

ATTACHMENT #2

Robert J. Camfield

Mr. Camfield is a graduate of Interlochen Arts Academy, received his Bachelors in Management from Ferris State University in 1969, and his Masters in Economics from Western Michigan University in 1975.

Mr. Camfield has served as an economist for the Michigan Public Service Commission and then chief economist for the Public Utilities Commission for the State of New Hampshire from 1976-1983. Mr. Camfield has worked for Southern Company Services, a major electricity service provider, in the capacity of strategic planner, economist and system economist. These positions covered an array of wholesale and retail energy market issues including the development, application, and review of cost allocation methodology covering four decades. Mr. Camfield's extensive experience and expertise is evident from his work, as detailed in his curriculum vitae. Selected entries include cost allocation and review of retail tariffs for a major G&T cooperative, cost of service allocation study on behalf of an intervening party within a major utility rate case, development of a cost allocation methodology for assignment of profits associated with off-system sales to jurisdictions, estimation of marginal cost for cost of service allocation for a major electric utility, and development and preparation of various marginal cost and cost of service allocation studies.

Mr. Camfield has submitted reports to be reviewed by regulators and testified in numerous regulatory proceedings including Newfoundland Labrador, Alberta, Ontario, Florida, Nebraska, Georgia, Virginia, Kentucky, Pennsylvania, Federal Energy Regulatory Commission, Barbados, Wisconsin, New Hampshire, Michigan, and Minnesota. Mr. Camfield's testimony has focused on a number of issues including rate design, cost allocation, and cost of service.

As set forth in his CV, Mr. Camfield has published numerous professional papers and reports including publishing articles in journals such as *The Electricity Journal* and *EPRI*. Mr. Camfield has been requested to present workshops and industry conference presentations on a number of issues including cost allocation.

Manitoba Hydro requests that Mr. Camfield be qualified as an economist with expertise in hydro electric utility regulation with a particular emphasis on cost allocation and rate design and the development, preparation and review of cost of service studies.

Robert J. Camfield

RESUME

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Academic Background:

M.A., Western Michigan University, 1975, Economics (High Pass, Comprehensive Exams)
B.S., Ferris State University, 1969, Management
Interlochen Arts Academy, 1964

Positions Held:

Vice President, Christensen Associates Energy Consulting, LLC, present
Senior Economist, Laurits R. Christensen Associates, Inc., 1994-2002
System Economist, Southern Company Services, 1993-1994
Economist, Southern Company Strategic Planning, 1992-1993
Strategic Planner, Southern Company Strategic Planning, 1990-1992
Project Manager, Georgia Power Company, 1983-1990
Chief Economist, Public Utilities Commission, State of New Hampshire, 1979-1983
Staff Economist, Michigan Public Service Commission, 1976-1979

Professional Experience:

I have served as the chief economist of a regulatory agency and system economist for a major electricity service provider. My experience covers an array of wholesale and retail energy market issues including cost allocation, performance benchmarking, retail tariff design, rate of return and capital valuation, incentive regulation, transmission planning, energy contracts, cost measurement, marginal cost analysis, and electricity market forecasting. For electricity and gas clients, I have reviewed tariffs and cost allocation methods, assessed electric generation technologies, negotiated power contracts, assessed energy procurement practices, helped finalize franchise licenses, and developed transfer pricing methods. I have managed power procurement processes, and assisted with transmission contracts. I have developed and applied pricing and costing innovations including marginal cost-based cost-of-service, web-based self-designing retail electric tariffs,

and efficient pricing of distribution services. I have represented and testified on behalf of integrated electricity utilities, gas distributors, cooperatives, regulatory agencies, utility associations, electric distribution companies, transmission companies, and generation companies in regulatory proceedings and public forums on a number of topics including tariff options, cost of capital, power supply contracts, cost of service allocation, phase-in plans, load forecasts, corporate performance and strategy, performance-based regulation, smart grid, transmission congestion, rate design, cost allocation, cost trackers, and integrated resource plans. I have participated in several large projects abroad, including the management of a market restructuring project in Central Europe. I have served on national committees and advised board of trustees and major electric companies on corporate strategy. I served as program director for the Edison Electric Institute's Transmission and Wholesale Markets School from 1999 through 2008.

Testimony and Public Reports Filed Before Regulatory Agencies:

Estimation: Marginal Costs of Generation and Transmission Services for 2019, a regulatory report filed before the Public Utility Board on behalf of Newfoundland Labrador Hydro, 2016.

Docket NG-0086: "Proposed Cost of Service Gas Hedge Agreement Between Black Hills Nebraska and Black Hills Utility Holdings, Inc.", an independent review with recommendations, filed before the Nebraska Public Service Commission, 2016.

Cost-of-Service Methodology Review, a report filed before the Public Utility Board on behalf of Newfoundland Labrador Hydro, 2016.

Methodology: Estimation of Marginal Costs of Generation and Transmission Services for 2019, a report filed on behalf of Newfoundland Labrador Hydro, 2015.

Supplemental Review of Cost of Service Methods of Manitoba Hydro, filed before the Public Utilities Board of Manitoba, an independent review with respect contemporary cost allocation issues, co-authored with Michael O'Sheasy, 2015.

Docket 140025-EI: "Direct testimony regarding load forecast and billing determinants before the Florida Public Service Commission, on behalf of Florida Public Utilities Company, 2014.

Docket UE 262: "PGE Decoupling Adjustment Evaluation", a report filed with the Oregon Public Utilities Commission on behalf of stakeholders including Portland General Electric, 2013 (co-authored with Dan Hansen and Marlies Hilbrink).

Docket 120001-EI: Direct testimony regarding the allocation of wholesale demand charges to classes, before the Florida Public Service Commission, on behalf of Florida Public Utilities Company, 2012.

Docket 566: "Analysis Update, Including Responses to Evidence filed By Interveners", filed before the Alberta Utilities Commission, on behalf of AtlaGas Utilities, co-authored with Philip Schoech, 2012.

General Rate Filing (2012/2013 and 2013/2014): "Review of Cost of Service Methods," filed before the Public Utilities Board of Manitoba, independent review with respect to the cost allocation methods employed by Manitoba Hydro and Centra Gas, co-authored with Bruce Chapman and Michael O'Sheasy, 2012.

Docket NG-0071: "Gas Purchasing Practices of Northwestern Energy for Retail Gas Services In Nebraska", filed before the Nebraska Public Service Commission, on behalf of the Nebraska Commission Staff, co-authored with Bruce Chapman and Mithuna Srinivasan, 2012.

"Inferred Class Contribution to Peak Loads for Allocation of Wholesale Demand-Related Costs Incorporated In Retail Fuel Charges", submitted before the Florida Public Service Commission, on behalf of Florida Public Utilities Company/Chesapeake Utilities Corporation, co-authored with Mithuna Srinivasan and J. David Glycer, 2012.

Docket NG-0066: "Assessment of Gas Hedging Practices," filed before the Nebraska Public Service Commission, on behalf of the Nebraska Commission Staff, co-authored with Bruce Chapman, 2012.

Docket 100459-EI: Report: "Assessment of Impacts: Time-Of-Use Pilot Program for Customers of the Northwest Division," filed before the Florida Public Service Commission, on behalf of Florida Public Utilities Company, co-authored with Bruce Chapman, 2011.

Docket 110001-EI: "Electricity Demand: Northeast and Northwest Divisions," filed before the Florida Public Service Commission, on behalf of Florida Public Utilities Company, co-authored with David Glycer, 2011.

Docket 566: "Review and Evaluation of Incentive Regulation Plan," filed before the Alberta Utilities Commission, on behalf of AltaGas Utilities, co-authored with Philip Schoech, 2011.

Docket PUE-2011-0037: Direct testimony regarding class cost-of-service allocation, before the Virginia State Corporation Commission, on behalf of Steel Dynamics, Inc., July 2011.

Docket PUE-2011-0037: Supplemental Direct testimony regarding total financial costs for determination of retail rates, before the Virginia State Corporation Commission, on behalf of Steel Dynamics, Inc., August 2011.

Docket PUE-2011-00036: Direct testimony regarding the implementation provisions of a retail cost tracker for recovery of the costs associated with a new generating station, before the Virginia State Corporation Commission, on behalf of Steel Dynamics, Inc., July 2011.

Docket FTC-02/09: Affidavit regarding cost of capital and accompanying report, before the Fair Trading Commission, on behalf of Barbados Light & Power Company, Limited, June 2009.

Docket 2008-00408: Direct testimony regarding regulatory policy concerning employment of smart grid technologies in view of provisions of the Energy Independence and Security Act of 2007, before the Kentucky Public Service Commission on behalf of East Kentucky Power Cooperative, January 2009.

Docket 080366-GU: Direct testimony regarding cost of capital and rate of return recommendation for determining retail natural gas prices, before the Florida Public Service Commission, on behalf of Florida Public Utilities Company, December 2008.

Docket 080366-GU: Direct testimony regarding expected inflation and escalation factors for determining retail natural gas prices, before the Florida Public Service Commission, on behalf of Florida Public Utilities Company, December 2008.

Docket E015/GR-08-415: Direct and rebuttal testimony regarding the long-term energy and load forecast methodology, on behalf of Minnesota Power Company, before the Minnesota Public Utilities Commission, October 2008.

Docket PUE-2008-00046: Direct testimony regarding cost allocation and principles based on marginal costs, before the Virginia State Corporation Commission, on behalf of Steel Dynamics Corporation, September 2008.

Docket 070304-EI: Rebuttal Testimony before the Florida Public Service Commission regarding return on equity for the determination of retail rates, January 2008.

Docket 070304-EI: Direct Testimony before the Florida Public Service Commission regarding cost of capital and return on equity, on behalf of Florida Public Utilities Company, for the determination of retail rates, October 2007.

Docket 070108-EL: Testimony before the Florida Public Service Commission regarding a generation power supply agreement for long-term electricity service requirements, May 2007.

Docket 060001-EL: Testimony before the Florida Public Service Commission in support of a power procurement process and long-term full requirements contracts, November 2006.

Testimony and report before the Ontario Energy Board regarding the cost of capital for local distribution companies in Ontario, Canada, September, 2006.

Docket ER-2006: Testimony before the Missouri Public Service Commission with regards to performance assessment, cost benchmarking, and capital risks attending electric utilities, on behalf of Kansas City Power and Light, January 2006.

Docket ER-2006: Rebuttal testimony before the Missouri Public Service Commission with regards the recognition of performance in the determination of retail prices, on behalf of Kansas City Power and Light, August 2006.

Docket 06-KCPE: Testimony before the Kansas Corporation Commission with regards to performance assessment, cost benchmarking, and capital risks attending electric utilities, January 2006.

Docket 050827-EI: Panel testimony before the Florida Public Service Commission regarding a regulatory phase in plan of the contract terms for generation services for the determination of retail rates, November 2005.

Docket 2006 EDR: Testimony before the Ontario Energy Board regarding the methodology and recommendations for electric distribution cost estimation and benchmarking of the local distribution companies of the Province of Ontario, January 2005.

Docket 040216-GU: Panel testimony regarding the cost of capital before the Florida Public Service Commission for the determination of retail rates, September 2004.

Docket 030438-EI: Panel Testimony before the Florida Public Utilities Commission regarding the cost of capital for determining retail electricity prices, economic costs of distribution services, and cost performance, February 2003.

Testimony and discussion on financial implications and risks under open access transmission, before the Energy Regulatory Office, Warsaw, Poland, September 1998.

Docket 9335-CE-100: Testimony regarding the implications of current and emerging competition on transmission reliability and planning, with particular focus on the Wisconsin western interface. The docket was a request before the Wisconsin Public Service Commission for Certificate for Public Convenience and Necessity (CPCN) to begin construction of a combined-cycle cogeneration plant in northeastern Wisconsin, July 1997.

Docket R-832331: Testimony regarding cost of capital for the determination of retail gas services of UGI Corporation, on behalf of the Consumer Advocate for the State of Pennsylvania, before the Pennsylvania Public Utilities Commission, August 1983.

Docket U-5724: Testimony regarding the cost of capital for Upper Peninsula Power Company in its application before the Michigan Public Service Commission for an increase in prices for retail telephone service, July 1978.

Docket 80-47: Testimony regarding projections of electricity demand, in the Commission's generic inquiry into the future demand for power, before the New Hampshire Public Utilities Commission, May 1981.

Docket 80-24: Testimony on the cost of capital in the application of Wilmington Suburban Water Corporation to determine prices for retail water service, before the Delaware Public Service Commission, November 1980.

Docket DR 80-23: Testimony on the cost of capital in the application of New England Telephone Company for an increase in retail rates, before the New Hampshire Public Utilities Commission, February 1980.

Docket DR 80-218: Testimony on the cost of capital in the application of Hudson Water Company before the New Hampshire Public Utilities Commission for an increase in prices for retail water service, February 1981.

Docket DR 81-86: Testimony on the cost of capital in the application of Granite State Electric Company before the New Hampshire Public Utilities Commission for an increase in prices for retail electricity service, July 1981.

Docket DR 79-187: Testimony on the cost of capital in the application of Public Service Company of New Hampshire before the New Hampshire Public Utilities Commission for an increase in retail electricity prices, February 1980.

Docket DR 80-104: Testimony on the cost of capital in the application of Northern Utilities before the New Hampshire Public Utilities Commission for an increase in prices for gas service, October 1980.

Docket DR 81-87: Testimony on the cost of capital in the application of Public Service Company of New Hampshire before the New Hampshire Public Utilities Commission for an increase in prices for retail electricity service, July 1981.

Docket U-5955: Testimony on the cost of capital in the application of Michigan Consolidated Gas Company before the Michigan Public Service Commission for an increase in prices for retail gas service, March 1979.

Docket U-6022: Testimony on the cost of capital in the application of Michigan Gas Utilities Company before the Michigan Public Service Commission for an increase in prices for retail gas service, June 1979.

Docket DE 81-312: Testimony on the topics of Demand Analysis (Technical Paper J) and Demand Elasticity (Technical Paper S) in the Commission's investigation of future supply and demand for electricity, New Hampshire Public Utilities Commission, October 1981.

ER 81-70, 71: Testimony on the cost of capital in the application of New England Power Company before the Federal Energy Regulatory Commission for an increase in prices for wholesale generation and transmission service, August 1981.

Docket U-5452: Testimony on Gas Rate Design in the application of Southeast Michigan Gas Company before the Michigan Public Service Commission for an increase in prices for retail gas service; June 1978.

Professional Papers and Key Reports:

“Service Quality Report”, a report with respect to service quality performance metrics, including principles and recommendations, for a major service provider, 2016.

“Analysis and Findings: Contracts Package Associated with Restructuring and Resource Strategy”, prepared on behalf of a major generation and transmission service provider, 2015.

“2015 Load and Energy Forecast Review”, a review of forecast issues, prepared for a large electricity service provider, 2015.

“Ensuring Adequate Power Supplies For Tomorrow’s Electricity Needs”, for the electric Markets Research Foundation. A policy review of capacity markets within U.S. wholesale electricity markets, co-authored with Laurence Kirsch, Mathew Morey, and B. Kelly Eakin, 2014.

“Forecast Review”, for a major integrated utility. A technical review of the methods and process of preparing the short- and long-term forecasts of electricity and water demand. The company’s forecast serves as the basis for its financial projections and resource plans, 2012.

“Economic Impacts of Alternative Resources”, for a major electric utility. A study of near- and long-term impacts of renewable energy resources, in lieu of conventional base load generation. Using general equilibrium methods, the study assessed local, regional and national impacts, including the incremental employment and household income effects resulting renewable resources, 2010.

“Study of the Costs of Service of the Puerto Rico Electric Power Authority,” co-authored with Mathew Morey and Michael Welsh, 2010.

“Review and Recommendations: Forecast Methodology and Process,” a report regarding the approach to load and energy forecasting, for a major integrated electric utility, 2008.

“Cost of Capital Report,” for an integrated electric utility, 2008.

“Estimates of Marginal Costs of Electricity Supply,” a report for an electric utility, and offered as testimony before a regulatory agency, 2008.

“Regulatory Policy Regarding Construction Work In Progress,” a discussion paper prepared for an integrated electricity service provider, 2007.

“Asset Valuation: Original Cost and Fair Value Approaches,” for an integrated electric service provider, 2007.

“Marginal Costs of Electricity Services,” for an electric utility, 2007.

“Conservation Strategies and Resource Options,” for a major electric utility, 2007.

“Rate of Return for Electric Distributors,” for the Electricity Distributors Association, Ontario, Canada, 2006.

“Comments Regarding Staff Proposal for Rate of Return and Incentive Regulatory Mechanism,” for the Electricity Distributors Association, Ontario, Canada, 2006.

"Economic Impacts of New Power Plants on Regional Economies," for a generation and transmission company, 2006.

"Other Factors Report," for American Transmission Company, 2005, co-authored with Laurence Kirsch, Mathew Morey, and Michael Welsh.

"Methodology and Study, Comparators and Cohorts Study for 2006 EDR," for the Ontario Energy Board, 2005, co-authored with David Glycer, Philip Schoech, and Michael Welsh.

"Power Procurement Options and Strategies," for an electric utility, 2005, co-authored with Mathew Morey.

"Approaches for Designing and Pricing Unbundled Transmission and Ancillary Services," for an integrated electric service provider, 2004, co-authored with Laurence Kirsch.

"Principles and Practices of Power Procurement," 2004, co-authored with Kelly Eakin, Mathew Morey, and Ross Hemphill.

"Findings and Recommendations: Comparators and Cohorts for Electric Distribution Rates," for the Ontario Energy Board, 2004.

"History, Status, Assessment: U.S. Electricity Markets," a discussion paper delivered before the annual national symposium on electric market restructuring, Poland, 2004.

"Methodology and Software for Evaluation of Transmission Development Options under Open Market Conditions," CIGRE, April 2004, co-authored with F. Buchta, D. Armstrong, and W. Lubicki.

"A Cost-Benefit Analysis of RTO Options," a report prepared for LGE Energy Corporation, September 2003, co-authored with Blagoy Borissov, Laurence Kirsch, and Mathew Morey.

"Methodology for Economic Assessment of Transmission Plans within Unbundled Power Markets," EPRI Report #54215, May 2002, co-authored with Rajesh Rajaraman.

"Determining the Marginal Costs of Transmission," a discussion paper prepared for a major electricity service provider, July 2003.

"Market Value Assessment of Hydro Units," for a major electric utility, 2003, co-authored with an engineering firm.

"Implications of SMD and RTOs for Retail Pricing," for a major retail service provider, July 2002.

"Exploring Transmission PBR and Power Market Reform," National PBR Conference, 2001, co-authored with Ross Hemphill.

"Incorporating Reserve Services and Scarcity Rents into Wholesale Price Forecasting," EPRI Pricing Forecasting Conference, 2001, co-authored with James Lamb, David Armstrong, and David Glycer.

"Self-Designing Tariffs," EPRI International Pricing Conference, 2000, co-authored with David Glycer and John Kalfayan.

"The New Pricing Organization," EPRI International Pricing Conference, 2000, co-authored with Michael O'Sheasy.

"Efficient Pricing of Transmission Services," *The Electricity Journal*, 2000, co-authored with Anthony Schuster.

"Pricing in Competitive Electricity Markets," *Distribution Services*, 2000, Ahmad Faruqui and Kelly Eakin, eds., Kluwer Academic Publishers, 2000, co-authored with Laurence Kirsch.

"Marginal and Average Power Losses," a technical discussion paper focused on the determination of line losses for power delivery systems, 1999, co-authored with David Glyer and Tom Gorski.

"Estimation of Marginal Costs for Real-Time Pricing," a technical report that reviews alternative approaches to determined short-run marginal costs, 1998.

"Marginal Costs of Distribution Wires Services," a technical discussion report that defines the theoretical basis and empirical methodology to determine the marginal costs of distribution services, 1999.

"Market Blueprint," for the transmission company of a Central European country. A report by an international team of experts for a transmission company facing market reform within a Central European country, 1999, co-authored with Charles Clark and Laurence Kirsch.

"Marginal Costs of Distribution Wires Services," a technical report of estimates of marginal distribution costs, 1998, co-authored with Boon-Siew Yeoh.

"Tariff Study," an EPRI report to the Polish Power Grid Company. The report provides recommendations for market reform and restructuring. Recommendations to unbundle electric service into competitive and regulated sectors are provided. The report also provides estimates of: 1) competitive generation prices with locational dimensionality and, 2) estimates of the net benefits from restructuring, 1999, co-authored with Charles Clark and Laurence Kirsch.

"Developing and Pricing Distribution Services," delivered before EPRI's Innovative Electricity Pricing Conference, 1998, and also in *Pricing in Competitive Electricity Markets*, Ahmad Faruqui and Kelly Eakin, eds., Academic Press, 2000, co-authored with Laurence Kirsch.

"Determination of Location and Amount of Series Compensation to Increase Power Transfer Capability," presented before the International Association of Electrical and Electronic Engineers, 1996, co-authored with Fernando Alvarado, Rajesh Rajaraman, Arthur Maniaci, and Sasan Jalali.

"Open Transmission Access: An Efficient, Minimal Role for the ISO," International Conference on System Sciences, 1996, co-authored with Fernando Alvarado and Rajesh Rajaraman.

"Transmission Comprehensive Marginal Costing," a report covering the conceptual design for software to determine locational prices, EPRI, 1996, co-authored with Keith R. Calhoun, David Glyer, Laurence Kirsch, Romkaew Broehm, and Michael Salve.

“Load Response Modeling Within Network Systems,” a white paper that provides empirical estimates of the net benefits to consumers and service providers realized from incorporating spatially differentiated load response into system operations, EPRI, 1996, co-authored with Steve Braithwait, Pankaj Sahay, Arthur Maniaci, and Rajesh Rajaraman.

“Incorporating Optimal Power Flow Capability,” a white paper that contrasts Optimal Power Flow methods and provides recommendations on incorporating Optimal Power Flow (OPF) into EPRI software, 1996, co-authored with Fernando Alvarado and Alfred Shultz.

“Transmission Pricing Strategies,” a report that reviews transmission pricing methodologies and provides guidelines to a major integrated electric system to develop transmission tariffs, 1995, co-authored with Romkaew Broehm and Laurence Kirsch.

“Methodology to Estimate Regional Wholesale Power Prices,” a technical white paper that presents, in substantial detail, a methodology to develop projections of power prices for regions of the U.S., 1995.

“Task II: Tariff Setting Mechanism” a report to the Turkish Electricity Authority. Task II was the second of two major scopes of service areas of the Operations and Management Improvement Program (OMIP), a World Bank funded project. Task II (Tariff Setting Mechanism) involved the determination of financial costs; estimation of long-run marginal costs including generation, transmission, and distribution services; allocation of financial costs; and retail tariff design, 1993–1994.

“Managing Risk in Restructured Power Markets,” a technical white paper on risk management methodologies, 1997, co-authored with Kathleen King, Pankaj Sahay, and Fritz Schulz.

“Profitability of Retail Market Segments,” a report of the expected long-run profits obtained from serving various retail markets for a major retail service provider, 1989.

“Profit Impact of Employment Multipliers,” a report of the secondary profit impacts realized from the location of new business customers in the region served by an electric utility, 1988.

“Secular Distortions in Regulated Prices and Impacts on the Cost of Capital to Utilities,” a discussion paper presented at the Eastern Economics Association that demonstrates the degree that investors discount internal cash returns from deferred taxes or non-cash returns associated with the allowance for funds used during construction (AFUDC), 1981, co-authored with Professor Peter Williamson.

“Long-Run Marginal Costs,” a technical report of projections of marginal costs of generation, transmission, and distribution services provided by a major electric utility, 1985-1988.

“Impact of Electric Prices on the Regional Economy,” a report that provides estimates of the impacts of regional electric prices on the costs of doing business within regions, 1985.

“Three Mile Island Two” a brief provided to the Legislature of the State of Michigan, 1979.

“Assessment of the FEA Long-Term Supply-Demand Model,” a report to the Michigan Public Service Commission, 1978.

National Conferences, Engagements, and Technical Workshops:

Panelist: “Vertical Integration In Retail Gas Services”, discussed before a conference organized by the National Regulatory Research Institute, 2016.

Speaker and Panelist: “Developing an Outlook for Interest Rates”, presented before the Society for Utility Regulatory Financial Analysts, 2016.

Discussion of *Gas-Electric Coordination* before the Gas Committee of the National Association of Regulatory Utility Commissioners, 2015.

Stakeholder Workshop Series on Cost Allocation, organized by Manitoba Hydro, 2014.

Workshop Speaker: *Regulatory Governance and Incentive Regulation; Developing Estimates of Marginal Cost*, Seminar for the California Public Utilities Commission, organized by the Wisconsin Public Utilities Institute, 2014.

Speaker and Panelist: *Infrastructure: Challenges, Progress, Solutions*, Bowhay Institute and Council of State Governments, La Follette School of Public Affairs at the University of Wisconsin, 2014.

Moderator: *Transmission Cost Allocation*, Wisconsin Public Utilities Institute, 2012.

Speaker: *Roadmap for An Energy Secure Economy*, Annual Trustee Update, Power South Energy Cooperative, 2012.

Speaker and Panelist: *U.S. – Canadian Energy Trade and Markets*, Bowhay Institute and Council of State Governments, La Follette School of Public Affairs at the University of Wisconsin, 2012.

Speaker: *Setting a Strategic Direction*, Board of Trustees, Central Electric Power Cooperative, with David Glycer, 2011.

Speaker: *Electricity and the U.S. Economy*, G&T Manager’s Fall Conference, 2011.

Speaker: *Alternative Financial and Market Arrangements for Transmission*, EEI’s “Transmission and Market Design School”, Edison Electric Institute, with co-author Bruce Chapman, August 2010.

Session Moderator: *The Problem of Cost Allocation* at “Status of Electric Transmission, 2010,” Wisconsin Public Utilities Institute, May, 2010.

Lecturer: “Review of the U.S. Electric Power Industry,” for the Republic of Georgia, April 2009

Session Moderator: “Feed-In Tariffs,” Wisconsin Public Utilities Institute workshop on renewable energy, July 2009

Conference Chair, "Electricity: A Rising Cost Industry," Chicago, September 2008.

Speaker at the conference "Managing Physical and Financial Uncertainty in the Power Industry," New York Mercantile Exchange, New York, June 2007.

Speaker and panelist at the "Annual Executive Symposium" of the Electricity Distributors Association, Ottawa, Canada, October 2006.

Speaker at the conference entitled "Transmission Reliability: Determining Appropriate Standards and Metrics," Washington DC, September 2006 (co-speaker with Laurence D. Kirsch).

Speaker at a seminar focused on "Cost and Performance Benchmarking for Electric Utilities," Toronto, Canada, October 2006.

Speaker and workshop lecturer at the conference entitled "Transmission and System Reliability," Cape Cod, September 2005.

Speaker at the conference entitled "Organization and Governance of the Market Agent," Washington DC, April 2005.

Chair and workshop lecturer ("Market-based Criteria and Evaluation of Transmission Expansion Plans") at the national conference entitled "Assuring Reliability, System Operations, and Network Expansion," San Francisco, October 2004.

Lecturer at the week-long course on Public Utility Regulation sponsored by the Wisconsin Public Utilities Institute, University of Wisconsin, Madison, October 2003.

Discussant on a panel of experts on the topic of market organization, conducted for a delegation of officials of the Korean electricity industry, sponsored by EPRI, Palo Alto, September 2003.

Chair and workshop lecturer ("Market-based Evaluation of Transmission Plans") at the "Markets for Power" conference, Denver, September 2003.

Discussant at the workshop on market-based expansion of networks, conducted before a delegation of officials of the Korean electricity industry, sponsored by EPRI, Madison, July 2003.

Week-long seminar on market organization issues, conducted for a delegation from the Korean Power Exchange, sponsored by EPRI, Palo Alto, May 2003.

Conference chair and speaker at the national conference entitled "Linking Wholesale and Retail Markets, Denver," April 2003.

Program Director and lecturer for the Edison Electric Institute's *Transmission and Wholesale Markets School*, University of Wisconsin, Madison, 1999-2008.

Lecturer on marginal costs at a three-day workshop organized for a large municipal utility.

Discussant at a workshop on ancillary services for a large integrated electric service provider, Denver, 2002 (co-presenter with Laurence Kirsch).

Lecturer at a three-day workshop on wholesale market design for a large integrated electric service provider, 2002 (co-presenter with Laurence Kirsch).

Lecturer at a three-day workshop entitled "Locational Pricing and Market Design," sponsored by WestConnect RTO, Phoenix 2002.

Session chair and speaker on the topic of performance-based regulation for transmission, at the national conference entitled "Performance-Based Ratemaking," Denver 2001.

Presenter at the "Review of U.S. Electric Markets" seminar for a delegation of officials of the power industry of China, Atlanta 2001.

Speaker and workshop lecturer at the workshop on distributed resources at the conference entitled "Unbundling and Pricing Wires Services," Philadelphia, 1999 (co-presenter with Ross Hemphill).

Speaker on the topic of "Technical Methods for the Design of Unbundled Transmission and Distribution Tariffs" at the workshop entitled "Unbundling Electric Power," sponsored by the Polish Power Grid Company, Warsaw, 1999.

Speaker on the topic of "Bottlenecks within Midwest Power Markets" at the conference entitled "Power Markets in the MAIN and MAPP Regions," Chicago, 1999 (co-presenter with Rajesh Rajaraman).

Discussant on the topic of "Pricing Transmission Services" delivered before the economics committee of the Edison Electric Institute, San Diego, 1999.

Speaker on the topic of "The Key to Profits: Understanding Costs and Customer Behavior" at the conference entitled "Measuring Customer Profitability for Utilities," New Orleans, 1998 (co-presenter with Ahmad Faruqi).

Speaker on the topic of "Pricing Transmission Services" at the conference entitled "Successful Transmission Pricing," Houston, 1997.

Lecturer at the workshop on "Pricing Distribution Services" at the conference entitled "Achieving Success in Evolving Power Markets," sponsored by EPRI, Houston, 1997, (co-presenter with Charles Clark and Laurence Kirsch).

Speaker on the topic of "Incorporating Transmission Incentive Rates" at the conference entitled "Developing and Implementing ISO Rates and Structures" Washington DC, 1997.

Speaker and panelist on the topic of "The ISO: Efficient Organization of Power Markets" at the Rate Symposium, sponsored by the University of Missouri, St. Louis, 1997.

Speaker on the topic of "Transmission Pricing Strategies" at the conference entitled "Pricing Strategies in Electric Power," Chicago, 1996, (co-presenter with Keith R. Calhoun).

Lecturer on the topic of "Long and Short-Run Marginal Costs for Transmission and Distribution Services" at the workshop on estimating economic costs, sponsored by EPRI, Denver, 1996.

Presenter on the topic of "Costing and Pricing Transmission," at the workshop for the Transmission Pricing Task Force of the Southwest Power Pool, sponsored by EPRI, Kansas City, 1996.

Speaker on the topic of "Designing Rates and Services for Restructuring Electric Utilities" at the conference entitled "Performance-Based Pricing," Washington DC, 1996 (co-presenter with Douglas Caves).

Speaker on the topic of "Projecting Wholesale Prices" at the conference entitled "Achieving Success in Evolving Electric Markets," Indianapolis, 1996.

Chair of the session entitled "Market Coordination Functions," at the conference entitled "Achieving Success in Evolving Electric Markets," sponsored by EPRI, Atlanta, 1995.

Speaker on the topic of "Evolving Power Markets" at the conference entitled "Innovative Rate Design," sponsored by EPRI, 1994.

Speaker on the topic of "Evolving Power Markets Abroad" at the conference on "Real-time Pricing and C-VALU," sponsored by EPRI, Minneapolis, 1994.

Speaker on the topic of "Efficient Transfer Pricing of Generation and Transmission Services of Integrated Electric Systems" at the annual conference of the Model Users Forum of *Regional Economic Models*, Atlanta, 1993.

Speaker on the topic of "Changing Overseas Power Markets" at the conference entitled "Real-Time Pricing," sponsored by EPRI, New Orleans, 1993.

Speaker on the topic of "Secondary Impacts on Utility Profits, Impacts of New Business Locations," at the conference entitled Model Users Forum of *Regional Economic Models*, 1992.

Served as Session Chair or Reviewer at the Annual Conference of the Advanced Seminar in Regulatory Economics, Rutgers University, Newark, 1986 and 1990-1993.

Speaker on the topic of "Market Segmentation and Pricing Efficiency" at the conference entitled "Innovative Rate Design," EPRI, 1988.

Special Assignments, Professional Associations, Awards:

Negotiation of a Purchase Power Agreement for generation services between the Power Delivery and Power Supply divisions, for a major investor owned electric company, 2001.

EPRI Advisory Committee on Market Management, 1992-1994.

Special Assignment to Southern Company's *Management Information Reporting System (MIRS)* project focused on the implementation of transfer pricing for generation and transmission services, 1993.

Evaluation Working Group, Southern Company: Initiation and coordination of a system-wide group focused on the evaluation of marketing plans. The group was charged with reaching a common conceptual design and methodology to estimate marginal costs and evaluate marketing programs and demand side options, 1990.

Economics Panel, Southern Company: Economics panel tasked with the development of business scenarios for use in long-term planning. The panel identified ranges of values for key exogenous economic drivers and assumptions, 1986-1987.

Load and Energy Forecast Review Committee, Alabama Power Company, 1991-1993.

National Association of Business Economists, 1987-1992.

Utility Planning Model Users Group, Southern Company, 1986-1987.

American Economic Association.

International Association of Energy Economists.

Board of Directors, New England Economic Project, Model Manager, 1981-1983.

Economics Committee, National Association of Regulatory Utility Commissioners, 1980-1983.

Policy Advisory Committee, Regional Energy Facility Siting Study, a project funded by the Nuclear Regulatory Commission, 1981-1982.

Go For the Gold Award, Southern Company Services, 1993.

Top Performer Award, Georgia Power Company, 1989.

Selected Management Assignments and Project Work:

Transmission Tariff Prices, for a major generation and transmission service provider.

Cost Allocation and Review of Retail Tariffs, for a major G&T cooperative.

Consultation with regulatory authorities regarding the commercial terms of supply contracts between gas production subsidiaries and their affiliates, local gas distributors.

Review of load and energy forecast report, for filing with an integrated resource plan.

Cost of capital review – preparation of arguments for presentation before regulatory authority.

Review of the commercial terms of proposed power purchase and transmission agreements among affiliates, to ensure that contract provisions are incentive compatible.

Wholesale cost benchmarking, for a major generation and transmission company.

Benefit-cost analysis in support for a regulatory filing seeking approach for a long-term power purchase agreement.

Economic evaluation of investment in a cogeneration facility.

Load and energy forecast review, for an integrated electric utility.

Discussion paper focused on the principles for determining the prices for services provided by affiliates to public utilities.

Review of an Integrated Resource Plan of an integrated electric utility.

Capital valuation and assessment of generation investment strategies and options.

Electric power rate case, providing oversight for the overall filing preparation, forecast of load and energy (billing determinants), and estimates of cost escalation for a forward test year.

Policy discussion paper regarding cost trackers for gas distribution utilities.

Technical and advisory support to the Maine Public Utilities Commission regarding the electricity sales forecast of Central Maine Power, within CMP's current rate case proceeding.

Technical and policy support to a distribution utility regarding the negotiation of a power purchase agreement.

Technical comments regarding the features of a Green Energy Tariff, as proposed, of a major electricity service provider.

Advisory support to the Nebraska Public Service Commission regarding the technical and policy merits of the application of Source Gas Incorporated, a natural gas distributor, for authority to put in place a tariff rider for infrastructure cost recovery.

Technical support to an electric utility regarding a dispute over franchise rights.

Assessment of technical issues associated with a gas distribution rate case filing, in support of a regulatory agency and its staff.

Development and negotiation of the structure of the commercial terms of a cogeneration power supply agreement, for a distribution utility.

Assessment of the mechanics of a natural gas fixed bill-weather swap retail tariff option, for a generation and transmission cooperative.

Assessment of Joint Dispatch Agreement: Duke Energy—Progress Energy Merger, for a major distribution utility.

Review of the working mechanics of a weather normalization rate option, for a major distribution utility.

Assessment of incentive regulation options for the electric and gas distribution of a major utility services provider.

Transmission business strategy, for an integrated electric utility.

Cost benchmarking and projections of financial costs of peer group competitors, for an integrated electric utility.

Support of the renegotiation of a power supply contract, for an electric distribution utility.

Preparation of arguments regarding market dominance and regulatory policy, retail Standard Offer Service.

Support of technical staff of a regulatory agency, regarding natural gas rate case filings.

Open access wholesale tariffs including various supporting documents and reports, for a Caribbean utility.

Transmission evaluation model to assess interconnection redundancy, for a major electric service provider.

Assessment of the benefits and costs associated with joining an RTO, for an electric utility.

Assessment of regional economic impacts arising from renewable resources, for a major electric utility.

Economic assessment of IGCC technology and planned generator, for a major electric utility.

Qualitative assessment of the likely impacts of the Clean Energy Act of 2009, for a major electric utility.

Report on demand side participation in contingency reserves, for a major electric utility.

Development of a load and energy forecast and accompanying regulatory report, for a major electric utility.

Report reviewing alternative transmission business models, for a major electric utility.

Evaluation and critique of high voltage transmission network overlay, for an association of electric utilities.

Negotiation of terms for power supply contract, for a distribution utility.

Analysis of power procurement processes and outcomes for electricity service providers, and justification for incentive allowances, for a regulation agency.

Review of cost of service allocation methods, for an integrated electric and gas utility; report filed before regulatory authority.

Methodology dispute regarding load forecast methodology, on behalf of agency staff and a utility applicant, in an integrated resource planning docket before a regulatory agency.

Cost of service allocation study on behalf of an intervening party within a major utility rate case.

Manager of the support team preparing a natural gas rate case filing, on behalf of a combination electric-natural gas utility. Project work includes cost of service allocation, preparation of the Minimum Filing Requirements, design of retail tariffs, and cost of capital/rate of return recommendation and testimony.

Position paper on stranded costs resulting from off-system purchases by distributors, for a major generation and transmission cooperative (G&T).

Projections of escalators for determining commercial terms, for use in negotiation of new coal contracts.

Preparation of load and energy forecast for an electric utility.

Analysis and recommendations of regulatory issues underlying total costs (revenue requirements) for a utility's rate case filing. The issues, including fair value/original cost rate base, construction work in progress, normalization/flow through of income tax effects from accelerated depreciation/investment tax credits, working capital, and depreciation policy, were addressed in a series of discussion papers.

Report on integration of demand response into transmission and distribution planning.

Assessment of and recommendations for retail market strategies focused on conservation, efficient pricing, and renewable resources, for an electricity service provider.

Cost of capital/rate of return recommendation and testimony for a utility rate case filing.

Development of the draft commercial terms for a power supply contract for a renewable resource facility.

Negotiation of contracts for transmission services, for an electric distribution company.

Review of methodology and process for development of load and energy forecasts, for a major electric utility.

Development of cost allocation methodology for assignment of profits associated with off-system sales to jurisdictions, for a major electric utility.

Development of the structure of a proposed fuel adjustment clause for retail electric services, for a major electric utility.

Review of the commercial terms of a proposed power supply contract, for a major electricity service provider.

Review of a utility rate case filing, on behalf of a major electricity service provider.

Review and assessment of the efficiency of fuel procurement practices on behalf of a major electricity service provider.

Review of economic cost allocation methods and options, for an electric generation and transmission company.

Determination of strategy for transmission services, where options include exiting an RTO, the purchase of services from a private Transmission Services Coordinator, and the formation of a statewide or regional ISO with a consortium of electric utilities.

Analysis of the benefits and costs of electric transmission expansion plans, for an independent transmission company; report filed before regulatory authority.

Review of the design of market-based buy-through options for retail electricity curtailment contracts.

Support for the negotiation of long-term power supply contracts, including development of commercial terms.

Assessment of transmission costs and risks, in support of power supply contracts.

Management of a power procurement process including the determination of strategy and approach, development and issuance of a request for proposal, evaluation of offers, and the negotiation of power contracts.

Development of a regulatory phase-in plan of the costs associated with new wholesale power supply contracts.

Factor models for the determination of cost of capital, for a consortium of electric utilities.

Assessment of the secondary economic impacts (multiplier effects) on regional economies arising from the construction and commercial operation of new generating stations.

Comparative assessment of the economic viability of contemporary power generating technologies, for a major electric utility.

Definition of proposed RTO reporting requirements, for an association of electricity service providers.

Comparative assessment of the economic costs of electric distribution services.

Transfer pricing for generation and transmission services, for a major electric utility.

Evaluation of a proposed amendment and extension to a power supply contract, for an electric utility.

Interpretation and assessment of the Standard Market Design proposal developed by the Federal Energy Regulatory Commission, for a major electric utility.

Development of software for the evaluation of transmission expansion plans, for a major transmission company.

Development of methods to assess benefits and costs of transmission expansion plans.

Estimation of marginal cost for cost-of-service allocation, for a major electric utility.

Forecasts of regional electric wholesale prices and assessment of the reliability of power delivery, in support of the negotiation of a wholesale power supply contract for an electric power merchant.

Valuation and assessment of hydroelectric power plants, for a major electric utility.

Economic assessment of transmission expansion plans, for a major transmission company.

Assistance in the specification of the franchise licensing agreement underlying a utility privatization, for an international energy company.

Determination of the benefits of expanded network metering, for a large incumbent transmission service provider.

Specification of the terms associated with a purchased power contract, for a major electric utility undergoing corporate unbundling.

Estimation of regional wholesale prices for reserve services, for a major electric utility.

Evaluation of generation investment strategy, for a major electric utility.

Preparation of long-term projections of regional wholesale power prices, for a major electric utility.

Development of the blueprint and structure for wholesale electricity market design, for a major transmission company.

Estimation of consumer electricity outage costs (value of reliability), for a major electric utility.

Estimation of generator costs and network locational prices, for an electric distribution company in New Zealand.

Determination of principles and definition of the main elements for electricity market restructuring and tariff design, for a Central European country.

Analysis of retail tariff design and strategy, for a major electricity service provider.

Development of transmission and distribution marginal costs, for a large municipal electric utility.

Determination of economic costs and tariff prices, for the Turkish Electricity Authority.

Evaluation of transmission network costs and tariffs, for the national grid company of a Central European country.

Development of optimal power flow software for determining transmission spot prices, for a major electricity service provider.

Estimation of marginal costs for jurisdictional and class cost-of-service allocation.

Development of electric transmission spot pricing capability and software.

Estimation of wholesale electricity market prices in the Northwest region.

Determination of locational marginal costs and the implications for real time pricing.

Development of marginal costs and cost-of-service allocation study.

Development of pricing strategy for an electric distribution utility operating in an open retail access region.

Development of a cost-of-service study and retail pricing, for an electric distribution utility.

Preparation of a cost-of-service study utilized marginal costs.

Analysis of the impact of real-time pricing program options.

Development and implementation of generation and transmission transfer pricing for a major electric utility.

Economic analysis of retail electricity pricing options.

Economic analysis of time-of-use electricity retail service design options.

Development, evaluation, and feasibility assessment of the business case for the formation of a financing subsidiary.

Economic assessment of alternative cycles and schedules for nuclear plant refueling.

Assessment of retail electricity marketing strategies.

Estimates of marginal costs of power delivery services provided by U.S. electric utilities.

Operations and Management Improvement Program, a World Bank funded project for the Turkish Electricity Authority.