

CARL R. DANNER
BERKELEY RESEARCH GROUP, LLC
2200 Powell Street, Suite 1200
Emeryville, CA 94608

(415) 710-2275
cdanner@thinkbrg.com

EDUCATION

- Ph.D.** Harvard University, Cambridge, MA
Public Policy. Dissertation: *Strategic Management of Public Utility Regulation in An Era of Reform: The Case of Telecommunications*. Committee: John R. Meyer, Robert Leone, and Joseph P. Kalt.
- M.P.P.** Harvard University, Cambridge, MA
Thesis: *The Economics of Visibility and the Policy of Visibility Protection*.
- B.A.** Stanford University, double major in Economics and Political Science (degree awarded with distinction in both fields).

EXPERIENCE

Chief Internal Auditor
California Public Utilities Commission
San Francisco, CA (2014-2018)

Established internal audit function at major state agency. Completed audits included core agency operations and telecommunications and energy public purpose programs involving large sums. Conducted agency-wide risk assessments, involved in agency safety management initiatives.

Director (affiliate), Berkeley Research Group
Emeryville, CA (2010-present, on leave 2014-18)

Focus on the applied economics and finance of firms and industries, and on public policy and government regulation. Continuing consulting practice includes expert testimony, advisory services to executives and counsel, and analysis of issues of significant concern to clients. Served as project manager for comprehensive study of the potential application of new nuclear power technology in China: "Social and Macroeconomic Benefits of the Traveling Wave Reactor." Report included modeling of fuel cycle economics and mass flows and balances; development of nationwide reactor fleets using alternative nuclear technologies through several decades; proliferation impacts and concerns; effects on national energy security; potential safety, health and environmental impacts; and

potential macroeconomic benefits from nuclear technology research and development, deployment and export sales (principal author of sections on safety, health and the environment; and energy security).

Assisted David J. Teece in preparation of a two hour presentation on strategic management to an audience of all governors of Russia's regions, hosted by the Office of the President in Moscow. Assisted in the preparation of a strategic plan for the development of Sberbank Corporate University, an institution being created by Russia's largest bank to help transform its corporate culture, personnel quality and operations by educating 15,000 employees annually. Some other recent projects included analysis of price discovery options for a regional wholesale beef market; analysis of potential consumer impacts due to proposed restrictions on the use of certain rodenticide products, and a detailed cost analysis of a northern European transportation service.

Director, LECG LLC
Consultant, Wilk & Associates Inc.
San Francisco, CA (1992-2010)

Provided expert consulting and coordinated services of other directors and staff of LECG. Emphasis on energy, telecommunications, water, and other network industries. (Wilk & Associates merged into LECG in 1999.)

Provided advisory services on regulatory, legislative and public policy issues. Served in "sounding board" capacity to evaluate client initiatives from the perspective of a senior governmental decision maker. Analyzed technical issues of economics, finance and statistics. Supported public relations and corporate communications efforts, helped prepare client regulatory filings and reports. Investigated allegations of problematic organizational performance by utilities on regulatory issues. Among other subjects, advisory work included assistance with applications to build new major electricity transmission lines; impacts of electricity restructuring and utility recovery from resulting bankruptcy; strategic study of retail electricity rate structures vis a vis solar generation as a customer option; assessment of roles for utilities as electricity retailers in a restructured market environment; and risks and opportunities related to community choice aggregation, including "green" power portfolios.

Extensive experience in litigation settings, including strategic advice to counsel and review of draft briefs and expert reports. Typical client interactions at officer level up to CEO, and with attorneys and external affairs staff. Client relationships and assignments fulfilled in many states, and nationwide.

Among others, testimony topics have included energy economics and regulation; utility merger public interest and competition analysis; water company valuation and related regulatory issues; cost of capital for utility investments whose capital recovery is deferred (AFUDC); economic benefits of a relationship between the government and a military contractor (CERCLA cost allocation); universal service, lifeline, and the economics of telephone service line extensions; assessment of a public agency's financial viability; the effects of government regulation on private investment incentives; economic principles of costing and pricing; incentive regulation; and the economic and public interest analysis of telecommunications pricing reform and service reclassification. (Full testimony citations are provided below.)

**Commissioner's Advisor, California Public Utilities Commission
San Francisco, CA (1987-92)**

Senior Advisor and Chief of Staff to former CPUC President and Commissioner G. Mitchell Wilk. Lead Commission advisor on telecommunications issues; also responsible for transportation, water, and selected energy matters. Helped develop policy, manage proceedings and cases, direct efforts of staff, draft and revise Commission decisions. Central involvement in successful reform initiatives in local exchange, cellular, long distance and pay phone sectors of telecommunications. Advised on legislative strategy and positions. Made numerous public appearances representing the agency, including testimony before legislative oversight committees. Served as media contact on many issues, helped prepare and edit press releases.

**Staff Analyst, Policy and Planning Division, California Public Utilities Commission
(1982-87)**

Analyzed regulatory policies and assisted in agency strategic planning. Co-author of several agency reports to the legislature regarding telecommunications issues. Developed computer program to compare CPUC standard offers for electricity purchase from independent generators to levelized fixed-price alternatives to help meet project developers' needs for stable cash flows to support financing. Studied determinants of demand for water usage by utility customers, and impacts of CPUC conservation-oriented water pricing on consumption and utility financial results. Advised Executive Director on strategic planning opportunities for the agency and on effective use of computers and office automation. Member of team that designed agency reorganization that created the Division of Ratepayer Advocates to clarify staff advocacy roles, responsible for budgeting and personnel issues.

**Consultant, Citizens Utility Board
Chicago, Illinois (1985-87)**

Consultant to consumer group on issues of energy utility diversification, financing of nuclear power "construction work in progress," and realignment of local telephone usage rates.

University Instructor (various dates)

Co-taught graduate courses in Government Regulation of Business (Kennedy School), and Telecommunications Regulation (Golden Gate University, San Francisco). Head teaching assistant for graduate courses in microeconomics, econometrics, and managerial economics (Kennedy School). Guest lecturer in graduate and executive programs at U.C. Berkeley Haas Graduate School of Business, U.S.C. Graduate School of Management, U.C. Berkeley Sloan Summer Institute, University of San Francisco, the Naval Postgraduate School (Monterey), and the Michigan State University Institute of Public Utilities ("Camp NARUC").

TESTIMONY / FILED COMMENTS

Federal Communications Commission

- Joint letter to the President urging a rethinking of FCC Triennial Review unbundling policies in light of the third judicial remand of its rules (with 21 other economists and former regulators, 2004).
- Joint statement of 39 economists on the proper regulatory treatment of broadband internet access services (CC docket 02-33, 2002).
- In Section 706 Notice of Proposed Rulemaking, written comments addressing FCC proposal to require separate subsidiaries for local telephone companies to avoid application of unbundling rules to advanced services (with G. Mitchell Wilk, 1998).

Federal Energy Regulatory Commission

- Written comments addressing implications of the 2010 Horizontal Merger Guidelines for the criteria by which FERC reviews proposed mergers (with Henry J. Kahwaty, Keith Reuter, and Cleve B. Tyler, FERC docket RM11-14-000, 2011).

Federal District Court, Northern District of Alabama

- Expert report and deposition on the application of a surcharge to certain telecommunications services to fund a 911 emergency services district, and on the overall sufficiency of the district's funding. (Madison County Communications District v. BellSouth Telecommunications, Inc., 2007).

Federal District Court, Northern District of California

- Testimony at trial before the Honorable Jeremy Fogel on valuation of a privately-owned water utility, and regulatory policies applicable to that company (United States v. Alisal Water Co., 2001). Testimony was noted in Ninth Circuit opinion on appeal.

Federal District Court, Southern District of California

- In a CERCLA matter related to environmental contamination of a manufacturing site, expert report and deposition addressing economic benefits arising from a relationship of several decades between a military contractor and the United States Government (TDY Holdings, LLC and TDY Industries, Inc. v. The United States of America, et. al., 2009).
- Designated as expert and deposed on CPUC regulation of wireless companies in class action alleging collusive price-setting by the wireless industry. (Michael A. Lobatz et al. v. Airtouch Cellular Company et. al., 1996).

Federal District Court, Northern District of Georgia

- Expert report and deposition addressing expected construction times for certain proposed power plants, the temporary nature of the California energy crisis, and the economic content of a valuation study of certain purchased power plants. (MC Asset Recovery, LLC v. The Southern Company, 2007).

California Superior Court, Orange County

- Designated as expert and deposed on economic indicators of competitive behavior by duopoly wireless service providers. (Goldenwest Cellular Company v. Los Angeles Cellular Telephone Company, 1995).

California Superior Court, Sacramento County

- Declaration as to whether a company providing telephone service to prison inmates needed to be certified as a public utility under applicable California regulations (North American Intelcom, Inc. v. Folsom Return to Custody, et al., 1995).

California Legislature

- Oral testimony before Assembly Committee on Utilities and Commerce regarding discriminatory rates charged by a municipal water district (1996).
- Oral testimony before Senate and Assembly oversight committees on telecommunications issues, on behalf of the CPUC (1987, 1990).

California Public Utilities Commission

- Testimony on the financial nature and appropriate ratemaking treatment of proceeds from investments by small telephone companies in the stock of the Rural Telephone Bank. Report co-authored with Dr. William Hamm. (2009).
- Written testimony on the appropriate carrying cost for balances in AFUDC accounts (allowance for funds used during construction), and on the benefits of CWIP (construction work in progress) ratemaking treatment for water utility investments (2007).
- Written testimony and cross examination on the statistical reliability of an estimate of the impact on a utility's cost of capital of AFUDC treatment of a nuclear power plant (1984).
- Written testimony and cross examination on the necessary level of oil inventory for an electric utility (1983).

California Department of Pesticide Regulation

- Expert report providing an economic analysis of a proposal to restrict the availability of second generation rodenticides. Report co-authored with Dr. William Hamm. (2013).

Colorado Public Utilities Commission

- Declaration providing a public interest analysis of a proposed merger between Verizon and MCI (2005).

East Bay Municipal Water District

- Presentation to the Board of Directors on financial risks created for the District by a mismatch between the economics of its operations, and its rate design policies (March, 2009).

- Report on water district marginal costs and rate design options prepared pro bono for a consumer group opposing price discrimination in water rates (1995).

Florida Public Service Commission

- Written testimony on the economics of lifeline telephone service and efficient methods for its funding and administration. (Docket No. 040604-TL, 2004).
- Written testimony and cross examination on the economics of telephone rate rebalancing for customers, and on competition for telecommunications and broadband services in Florida (Docket No. 030867-TL, 2003). Testimony was cited by the Florida Supreme Court on appeal.
- Presentation to the Commission of public interest analysis of petitions to mandate structural separation of local telephone companies; joint with G. Mitchell Wilk. (Docket No. 010345-TP, 2001).
- Written and oral testimony and comments on the cost and price relationship between various local telephone company services, and the fair and reasonable rate for basic monthly service (Special Project 980000A-TP & Docket No. 980696-TP, 1998).

Hawaii Public Utilities Commission

- Written testimony on the appropriate analysis of discounted inter-island calling plans for predatory pricing or cross-subsidy (Docket No. 94-0298, 1996).
- Written testimony and cross examination on the benefits of incentive regulation for local telephone companies (Docket No. 7702, 1995).

Illinois Commerce Commission

- Written testimony and cross examination on energy utility diversification issues (1986).
- Written testimony and cross examination on the validity of an econometric model to estimate the cost of capital impacts of CWIP for a nuclear power plant (1985).

Indiana Utility Regulatory Commission

- Written testimony and cross examination on the economics of local telephone networks, the costs of basic network access and local service, and proposals to allocate local loop costs for these purposes (Cause No. 40785, 1998).

North Carolina Utilities Commission

- Written testimony addressing a price regulation proposal for Verizon North Carolina. Analysis included impacts on telecommunications competition; the pricing of services based on economic principles; ensuring affordable rates; and the economic significance of barriers to entry, measures of industry concentration and relevant market definitions (Docket P-19, sub 244; 2004).

Oregon Legislature

- Invited presentation to the SB 17 Task Force on telecommunications market dynamics and appropriate regulation, on behalf of the Oregon local telephone industry (2006).

Oregon Public Utility Commission

- Written testimony, cross examination, and workshop presentation on relevant market definition, competitiveness and public interest analysis of petition to price list local telephone company directory assistance and operator services (Docket UD 13, 2002-2005).

Texas Legislature

- Invited oral and written testimony on incentives for investment, the regulatory climate, broadband and the telecommunications industry before the Committee on Regulated Industries, Texas House of Representatives (2004).

Washington Utilities and Transportation Commission

- Written testimony and cross examination as to the public interest benefits of a merger between Verizon and MCI (Docket No. UT-050814, 2005).
- Written testimony on telecommunications industry competitive dynamics and their significance for public utility rate-setting, and the value of customer referrals for long distance service between business units (Docket No. UT-040788, 2005).
- Written testimony and cross examination regarding price relationships between long distance calling and basic local service; and the economics of price squeezes, predatory conduct, and imputation for access charges (Docket No. UT-020406, 2003).
- Written testimony providing a public interest analysis of a petition to extend wired telephone service to a highly-costly remote location (Docket No. UT-050778, 2006).
- Written testimony and cross examination providing a public interest analysis of requests to extend wired telephone service to two highly-costly remote locations (Docket No. UT-011439, 2002).
- Written testimony addressing competition and antitrust issues of the proposed merger between GTE and Bell Atlantic, including relevant market definition, actual and potential competitors, the role of regulation in merger competition analysis, and economic issues raised by other experts (Docket No. UT-981367, 1998).

RESEARCH AND PUBLICATIONS

“Calamities and capital: Who will fund California’s utilities?” (with David J. Teece), *Powergrid International* (June, 2019).

“Rethinking Risk Assessment for Safety Regulation” (with Paul Schulman), *Risk Analysis* (published online November 15, 2018).

“Welfare Analysis of Conservation Rate Designs for Water” (with Robin J. Walther), paper presented at the 26rd Annual Western Conference, Center for Research in Regulated Industries, Rutgers University (June, 2013).

“Smart Grid Also Requires Smart Economics,” *California Energy Markets* (December 10, 2010).

“State Should Look Before it Leaps on Renewable Energy Mandate,” *Sacramento Bee*, August 13, 2010.

“Rational Expectations and the Conservation-Oriented Pricing of Utility Services,” paper presented at the 23rd Annual Western Conference, Center for Research in Regulated Industries, Rutgers University (June, 2010).

“The Efficiency Subsidy Fallacy,” *California Energy Markets* (April 30, 2010).

“Greenhouse Gas Policy and California Electricity Prices,” *Journal of Regulatory Economics* (published July 10, 2009, <http://www.springerlink.com/content/100298/?Content+Status=Accepted>).

“Are There Energy-Efficiency Free Lunches?” *California Energy Markets* (January 2, 2009).

“Marking Up California’s Retail Electricity Prices for Externalities,” paper presented at the 21st Annual Western Conference, Center for Research in Regulated Industries, Rutgers University (July, 2008).

“California’s Green Gaffe,” *Public Utilities Fortnightly* (November, 2007).

“Squeezing BTUs From Light Bulbs,” *Public Utilities Fortnightly* (August, 2006).

“The Urgent Need for Reform of Wholesale Telecommunications Regulation in California” (with G. Mitchell Wilk), *Economic Policy Institute Issue Brief #199* (Washington, DC, September 20, 2004).

“Open Letter to California’s Governor” (with David J. Teece, and other energy experts), in Montgomery Research, Inc. (ed.) *The Utilities Project Volume 4* (San Francisco, CA, 2004).

“California: Policy and Reform” (with David J. Teece), in Montgomery Research, Inc. (ed.) *Leadership in a Shifting Market, The Utilities Project Volume 3* (San Francisco, CA, 2003).

Second “Manifesto on the California Electricity Crisis” (with David J. Teece et.al.). A co-author of, and one of 20 signatories to a statement on forward-looking policy responses to California’s electricity problems, Haas School of Business, U.C. Berkeley, January 31, 2003.

“California’s Electricity Markets: Structure, Crisis, and Needed Reforms,” (January 2003). Contributor to, and principal editor of comprehensive study documenting history of California electricity crisis and exploring potential reforms.

“Enduring Lessons of the California Electricity Crisis,” in *Regulatory Review 2002/2003*, edited by Peter Vass (Centre for the Study of Regulated Industries, University of Bath School of Management, Bath, UK, March, 2003); reprinted in *The Development of Energy Regulation – A Collection of Reviews* (CRI, May, 2003).

“The Next Stage of Local Telephone Regulatory Reform” (with G. Mitchell Wilk), in *Markets, Pricing and Deregulation of Utilities*, edited by Michael A. Crew and Joseph Schuh (Kluwer Academic Publishers, Boston, MA, 2002).

“The California Electricity Manifesto: Choices Made and Opportunities Lost” (with James D. Ratliff and David J. Teece), in *Electricity Pricing in Transition*, edited by A. Faruqui and B.K. Eakin (Kluwer Academic Publishers, Boston, MA, 2002).

“The Western Transmission Grid: The Urgent Call for Investment” (with Bruce McConihe), Edison Electric Institute (Washington, D.C.), September, 2001.

“Manifesto on the California Electricity Crisis,” (with David J. Teece et al.). A co-author of, and one of 31 signatories to a policy statement on appropriate governmental responses to the electricity crisis, Haas School of Business, U.C. Berkeley, January 26, 2001.

“Give Electricity Consumers A Chance,” (with John Scadding), *San Diego Union-Tribune*, August 7, 2000.

“Bundling and Other Possible Ends to Legacy Regulation: Reply to Professor Noam’s Article” (with G. Mitchell Wilk), *NRRI Quarterly Bulletin* 20, No. 2 (Summer, 1999), 119-123.

“Postal Service and the Telecommunications Analogy,” in *Emerging Competition in Postal and Delivery Services*, edited by M.A. Crew and P.R. Kleindorfer (Kluwer Academic Publishers, 1999).

“Common Ground,” *Public Utilities Fortnightly*, May 1, 1993 (analyzes policy similarities between competitive telecommunications and natural gas markets).

“‘Infrastructure’ and the Telephone Network: Defining the Problem,” Incidental Paper, Program on Information Resources Policy, Harvard University (July, 1992).

“The Oligopoly Paradox: Cellular Telephones and a Difficult Regulatory Problem,” *Journal of Policy Analysis and Management* 10, Vol. 4, 671-675 (1991).

“Private Pay Phones and AOS: A Current Note in a Continuing Regulatory Theme” (with G. Mitchell Wilk), paper delivered at Annual Williamsburg Regulatory Conference, December 1988.

“Mixing Computer III and Cost of Service Regulation: Some State Concerns,” *Telematics*, Vol. 4, No. 5, 3-5 (1987).

CASE STUDIES

“Competitive Bypass of Pacific Gas & Electric,” in *Cases in Microeconomics*, Jose A. Gomez-Ibanez and Joseph P. Kalt (1990).

“The CPUC and Telecommunications,” Harvard Business School Case Program, Harvard University (1987).

INVITED SPEECHES / PRESENTATIONS

Bellcore and Bell Canada Telecommunications Costing Conference
CPUC Telecommunications Training Seminar
California Telephone Association Annual Conference
Capitol Publications Seminar on Computer III and ONA
Cellular Telecommunications Industry Association
ComNet West
ElectroniCast Network Futures Conference
Golden Gate University
Hawaii Public Utilities Commission
Infocast Competitive Power for California Conference
Information Industry Association
The Junior Statesmen Foundation
Los Angeles County Bar, Antitrust & Trade Regulation Section
Montana Electric Cooperatives Association
National Association of Regulatory Utility Commissioners
National Association of Telecommunications Officers and Advisors
National Engineering Consortium: Eastern Communications Forum
Personal Communications Industry Association: Supercomm
Probe Research
RBOC and GTE Affiliated Interests Group Conference
Rutgers University Postal and Regulated Industries Conferences
San Diego Communications Council
Telocator Spring International Convention
United States Telephone Association Capital Recovery Seminar
UC Berkeley Haas Graduate School of Business
UC Berkeley Graduate School of Public Policy: Sloan Summer Institute
Washington Independent Telephone Association
Washington Utilities and Transportation Commission

OTHER

Expert reviewer of federal stimulus funding proposals for broadband internet service for the National Telecommunications and Information Administration, 2009.

Academic referee, *Journal of Regulatory Economics* (2002-2016).

Organizing committee member, Annual Western Conference, Rutgers University Advanced Workshop on Regulation & Competition (2007-present).

President, United States Table Tennis Association Foundation; also, Chair of USA Table Tennis High Performance Committee, 2013-2020 (oversaw training and selection of athletes representing the U.S. in international, Paralympic and Olympic competition).