a Bachelor's degree in Electrical Engineering from the University of California, Davis, and Masters' degrees in Management, and Technology and Policy from the Massachusetts Institute of Technology. Ms. Wolfe is a registered Electrical Engineer in the state of California.

## EDUCATION

Decision Analysis and Dynamic Systems, graduate coursework, Stanford University, 1992-1993.

M.S. in Technology and Policy, Massachusetts Institute of Technology, 1991.

M.S. in Management, Massachusetts Institute of Technology, 1991.

B.S. in Electrical Engineering, University of California, Davis, 1984.

## EXPERIENCE HIGHLIGHTS

President, Resero Consulting, Granite Bay, CA, March 2005 – present. Leads efforts to resolve critical utility industry issues, including executive strategic support, policy advocacy, electric system modeling and analysis, and acting as an expert witness.

Director, Charles River Associates, Granite Bay, CA, Nov 2004 – March 2005. Directed large-scale restructuring policy evaluations, advises clients on critical ISO/RTO matters, including serving as expert witness.

Senior Consultant and Vice President, Tabors Caramanis & Associates, Cambridge, Massachusetts, 1997 – Nov 2004 (acquisition by CRA). Involved in setting restructuring policy and working with market participants in CA, NV and ERCOT; led large-scale cost-benefit studies; performed other modeling analyses.

Senior Consultant, Henwood Energy Services, Inc., Sacramento, California, 1995-1997. Responsible for quantitative analysis to support strategic decisions, and for policy support in the California restructuring arena.

Systems Scientist, Lawrence Livermore National Laboratory, Livermore, California, 1991-1995. Provided quantitative and qualitative support addressing a wide variety of government energy and environmental programs.

Senior Licensing Engineer, Shift Technical Advisor, Plant Engineer, Sacramento Municipal Utility District Rancho Seco Nuclear Generating Station, Sacramento, California, 1982-1989. Provided a wide range of power plant support.

## FIELDS OF EXPERTISE

- Market Structure Design
- Energy Analysis and Modeling
- Market Participation in Restructured Environments
- Multi-Stakeholder Policy Making
- Quantitative Modeling, including decision analysis, risk assessment and simulation
- Power Plant Operations

# MAJOR PROJECTS

## *Electricity Industry Strategy & Restructuring*

Strategic Decision Making: Structure and bring industry knowledge to high-level strategic decisions. Served as consultant to CEO of Valley Electric Association in their strategic decision making regarding renewable buildout, variable resource management and transmission and operating costs in its decisions regarding joining the CAISO; and served as liaison designing a transition mechanism into the CAISO.

Market Redesign Advocacy, Expertise and Support: Have supported clients on strategic and transitional issues, including serving as the Western Power Trading Forum's market redesign consultant. Performed valuation and strategic support to clients through Congestion Revenue Right allocation and auction processes. Developed and led seminars throughout the U.S. on Locational Marginal Pricing and Congestion Revenue Rights. Provided analyses on contract matters related to market redesign.

Litigation Support: Provided testimony, expert litigation support and served as witness on matters ranging from contract interpretation, contract pricing terms under alternative market designs, market participant software valuation, regulatory policy and tariff cost/rate allocation issues.

Cost-Benefit Studies: Project manager for four large-scale, high-profile restructuring cost-benefit studies in SPP, ERCOT, WestConnect, RTO West. Efforts included substantial quantitative and qualitative analysis.

Energy Modeling: Modeled transmission system flows, energy pricing and profitability for cost-benefit studies and market power studies in a restructured environment. Valued expected congestion and losses in locational marginal pricing markets and assisted clients to maximize value of transmission rights. Modeled forward energy prices in restructured environments in the Western US and supported clients on strategy for power plant development, contract renegotiations and other strategic decision-making.

California Wholesale and Retail Settlements and Scheduling Support: Conducted service to evaluate complex ISO bills and represent clients on settlement matters. Represented clients on billing dispute matters.

ERCOT ISO Restructuring Support: Led team to develop draft protocols for filing at the Public Utilities Commission of Texas. Developed draft protocols, and worked with stakeholders to gain consensus and resolve policy issues.

Restructuring Support: Ongoing support for two large market participants to design market rules and infrastructure as part of a Nevada and CA restructuring stakeholder processes. Drafted relevant settlement processes and reached consensus on such with other stakeholders. Wrote RFP for Mountain West ISA major systems and served on vendor selection team. Developed, and proposed retail settlement policies.

### **Power Plant Operations**

Licensing Support: Represented a utility on all aspects of plant operation with the Nuclear Regulatory commission and other regulatory agencies.

Operations Advisor: Served as engineering advisor to power plant operating crews, ensuring nuclear safety and effective operation.

## **PAPERS, PUBLICATIONS, EXPERT SUPPORT AND TESTIMONY**

Wolfe, E., Direct Testimony before the Public Utilities Commission of Texas, February 2016: Docket 45624, on behalf of Southern Cross Transmission LLC and the City of Garland.

Wolfe, E., Expert Report October 2015, Amended Expert Report November 2015, and oral testimony April 2016: Analysis of wind curtailment in contract dispute for wind producer in the Southwest Power Pool market. US District Court, Western Division of Missouri. Kansas City, MO.

Wolfe, E., Oral Testimony and Analysis: International Institute for Conflict Prevention and Resolution, arbitration involving contract dispute for wind producer in the Midcontinent Independent System Operator market. Indianapolis, IN, April 2014.

Wolfe, E., Expert Analysis, April 2013. Analysis in support of FERC California power market investigation. (Report not filed given confidential settlement.)

Wolfe, E., Expert Analysis, 2013. Analysis in support of FERC California power market investigation. (Report not filed; ongoing investigation.)

Wolfe, E., et. al. "Cost Benefit Analysis of Entergy and Cleco Power Joining the SPP RTO", Report to the Federal Energy Regulatory Commission, September 2010.

Wolfe, E., Oral Testimony: Superior Court of the State of California, County of San Diego, California Department of Water Resources v. Sempra Energy Resources. (Case GIC 789291), December 2009.

Wolfe, E. et. al. "Update on the ERCOT Nodal Market Cost-Benefit Analysis," Final Report Presented to Public Utilities Commission of Texas, December 2008.

Wolfe, E., Testimony Expert Report Affidavit, May, 2007. American Arbitration Association involving contract dispute for power purchase agreement in California.

Wolfe, E., Ralph Luciani. Testimony Presented to the State Corporation Commission of the State of Kansas regarding the costs and benefits of the implementation of an Energy Imbalance Service, July 2005.

Wolfe, E., "Barriers to Systems Dynamics Deployment in Business and Policy Making: Lessons Learned through Assessing Electric Utility Restructuring Policy," *Proceedings: Systems Dynamics Society Conference*, Boston, MA, July 2005.

Wolfe, E., Ralph Luciani. Testimony Presented to the Public Service Commission of the State of Arkansas regarding the costs and benefits of the implementation of an Energy Imbalance Service, May 2005.

Wolfe, E. Testimony: Expert Report Affidavit, May, 2005. American Arbitration Association involving contract dispute for power purchase agreement in California.

Wolfe, E. et. al. "Southwest Power Pool Cost-Benefit Analysis," Final Report Presented to the Regional State Committee, April 2005.

Wolfe, E. Testimony: Expert Report Affidavit, February, 2005. Affidavit regarding sellers' choice contract delivery points in CA ISO markets. (Not filed given confidential settlement.)

Wolfe, E. et. al. "Market Restructuring Cost-Benefit Study," Final Report Presented to Electrical Reliability Council of Texas, November 2004.

Wolfe, E. Testimony: Federal Energy Regulatory Commission, Docket No. ER00-565-000, ER00-565-03, November, 2004. Settlement of Turlock Irrigation District's Schedule Coordinator Services agreement with Pacific Gas & Electric regarding the allocation of CA ISO charges.

Wolfe, E. Testimony: Expert Report Affidavit, July, 2004. Expert opinion regarding CA ISO Scheduling and settlement software. (Record sealed due to confidential settlement).

Wolfe, E. Testimony: Federal Energy Regulatory Commission, Docket No. EL00-95-000, -048,-075, et. al., March 20, 2003. Consistency of Coral Power, L.L.C.'s market behavior with CA ISO tariff.

Wolfe, E. et. al. "RTO West Cost-Benefit Study," Final Report Presented to RTO West Filing Utilities, March 11, 2002

Wolfe, E. and Shreedevi Thacker, "Electric Restructuring Brings New Critical Business Requirements," *WorldPower 2002*, February, 2002

Wolfe, E., "ERCOT Summer 2001 Congestion Pricing: Primer, Results, Implications," *Proceedings: Congestion Pricing Conference*, Washington, D.C., November 16, 2001.

Wolfe, E. Testimony: Federal Energy Regulatory Commission, Docket No. ER00-2383-000, May 23, 2000. CA ISO separate "inc" and "dec" pricing and Target Price proposal.

Wolfe, E. Testimony: United States of America Bonneville Power Administration, BPA Docket WP-02, November 1999. Functionalization of Reactive Support.

Banaghan, E., "Market Power Measurement and Mitigation Analysis in the Face of Restructuring," *Proceedings: Energy Market Pricing Conference*, Vail, Colorado, August 10, 1999.

Banaghan, E. A., "California: What's Working and What's Not," *Proceedings: Buying and Selling Electricity in The Western Wholesale Power Market*, The Energy Institute, Las Vegas, Nevada, Summer 1998.

Banaghan, E. A., "California FTRs: The Market Perspective," *Proceedings: Buying and Selling Electricity in The Western Wholesale Power Market*, The Energy Institute, Las Vegas, Nevada, Winter 1998.

Banaghan, E. A., P.E., Testimony: Superior Court of the State of California for the County of Los Angeles, January 1997. QF contract dispute between wind energy producers and Southern California Edison regarding the start of the fixed price capacity payment period.

## PROFESSIONAL DEVELOPMENT, AFFILIATIONS AND AWARDS

Registered Professional Electrical Engineer, California

*Taking Heart in Tough Times*, Joanna and Fran Macy, Hartland, VT. 2008

*The Work that Reconnects*, Joanna Macy, Hartland, VT. 2006

Executive Leadership Program, Institute for Women's Leadership, 2006-2007

Donella Meadows Fellow ([www.sustainabilityinstitute.org/fellows](http://www.sustainabilityinstitute.org/fellows))

Kent Wheatland Memorial Award for outstanding utility industry contribution, 2007

Negotiation and Conflict Resolution, University of California, Davis, 1993.

Licensed Nuclear Reactor Operator (expired)

## CONTACT

Ellen Wolfe  
President, Resero Consulting  
(916) 791-4533  
[ewolfe@resero.com](mailto:ewolfe@resero.com)  
[www.resero.com](http://www.resero.com)