

**Bruce R. Chapman**

RESUME

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**Academic Background:**

All course work necessary for PhD, University of Wisconsin-Madison, 1981, Economics  
MA, University of Wisconsin-Madison, 1979, Economics  
BA, University of Pittsburgh, 1976, Economics

**Positions Held:**

Vice President, Christensen Associates Energy Consulting, LLC, 2015-present  
Senior Economist, Christensen Associates Energy Consulting, LLC, 2005-2014  
Senior Economist, Laurits R. Christensen Associates, Inc., 1992-2005  
Economic Analysis Consultant, Laurits R. Christensen Associates, Inc., 1988-1992  
Research Economist, Laurits R. Christensen Associates, Inc., 1986-1988  
Associate Consultant, Coopers & Lybrand Consulting Group, Economics Practice,  
Toronto, Canada, 1985-1986  
Research Assistant, University of Wisconsin-Madison, 1980-1981  
Research Analyst, Woods Gordon (Economics Group), Toronto, Canada, 1979-1980

**Professional Experience:**

I assist clients in the electricity and natural gas industries to improve their costing and pricing capabilities. I advise clients in such areas of expertise as: cost-of-service analysis and rate design based upon established regulatory and market-based principles; innovative rate design including demand response products, renewables pricing, fixed billing, and other market-based retail pricing products; load forecasting and load research analysis. I supervise and conduct analysis of costing and pricing issues for utilities, regulators, customers and other industry stakeholders. Additionally, I have supervised the development of software required for the implementation and support of innovative retail products. Examples include cost-of service and rate design models to

support rate applications, and models to predict customer tariff choice and price response. I regularly present costing and pricing issues and concepts at industry conferences and workshops.

**Major Projects:**

Provided pricing and revenue recovery guidance to a Caribbean utility.

Provided guidance to a Southeast Asian utility in the design of time-of-use rates. Guidance included instruction in simulation of price response.

Directed a cost-of-service study for a large distribution utility.

Assisted a utility to adjust its costing and pricing methods following addition of significant new generation and transmission assets.

Assisted a utility to merge rates of two separate service territories following a corporate merger.

Reviewed a natural gas distribution utility's proposal for a commodity hedging arrangement.

Assisted in developing an electric vehicle tariff for a Midwestern utility.

Assisted in an evaluation of economic development and load retention rates for a Midwestern utility.

Led an evaluation of a Midwest utility's residential time-of-use rate in comparison with other TOU designs and current marginal costs. Evaluated means by which participation could be increased.

Participated in an evaluation of the merits of a special contract for a large customer of an Eastern utility.

Conducted an analysis of the relative cost-of-service implications of creating a separate class for a specialized subset of customers from an existing large customer class.

Assisted a Great Plains utility to develop a renewable tariff for large industrial customers.

Managed a project that assisted a Great Plains public service commission staff to evaluate natural gas utility submissions for safety-related cost recovery via new riders.

Participated in a load research data development project for a Midwestern utility, including sample design and selection, and class interval load profile development.

Conducted an analysis of the cost implications for a Caribbean utility of introducing LED street lighting.

Developed generic cost-of-service and rate design models for use in client rate cases.

Customized company cost-of-service and rate design models for an Asian utility. The project also included support for marginal cost capability development.

Led a rate case preparation process for a Southeastern utility that included load and energy forecasting, development of revenue requirements, and support for cost of service and rate design.

Participated in a Midwest utility's rate case by reviewing current mass market time-of-use and other rate designs and recommending modifications.

Collaborated in a review of a large Canadian utility's cost-of-service methodology, including a public review process with stakeholders. Testified before regulator regarding recommendations.

Conducted an assessment of a Great Plains public power utility's plans for three pricing concepts: green power, economic development rates, and unbundled retail pricing to facilitate customer choice.

Assisted a distribution utility to review aspects of its distribution cost allocation methodologies by conducting a survey of methodologies across a number of electric utilities.

Assisted a state energy office to review ways in which the state could improve its record of energy efficiency program achievements, as recorded by the ACEEE Scorecard.

Collaborated in the development of rate redesign alternatives for a utility's real-time pricing program structure.

Collaborated in the review of the potential for a Canadian utility to introduce a fuel adjustment mechanism.

Conducted an analysis of probable migration of customers to new time-of-use electricity programs offered by a southeastern utility.

Evaluated the accuracy of an electric utility's fixed bill offer algorithm and recommended modifications.

Led a project which conducted a review of an electric utility's avoided cost calculation and the application of those costs in energy efficiency reviews.

Managed and participated in reviews of rate and gas cost adjustment applications for a Great Plains public service commission's gas division.

Conducted a cost-of-service and rate design study for a Caribbean utility in preparation for a rate submission.

Supported review for an industrial customer group of a large filing by a utility, focusing on non-bypassable riders.

Managed a gas cost review process for a Great Plains regulatory agency.

Analysis of smart grid pricing issues for a Great Plains public power utility.

Contributed to load research sample development for an investor-owned utility.

Managed a review of a large electric and gas utility's costing methodologies.

Managed a cost-of-service and rate design study for a Caribbean utility.

Conducted analysis of distribution costing practices at a large Midwestern investor-owned utility.

Development of a time-of-use rider for two electric utilities.

Management of a study of interruptible pricing program improvements for a large Midwestern utility.

Management of a comprehensive cost-of-service and rate design study for a Caribbean utility.

Strategic pricing for a large hydro-dominated utility.

Evaluation of the net economic benefits of alternative power supply strategies: coal vs. renewables and energy efficiency.

Load forecasting project for a medium-sized electric utility with significant industrial load.

Analysis of alternative means of net metering.

Evaluation of alternative demand response programs for a municipal utility.

Analysis of treatment of margins from real-time pricing.

Analysis of a natural gas energy conservation funding mechanism.

Design and pricing of a small customer Time-of-Use program.

Evaluation of cost of capital for a small Caribbean utility.

Risk pricing of a long-term customer choice retail contract.

Evaluation of response by small customers to fixed billing programs.

Evaluation of response by medium-sized customers to a banded fixed billing program.

Cost-of-service project including marginal cost and traditional cost basis.

Preparation of load research survey sample via stratified random sampling.

Design and pricing of a Critical Peak Pricing product

Evaluation of residential customers' propensity to adopt a voluntary Time-of-Use product

Pricing of a fixed bill product for a new service territory based on response elsewhere

Evaluation of peak period response to a fixed billing product

Development of an electric utility fuel forecast

Customization of fixed bill software for use at a utility site

Design and pricing of a Banded Fixed Billing product.

Long-term wholesale power procurement for an electric utility.

Report on Adoption of Variable Pricing contracts in deregulated retail electricity markets.

Development of Fixed Bill software to generate offers and monitor customer behavior.  
Quantitative evaluation of net benefits of demand response programs.  
Quantitative evaluations of customer response to fixed billing.  
Design and pricing of several pilot and permanent fixed-bill programs.  
Development of Efficient Tariff Prices via Marginal Costing.  
Analysis of Market Data Available to Estimate Marginal Cost of Reliability.  
Evaluation of Risk of Fixed Billing Based on Customer Response.  
Cost Allocation Analysis for Rate Case Filing.  
Analysis of Customer Response to Fixed Billing.  
Fixed Bill Scoping for a Natural Gas Provider.  
Analysis of Risk Implications of Fixed Billing for an Electric Utility.  
Strategic Assessment of an Electric Utility's Retail Tariff Portfolio.  
Guaranteed Bill Product Design and Risk Assessment.  
White Paper on Interruptible/Curtailable Service.  
Marginal Cost-Based Cost of Service Development.  
Software Scoping for Self-Designed Products.  
Flat Bill Offer Software Development.  
Comprehensive Rate Repricing.  
RTP Price Hedging Product Development.  
Retail Pricing Under Competition Conference.  
Rate Optimization Plan.  
Fixed Bill Product Development.  
Weather Hedge Evaluation.  
Real-Time Pricing Product Development.  
Workshop: Creating a Diversified Retail Pricing Portfolio.  
Product Mix Business Plan.  
Prepared material for testimony in Federal District Court on Real-Time Pricing.  
Risk-Based Pricing Workshops.  
Survey of New Electricity Market Players.  
Analysis of Fixed Bill Products.  
Strategic Pricing Plan for a Midwestern Utility.

Product Mix Analysis for Small Customers.  
Real-Time Pricing Workshop.  
Innovative Pricing and Marginal Costing for a Co-op.  
Real-Time Pricing with Multiple Options.  
Real-Time Pricing for a G&T and its Co-ops.  
Product Mix Analysis for Large Customers.  
Real-Time Pricing Service Design for Commercial Customers.  
Advanced Service Design Workshop.  
Real-Time Pricing Program for a Midwestern Utility.  
Evaluation of Customer Response to Real-Time Pricing.  
Real-Time Pricing Program Development for an Eastern Utility.  
Two-Part Pricing Service Design.  
Real-Time Pricing Regional Workshops.  
Real-Time Billing Program Support and Revision.  
Electricity Efficiency Programs.  
Real-Time Pricing Program Redesign for an Eastern Utility.  
Real-Time Pricing Implementation for a Canadian Utility.  
Real-Time Pricing Practitioners' Workshop.  
Real-Time Pricing for a Canadian Utility.  
Customer Evaluation of Real-Time Pricing.  
Review of Competitive Pricing Strategies.  
Evaluation of Process of Marketing Real-Time Pricing.  
Review of Methods for Distinguishing Customer Response to Rate Change.  
Real-Time Pricing Rate for a Southern Utility.  
Review of Accounting and Incentives for a Real-Time Pricing Rate.  
Analysis of Load Impact of Priority Service Alternatives.  
Benefit/Cost Analysis of an Integrated Energy Management System.  
Benefit/Cost Analysis of Marginal Cost-Based Rates for DSM Integrated Resource Plan.  
Impact Evaluation of Curtailable Electric Service.  
Survey of Households Who Were Candidates for Voluntary Time of Use Rates.  
Audit of Energy Management Software.

Real-Time Pricing Rate for a Large Northeastern Public Utility.

Software Design for Real-Time Pricing.

Improved Approaches to Estimating Benefits of DSM Programs.

Load Shapes Assessment Program.

Fuel Purchase Contract Study.

Evaluation of the Effects of Canadian Energy Policy.

Evaluation of Energy Conservation Programs.

**Professional Papers:**

“Pricing of Renewable Energy Made Difficult by Policy Challenges”, *Natural Gas & Electricity*, January 2016.

“Hedging Exposure to Volatile Retail Electricity Prices”, *The Electricity Journal*, June 2001 (with Ahmad Faruqui, Dan Hansen, and Chris Holmes).

“A Survey of Real-Time Pricing Programs”, *The Electricity Journal*, August–September 1993 (with Juliet Mak).

“Real-Time Pricing: DSM at Its Best?”, *The Electricity Journal*, August 1990 (with Tom Tramutola).

**Conference Presentations:**

“Pricing the Purchase of Renewable Energy,” post-conference workshop at EUCI’s 4<sup>th</sup> Annual Southeast Clean Power Summit, March 2015.

“Pricing Perspectives of Regulated Utilities on Solar Power,” EUCI’s Net Metering 2.0 and Utility Solar Rates Conference, Anaheim, CA, January 2015.

Cost of Service and Rate Design; Current Utility Costing and Pricing Challenges; Pricing Renewable Energy; Feed-in Tariffs and Demand Response Alternatives to Supply. Presentations to the Wisconsin Public Utility Institute’s Energy Utility Basics Course, 2009–2015.

“The Bill Please,” university course and public presentation within the “Decoding the Energy Industry” series; Wisconsin Public Utility Institute, 2014.

Electric Rate Design Principles and Designs (with Dr. Stephen Braithwait), and Pricing Renewable Resources; presentations to the Rate Design and Regulation Workshop, Wisconsin Public Utility Institute, Madison, Wisconsin, 2014.

“Customer Response to Dynamic Pricing: Who Responds and How?,” EUCI’s Smart Ratemaking Conference, Oct. 2009, Los Angeles; with Dr. Steven Braithwait.

Cost-of-Service, preconference workshop, EUCI’s Smart Ratemaking Conference, Oct. 2009, Los Angeles.

Critical Peak Pricing: Valuation and Viability, presented at AESP's Innovations in Retail Pricing Conference, Chicago, IL, May 17, 2006.

Georgia Power's FlatBill Program, Risks and Returns, presented, with Monamee Adhikari, Georgia Power Company, at AESP's Innovations in Retail Pricing Conference, Chicago, IL, May 17, 2006.

Retail Pricing for Competitive Power Markets, six presentations on retail pricing and unbundling; Infocast conference February 28-March 2, 2001.

Retail Products and Pricing Under Competition, presented at the Canadian Electricity Association's seminar: Setting Up for New Energy Regulation, April 19, 1999.

Using Risk as the Maker of Prices: Risk-Based Pricing, presented at Infocast's conference: Power Industry Retail Pricing, June 23–25, 1999.

"Designing a Retail Pricing Product Mix for a Competitive Market: A C-VALU Case Study," presented at EPRI's Innovative Pricing Conference, Washington, DC, June 18, 1998, (with Kathleen King and David Kulha).

"Retail Products & Pricing in the Competitive Era," presented at IBC Conference: Successfully Implementing Retail Access, Washington, DC, April 27, 1998.

"Risk-Based Pricing: Making Money in Competitive Markets," EMACS Conference, Atlanta, Georgia, October 14, 1997, (with A. Faruqi, EPRI).

"Real-Time Pricing: Becoming Competitive Before Competition," presented at IBC Conference: Successfully Implementing Retail Profit Projects, Atlanta, Georgia, February 24, 1997, and Las Vegas, Nevada, July 17, 1997.

"Effective Retail Product Design for a Competitive Market," IBC Conference: Developing, Negotiating and Contracting Retail Electricity Prices, Atlanta, Georgia, February 24, 1997, (with Kathleen King).

"Innovative Pricing and Data Requirements," presented at the AEIC Load Research Conference, Washington, DC, August 4–6, 1995.

"Lessons Learned and the Path Forward," presented at EPRI's National Conference on Achieving Success in Evolving Electricity Markets, Atlanta, Georgia, October 10–12, 1995 (with Kathleen King).

"A Real-Time Pricing Primer: Service Design for a Competitive Market," presented at the Missouri Valley Electric Association Marketing Division Conference, Kansas City, Missouri, October 13, 1994.

"Real-Time Pricing: Service Design for a Competitive Market," presented at the American Public Power Association workshop, Scottsdale, Arizona, September 28, 1994.

"Customer Response to Real-Time Pricing: Results from Current Experiments," presented at the 6th National Demand-Side Management Conference, Miami Beach, Florida, March 25, 1993.



“Electricity Pricing Innovations for Retail Sales,” presented at the Energy Utilities and Regulation Course, Wisconsin Public Utilities Institute, September 13, 1990; revised and presented again in 1992.

“Innovative Pricing in DSM: Recent Field Tests of Real-Time Pricing,” presented at the Energy Demand-Side Research Seminar Series, University of Wisconsin-Madison, April 4, 1990 (with D. W. Caves).

**Testimony:**

Panelist in Cost-of-Service Methodology review hearings on behalf of Nova Scotia Power, before the Nova Scotia Utilities and Review Board, proceeding NSUARB-NSPI-P-892, Matter No. M05473, December 2013.

# Michael T. O'Sheasy

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### Addresses:

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### Academic Background:

MBA, Georgia State University, 1974  
Bachelors of Industrial Engineering, Georgia Institute of Technology, 1970

### Positions Held:

Vice President, Laurits R. Christensen Associates, Inc., May 2001-present  
Manager, Product Design, Georgia Power Company, 1990-April 2001  
Economic and Costing Analysis Dept, Southern Company Services, 1980-1990

### Professional Experience:

I help utilities develop successful rate cases and new tariff filings based on both embedded and marginal cost of service and contemporary ratemaking principles. Expert testifying is available for both costing and pricing. Clients are encouraged to review and revise their retail portfolios to take advantage of the opportunities of improved pricing efficiency. I advise clients in developing and implementing innovative pricing products that extend utility customers' choices and improve the utility's bottom line and margin coverage. Some other examples of the expertise provided to clients are real time pricing, graduated fixed charges, cost-effective self-generation, advanced marginal costing, more accurate cost allocations methodologies, and fuel cost recovery clause enhancements. Prior to joining Christensen Associates, I directed real-time pricing and other innovative break-through rate structures including Price Protection Products, Daily Energy Credits, and FlatBill at Georgia Power Company, the largest operating company in the Southern Company system. I was responsible for retail and other regulatory requirements. I have routinely testified before various commissions on both costing and pricing. I have published numerous articles on pricing in many journals including *Natural Gas and Electricity*, *TAPPI Journal*, *Public Utilities Fortnightly*, *Electric Perspectives*, *EPRI Journal*, *Energy Customer Management*, and *The Electricity Journal*. On a national media level, I have been interviewed in *USA Today*, *Newsweek*, and National Public Radio. I have been featured on the front page of the *Wall Street Journal*, and I have appeared in a live interview on CNN FN.

**Major Projects:**

**May 2001–Present: Vice President, Christensen Associates Energy Consulting**

Expert Witness on Rate Design regarding distributed energy generation and net energy metering for South Carolina Electric & Gas in their 2014 filing and eventual settlement.

Expert Witness on Rate Design for Wisconsin Electric Company's 2014 rate case.

Expert Witness on Cost of Service for Georgia Power Company's 2013 rate case.

Advised Duke Energy Carolinas regarding redesign of their large business tariff.

Expert Witness on Cost of Service for Gulf Power Company's 2013 rate case.

Expert Witness on Rate Design for Progress Energy Company's 2012 rate case.

Expert Witness on Cost of Service for Gulf Power Company's 2011 rate case.

Advised large mid-west investor owned utility and presented report to the regulatory commission on distribution costing 2012.

Advised a mid-west regulatory commission staff on Base-Intermediate-Peaking (BIP) philosophy.

Expert Witness and Project Manager on costing and pricing for Bermuda Electric Light Company's 2011 rate case.

Project Manager for municipality investigating best applications of energy efficiency and demand response products.

Advised large Midwest IOU and presented to Commission staff and other stakeholders the advantages and disadvantages of performance-based and formulary-based ratemaking.

Led a cost of service and rate redesign project for a Midwest municipality.

Project Manager for a rate strategy project for TVA.

Project Manager and witness for Barbados Light and Power Company for their rate case filing.

Expert witness on cost of service for Georgia Power Company's 2007 rate case.

Consultant to Nova Scotia Power Inc. on Real Time Pricing.

Expert witness for EKPC for their Real Time Pricing pilot filing with the Kentucky Public Service Commission.

Expert witness on cost of service for Gulf Power's rate case.

Consultant to major IOU in Southwest for a retail rate case filing in 2007.

Consultant to Lincoln Electric Service on a cost of service audit.

Consultant to Georgia Power Company on a fixed bill product for mid-size business customers including product design, market research, approval, marketing, and training.

Witness and consultant to Oklahoma Gas & Electric on fixed bill project. Design was completed and approved for implementation.

Consultant to the Electric Power Board on fixed bill design, approval, and tracking.

Consultant to two separate Southeastern utilities on pricing strategy and pricing portfolio design.

Project Manager for Southeastern utility on design of an economic development rate for their largest customer.

Witness for large commercial customers in a major rate case requesting implementation of Real Time Pricing.

Consultant to large Pacific Northwestern utility on Real Time Pricing pilot program.

Consultant and witness to several mid-western utilities on the design and approval of a fixed bill product.

Consultant to utility on Real Time Pricing price response project.

Project Manager for Southeastern utility's research into a time of use fuel clause.

Consultant to mid-Atlantic utility on fixed bill in their competitive electricity market.

Consultant to two mid-west utilities on Real Time Pricing.

Consultant to Georgia Power, Duke Power, Gulf Power Company, and Progress Energy on the design, approval, and implementation of fixed bill products.

Consultant to California Energy Commission on the advancement of Real Time Pricing in California.

Consultant to Caribbean utility on pricing products and rate case filing.

**1990–April 2001, Manager, Product Design, Georgia Power Company**

Responsible for managing the pricing and rates research activities of the Company. Activities included pricing strategy development and future rate planning; rate research, design, and evaluation; the preparation and filing of retail rates with the Georgia Public Service Commission and the forecast of base rate revenues for the corporate budget.

Supported all regulatory proceedings by preparing rate case filings, including rate designs and testimony, training witnesses and briefing counsel for regulatory proceedings. Worked with the Public Service Commission staff and various customer/intervenor groups, providing adequate supporting evidence for obtaining PSC approval and customer acceptance of the proposed tariffs, rules, and regulations.

Developed embedded and marginal cost-of-service by rate or customer group and used these estimates and projections in the profitability assessments needed for innovative pricing strategies, such as demand-side rate options and market-based pricing.

Directed the rate research, design, and evaluation activities of the Company to develop a rate package, which contributed to the Company's marketing, financial, and corporate goals while satisfying the requirements of the Georgia PSC.

Developed innovative rate concepts which support the Company's marketing efforts and contribute to the competitiveness and profitability goals of the Southern Company. Developed long-term competitive pricing strategies and designed rate research programs for potential future rate options for evaluation and implementation. Created innovative pricing methodologies including Real Time Pricing, Multiple Load Management, Multiple Account Management, Interruptible Exchange Service, Flat Bill, and Price Protection Products. Also, directed efforts of "Pricing for the '90s" which will produce the most optimal, efficient pricing methods for Georgia Power Company's needs during the exciting, competitive 2000's.

Managed Real Time Pricing Program. Designed a customer specific profitability model (CPM). Presented over 100 speeches on pricing in state, national, and international forums.

#### **1980–1990, Economic and Costing Analysis Department, Southern Company Services**

Progressed through various levels of responsibility. Positions and activities include:

##### Engineer:

Assisted in the development of Cost-of-Service Studies for rate case filing. Developed jurisdictional and class analysis on individual projects such as PURPA and individual company analysis for internal purpose. Model development such as the Standard Load Flow Model, Georgia Power Cost of Service Model, and CSSM (Cost of Service Simulation Model). Manage the department's Issue File. Training of departmental employees, operating company personnel, and representatives of the Commission.

##### Senior Engineer:

Coordinator for Rate Case filings. Liaison between operating company and rate department. Internal analysis for operating companies and more development of those responsibilities listed under Engineer. Testified as cost expert in rate cases.

##### Supervisor:

Provided economic research and cost of service capability to Gulf Power and Mississippi Power Companies to support retail and wholesale rate filings and other regulatory requirements, and to provide management with pertinent information relative to their rate and regulatory affairs. This position was responsible for supervising the planning, development, evaluation, and formulation of effective economic analysis and related studies to present to internal management or to regulatory agencies, and to marketing for development marketing strategies.

**Professional Papers:**

"Parsing Poles and Towers: Customer Cost Allocations Using the Minimum Distribution System Method," *Public Utilities Fortnightly*, pp. 20-22, January 2016.

"Room for Fixed Billing in the World of Conservation?" *Natural Gas and Electricity*, August 2008.

"Are We On the Yellow Brick Road to the Land of Oz? The Wisdom of Rate Cases Today," EUCI, November 7, 2007.

"An Analysis of the Effects of Renewable Portfolio Standards on Retail Electricity Prices," presented in a webinar on 12/7/07 and EUCI Conference *Rate Case Essentials*, 11/7/07.

"Do You Want to Increase Your Utility's Demand Response and Consider it as a Bigger Player in Resource Planning," Energy Central, August 10 and August 17, 2007.

"Building a Risky Business," *Public Utilities Fortnightly*, March 2007.

"The Fixed Bill: Newborn Becomes Toddler!" Energy Central's EnergyPulse.net, January 3 and January 11, 2005, CyberTech, Inc.

"Building a Better Pricing System," *Public Utilities Fortnightly*, May 2004.

"Demand Response: Not Just Rhetoric, It Can Truly Be the Silver Bullet," *The Electricity Journal*, Vol. 16, Issue 10, pp. 48-60, December 2003.

"How to Perform Efficient TOU Design," *Energy Central's EnergyPulse.net*, July 23, 2003, CyberTech, Inc.

"Who's Afraid of the Fixed-Bill?," *Energy Central's EnergyPulse.net*, April 2003, CyberTech, Inc.

"Is Real-Time Pricing a Panacea? If So, Why Isn't It More Widespread?," *The Electricity Journal*, December, 2002.

"Flat Prices for Peak Hedging," *Public Utilities Fortnightly*, November 1, 2002.

"RTP Customer Demand Response – Empirical Evidence on How Much Can You Expect," in *Electricity Pricing in the Transition*, A. Faruqui and K. Eakin, eds., Kluwer Academic Publishers, 2002.

"Flat Bills, Peak Satisfaction," *Energy Customer Management*, January/February, 2002.

"The New Pricing Organization," EPRI International Pricing Conference, co-authored with Robert Camfield, 2000.

"Roll the Dice, Set a Price," *Public Utilities Fortnightly*, May 15, 1999.

"5-cent Sundays....The Future of Electricity Prices?" *Electric Perspectives*, January/February 1999.

"Real-Time Pricing—Supplanted by Price-Risk Derivatives," *Public Utilities Fortnightly*, March 1, 1997.

"Customers Can Buy Low, Sell High," *The Electricity Journal*, February 1998.

"Real-Time Pricing for Purchased Electricity: An Innovative Pricing Option for Electricity as Used by the Pulp and Paper Industry," *TAPPI Journal*, April 1996.

"Reaping the Benefits of RTP: Georgia Power's RTP Evaluation Case Study," Volumes 1 and 2, Electric Power Research Institute (EPRI), December 1995.

### **Speeches and Presentations:**

"Changes to the Regulatory Framework—a Key Enabler," Panel Moderator; Rate Design Workshop Instructor; October 2010, *Electricity Pricing Strategies*, EUCI.

"Customer Response to Dynamic Pricing: Who Responds and How," webinar, December 2009, EUCI-CAEC.

"Formulary Based Ratemaking for Retail Application," cost of service workshop, October 2008, *Electricity—A Rising Cost Industry*, EUCI.

"Rate Design Tools, Hedging, and the Proper Price Signal," rate design workshop, February, 2008, *Managing Electric Price Volatility*, EUCI.

"Will Renewable Portfolio Standards Increase Rates?" December 2007, EUCI webinar.

"Cost of Service—Are We Doing It Right?" "Providing the Customers Ultimate Bill Security—Fixed Bill," rate design workshop, cost-of-service workshop, November 2007, *Rate Case Essentials*, EUCI.

"Dynamic and Innovative Pricing of Electricity," *Electricity Pricing in Continuously Changing Environments*, EUCI, February 2007.

"Let's Examine How It's Been Done for one of our Industry's Most Risky Products—Fixed Bill," cost-of-service workshop, October 2006, *Rate Case 101—How to Produce a Successful Case*, EUCI.

"Why Perform a Cost of Service Study? What Value does it bring to a Rate Case? What are its Limitations?" "How Can you Obtain Regulatory Approval for Innovative and Novel Rate Designs that Possess Little Industry Exposure?" Cost-of-Service Workshop, May 2006, *Rate Case 101—How to Produce a Successful Rate Case*, EUCI.

"How to Obtain Approval for a Novel, Innovative but Risky Pricing Product like Fixed Bill," Witness Preparation Workshop, November 2005, *Utility Rate Case Management*, INFOCAST.

"How Can You Obtain Internal and Regulatory Approval for Innovative and Novel Rate Designs that Possess Little Industry Exposure?," Cost-of-Service Workshop, October 2005, "Rate Case 101-How to Produce a Successful Case," EUCI.

"How to Obtain Regulatory Approval for Fixed Bill Type Products," Cost-of-Service Workshop, April 2005, *Rate Case 101: How to Produce a Successful Case*, EUCI.

"The Fixed Bill: Innovative Energy, Innovative Rate Option," April 2005, Developing New Products and Services for Utilities, EUCI.

"Digging In—Getting a Fixed-Bill Product Approved and Marketed," "Are There Any New Silver Bullets or Have We Used the Last One?," September 2004, Innovative Products and Services for the Energy Industry.

"Analyze This! The Fixed Bill Case," Successful Retail Products from the People Who Made Them, August 2004.

"Real Time Pricing Coupled with Risk Management at Georgia Power Company. It Keeps on Going and Going!" Peak Load Management Alliance, April 2005, PLMA.

"Introducing Fixed Bill," June 2004, UCI National Conference.

"Real-Time Pricing, Do Customers Really Price Respond?" April 2004, E Source 6th Annual Large C&I Summit.

"Fixed Bill," November 2003, E Source Annual Summit.

"A Summary of the Why's and How's of Real-Time Pricing," October 2003, GAO.

"The Fantasmic Fixed Bill," October 2003, EMAC's 2003, Chartwell's 6<sup>th</sup> International Energy Marketing and Customer Service Conference Expo.

"The Electricity Business Needs A New Sheriff to Keep Law and Order and Maintain Peace; and Here's His Silver Bullet," October 2003, American Bar Association, Section of Environment, Energy, and Resources, 11<sup>th</sup> Section Fall Meeting.

"The Need for Demand Response and Critical Peak Pricing," September 2003, Gulf Power Company's 3<sup>rd</sup> Annual Price Responsive Load Management Conference.

"The Fixed Bill: Innovative Energy, Innovative Rate Option," June 2003, EUCI.

"The Flat Bill Phenomenon," May 2003, Edison Electric Institute/American Gas Association Customer Service Conference and Exposition.

"Fixed Bill Product in an Uncertain Market," and Comments on Demand Response Versus Product Pricing of Electricity, May 2003, AESP/EPRI Pricing Conference.

"Financial Folly or Smart Pricing, Fixed-Bill Options for the Energy Business," April 2003, Energy Central Web Cast.

"The Dollars and Sense of Fixed Bills in a Volatile Wholesale Market," April 2003, EUCI, *Connecting Wholesale and Retail Electricity Markets*.

"Flat Billing—Will It Take the Country by Storm?" February 2003, AESP Brown Bag Seminar.



"Selected Demand Response Programs," October 2002, Committee on Regional Electric Power Cooperation, Vancouver, British Columbia.

"Existing Dynamic Pricing Programs: Lessons Learned and Best Practices," August 2002, *Time-Sensitive Pricing for a Competitive Electricity Marketplace*, NYSERDA.

"Amend Response—A Vital Element of Competitive Markets," July 2002, EEI, *Market Design and Transmission Pricing School*.

"Successful Demand Response Products for Competitive Markets: They Really Work!" May 2002, *New Developments in Electric Market Restructuring* Sponsored by U.S. Association of Energy Economics and the International Energy and Environment Program.

"Customer Pricing Research and Its Critical Role in Designing Pricing—Products for a Regulated Utility," April 2002, American Marketing Association.

"The Price Builder's Workshop,"—Instructor, December 2001, EPRI.

"Innovative Pricing and Load Response: A California Energy Commission Proposal for Giving the Customer a Seat at the Table!" September 2001, International Facility Management Association's World Workplace 2001.

"Real-Time Pricing—How it Works, Benefits and Risks," September 2001, The Center for Business Intelligence, *Pricing in Electric Markets*.

"Real-Time Pricing Overview," June 2001, EMF Workshop on Retail Participation in Competitive Power Markets, Stamford University.

"Real-Time Pricing: Offering Incentives, Caps and Collars," March 2001, Infocast, *Retail Pricing for Competitive Power Markets*.

"Retail Pricing For Competitive Markets,"—Instructor, February 2001, Infocast.

"Real-Time Pricing and Resultant Load Management," November 2000, E-Source, *Energy for a New Era*.

"The Fundamentals of Unbundled Pricing,"—Instructor, September 2000, Infocast.

"Retail Pricing for Competitive Power Markets,"—Instructor, September 2000, Infocast/EPRI.

"International Energy Pricing Conference 2000,"—Program Advisor and Speaker, July 2000, EPRI.

"Pricing in Competitive Markets: Will Customers Accept 'Real-Time' Risks?" November 1999, E-Source, *Dynasties, Dinosaurs, and Dynamos: Energy Services in the 21<sup>st</sup> Century*.

"Cost of Service and Rate Design Workshop," August 1999, Tenaga Nasional Berhad, Kuala Lumpur, Malaysia.

"Retail Pricing: Innovative, Proactive, Value-Based Pricing Strategies for the Competitive Era,"—Instructor, June 1999, Infocast.

"How to Buy Low and Sell High or Why is RTP so Popular?" June 1998, EPRI Fifth Biannual Innovative Pricing Conference.

"Innovative Rate Design," July 1997, *Training Programme for IAS Officers on Public Policy Analysis*, Indian Institute of Management, Ahmedabad, India.

### **Testimony**

Docket No. 2014-246-E before the Public Service Commission of South Carolina on behalf of South Carolina Electric & Gas Company as an expert witness on Costing and Rate Design.

Docket No. 05-UR-107 before the Public Service Commission of Wisconsin on behalf of Wisconsin Electric Power Company as an expert witness on Rate Design.

Docket No. 36989-U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on Cost of Service.

Docket No. 13-0387 before the Illinois Commerce Commission on behalf of Commonwealth Edison Company as their expert witness on Cost of Service.

Docket No. 130140-EI before the Florida Public Service Commission on behalf of Gulf Power Company as their expert witness on Cost of Service.

Docket No. 130007-EI before the Florida Public Service Commission on behalf of Gulf Power Company as their expert witness on Cost of Service.

Docket No. E-2, Sub 1023 before the North Carolina Utilities Commission on behalf of Progress Energy Carolinas, Inc. as their expert witness on Rate Design.

Docket No. E-7, Sub 1026 before the North Carolina Utilities Commission on behalf of Duke Energy Carolinas, LLC as their expert witness on Rate Design regarding the redesign of commercial and industrial OPT tariffs.

Docket No. E-100, Sub 73 before the North Carolina Utilities Commission on behalf of Duke Energy Carolinas, LLC and Duke Energy Progress, Inc. as their expert witness on Rate Design regarding a Jobs Retention Rider(JRT).

Docket No. 110138–EI before the Florida Public Service Commission on behalf of Gulf Power Company as their expert witness on cost of service.

Base Rate Tariff Filing – October 26, 2011 before The Energy Commission, Bermuda on behalf of Bermuda Electric Light Company Limited, as expert witness on rate design.

Docket No. 25060–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on Cost of Service.

Docket No. 31958–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on Cost of Service.

Docket No. 010949–EI before the Florida Public Service Commission on behalf of Gulf Power Company as their expert witness on Cost of Service.

Docket No. 881167–EI before the Florida Public Service Commission on behalf of Gulf Power Company as their expert witness on Cost of Service.

Docket No. 4147–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on rate design.

Case No. 2006–00045 Commonwealth of Kentucky before the Public Service Commission on behalf of East Kentucky Electric Cooperative as their expert witness on rate design.

Docket No. 050078–EI before the Florida Public Service Commission on behalf of the Commercial Group as their expert witness on cost of service and rate design.

Docket No. 16896–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on rate design.

Case No. 2004 Commonwealth of Kentucky before the Public Service Commission on behalf of East Kentucky Electric Cooperative as their expert witness on rate design.

Cause No. PUD 200500151 before the Corporation Commission of the State of Oklahoma on behalf of Oklahoma Gas and Electric as their expert witness on rate design.

Docket No. 4132–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on rate design.

Docket No. 4755–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on rate design.

Docket No. 11708–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on rate design.

Docket No. 13140–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on rate design.

Docket No. 16896–U before the Georgia Public Service Commission on behalf of Georgia Power Company as their expert witness on rate design.

FTC-02/09 BL&P–RADJ before the Barbados Fair Trading Commission on behalf of Barbados Light & Power Company as their expert witness on cost of service and rate design.

# Robert J. Camfield

## RESUME

January 2016

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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:**

Regulatory Report: "Methodology: Estimation of Marginal Costs of Generation and Transmission Services for 2019, 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:**

“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 Glycer 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 Glycer, 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:**

Seminar regarding *The Organization of Electricity Markets* in the Engineering Physics survey class NE-571, University of Wisconsin, 2015.

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 Faruqui).

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.