

Nick Crowley

RESUME

January 2024

Address:

Laurits R. Christensen Associates, Inc.
800 University Bay Drive, Suite 400
Madison, WI 53705-2299
Telephone: 608.216.7170
Email: nacrowley@caenergy.com

Academic Background:

Master of Science – University of Wisconsin-Madison, 2014, Economics
Bachelor of Arts – University of Wisconsin-Madison, 2012, Economics

Positions Held:

Vice President, Laurits R. Christensen Associates, Inc., Jan. 1, 2024-present
Senior Economist, Laurits R. Christensen Associates, Inc., Sept. 1, 2021-Dec. 2023
Economist, Laurits R. Christensen Associates, Inc., 2019-Aug. 31, 2021
Staff Economist, Laurits R. Christensen Associates, Inc., 2016-2018
Economist, Federal Energy Regulatory Commission, 2015-2016

Professional Experience:

I am an expert witness on issues in utility regulation, with an emphasis on rate design, regulatory finance, and productivity measurement. In my time as a consultant, I have testified on behalf of major public utilities in rate proceedings, measured cost of capital and assembled corresponding reports, developed alternative rate designs, and forecasted electricity load for supply planning purposes. I have also performed extensive research for benchmarking purposes using publicly available data. My work includes marginal cost estimation and the development of marginal cost models for major electric utilities. My reports have been filed before regulatory authorities across North America. Prior to joining Christensen Associates Energy Consulting, I served as an Economist at the Federal Energy Regulatory Commission, where I assisted with energy industry benchmarking, market power studies, and the review and evaluation of natural gas pipeline rate cases. I have deep facility with Stata and Excel, in addition to other software packages used in quantitative analysis.

PUBLIC TESTIMONY

"Direct Testimony of Nicholas A. Crowley," Nicholas A. Crowley, MS, New Hampshire Department of Energy, Docket DE 23-039, December 13, 2023.

"Direct Testimony of Nicholas A. Crowley," Nicholas A. Crowley, MS, Michigan Public Service Commission, Case No. U-21488, December 11, 2023.

"Direct Testimony of Nicholas A. Crowley," Nicholas A. Crowley, MS, Massachusetts D.P.U., D.P.U. 23-150, August 17, 2023.

"Direct Testimony of Nicholas A. Crowley," Nicholas A. Crowley, MS, Massachusetts D.P.U., D.P.U. 23-80 AND D.P.U. 23-81, August 17, 2023.

"Rebuttal Evidence," Mark E. Meitzen, Ph.D. and Nicholas A. Crowley, MS, Alberta Utilities Commission, Proceeding 27388, April 28, 2023.

"Determination of the Third-Generation X Factor for the AUC Price Cap Plan," Mark E. Meitzen, Ph.D. and Nicholas A. Crowley, MS, Alberta Utilities Commission Proceeding 27388, January 20, 2023.

"Rebuttal Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS," Massachusetts D.P.U. 22-22, June 10, 2022.

"Direct Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS," Massachusetts D.P.U. 22-22, January 14, 2022.

"Rebuttal Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS," Massachusetts D.P.U. 20-120, April 23, 2021.

"Direct Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS," Massachusetts D.P.U. 20-120, November 13, 2020.

PUBLICATIONS

"2022 Load Impact Evaluation of San Diego Gas and Electric's Voluntary Residential Critical Peak Pricing (CPP) and Time-of-Use (TOU) Rates." (with Michael Ty Clark and Aidan Glaser-Schoff)

"2021 Load Impact Evaluation of San Diego Gas and Electric's Voluntary Residential Critical Peak Pricing (CPP) and Time-of-Use (TOU) Rates." (with Michael Ty Clark and Aidan Glaser-Schoff)

"Measuring the Price Impact of Price-Cap Regulation Among Canadian Electricity Distribution Utilities." *Utilities Policy*. Vol. 72, October 2021. (with Dr. Mark Meitzen)

"2020 Load Impact Evaluation of San Diego Gas and Electric's Voluntary Residential Critical Peak Pricing (CPP) and Time-of-Use (TOU) Rates." (with Michael Ty Clark and Navya Kataria)

"2019 Load Impact Evaluation of San Diego Gas and Electric's Voluntary Residential Critical Peak Pricing (CPP) and Time-of-Use (TOU) Rates." (with Michael Ty Clark)

"2018 Load Impact Evaluation of San Diego Gas and Electric's Voluntary Residential Critical Peak Pricing (CPP) and Time-of-Use (TOU) Rates." (with Michael Ty Clark)

"2017 Load Impact Evaluation of California Statewide Base Interruptible Programs (BIP) for Non-Residential Customers: Ex-post and Ex-ante Report." (with Michael Ty Clark and Dan Hansen)

"2017 Load Impact Evaluation of San Diego Gas and Electric's Voluntary Residential Critical Peak Pricing (CPP) and Time-of-Use (TOU) Rates." (with Michael Ty Clark and Dan Hansen)

"2016 Load Impact Evaluation of Pacific Gas and Electric Company's Residential Time-Based Pricing Programs: Ex-post and Ex-ante Report for Customers with Net Energy Metering." (with Michael Ty Clark and Dan Hansen)

"2016 Load Impact Evaluation of Pacific Gas and Electric Company's Mandatory Time-of-Use Rates for Small, Medium, and Agricultural Non-residential Customers: Ex-post and Ex-ante Report." (with Michael Ty Clark and Dan Hansen)

CONFERENCE PRESENTATIONS

"Essentials of Costing: Embedded and Marginal Cost." With Bruce Chapman. Wisconsin Public Utility Institute. *Energy Utility Basics*. October 10, 2023.

"Rate Design for Revenue Adequacy and Price Efficiency." With Bruce Chapman. Edison Electric Institute. Hosted at the University of Wisconsin-Madison. July 2023.

"Marginal Costs of Electricity Services." Edison Electric Institute. Hosted at the University of Wisconsin-Madison. July 2023.

"Introduction to Performance-Based Regulation." EUCI Workshop. Virtual. May 2023.

"Introduction to Retail Electricity Regulation for FERC Staff." Federal Energy Regulatory Commission, Office of Energy Market Regulation Training Council. Virtual. February 2023.

"Marginal Costs of Electricity Services." EUCI Workshop. Virtual. February 2023.

"Rate Design for Revenue Adequacy and Price Efficiency." Wisconsin Public Utility Institute. *Energy Utility Basics*. October 4, 2022.

"Rate Innovation for Cooperatives and Public Power." EUCI Workshop. Virtual. March 2022.

"Marginal Costs of Electricity Services." EUCI Workshop. Virtual. March 2022.

"Ratemaking Under Performance-Based Regulation." EUCI Workshop. Virtual. February 2022.

"Ratemaking Under Performance-Based Regulation." EUCI Workshop. Virtual. November 2021.

"Rate Design for Revenue Adequacy and Price Efficiency." Wisconsin Public Utility Institute. *Energy Utility Basics*. October 2, 2021.

"Rate Design and the Potential Impacts of Covid-19." EUCI Workshop. Virtual. November 17, 2020.

"Ratemaking Under Performance-Based Regulation." EUCI Workshop. Atlanta, Georgia. March 9, 2020.

"Load Impact Evaluation: *Base Interruptible Program*." DRMEC Spring Workshop, California Public Utilities Commission. April 26, 2019.

"FERC Regulatory Policy and Relevant Environmental Issues, Focusing on the United States Natural Gas Grid," 2015 Energy Hub Conference. Hosted at the University of Wisconsin-Madison.

REPORTS AND WORKING PAPERS

"BC Hydro Performance-Based Regulation Framework," For the British Columbia Hydro and Power Authority." With Dr. Daniel McLeod and Dr. Mark Meitzen. December 21, 2023.

"Long Term Avoided Costs, for assessment of Resource Options Including Conservation Programs and LED Lighting." For Florida Public Utilities Company. 2021.

"Cost of Capital Study." For Grand Bahama Power Company, Ltd. April 15, 2021.

"Cost of Capital Study." St. Croix Valley Natural Gas Company, Inc. June 20, 2019.

"Methodology and Cost Estimates for Generation and Transmission Services, 2021-2029." For Newfoundland and Labrador Hydro. November 15, 2018.

"Cost of Capital Study." Grand Bahama Power Company, Ltd. October 17, 2018.

"Common Metrics Report: Performance Metrics for Regional Transmission Organizations, Independent System Operators, and Individual Utilities for the 2010-2014 Reporting Period." *Federal Energy Regulatory Commission Staff Report*, 2016.

COMPUTER/PROGRAMMING SKILLS: Deep knowledge of Excel and STATA for data analysis; experience with R, SAS, and Python for API data acquisition and manipulation.

Daniel McLeod

RESUME

January 2024

Address:

Laurits R. Christensen Associates, Inc.
800 University Bay Drive, Suite 400
Madison, WI 53705-2299
Telephone: 608.216.7125
Email: dpmcleod@lrca.com

Academic Background:

PhD, University of Wisconsin-Madison, 2021, Economics
MS, University of Wisconsin-Madison, 2014, Economics
BA, University of Wisconsin-Madison, 2013, Economics

Positions Held:

Economist, Laurits R. Christensen Associates, Inc., July 2021-present
Staff Economist, Laurits R. Christensen Associates, Inc., 2015

Professional Experience:

I have worked in the areas of antitrust and competition, economic cost measurement in the airline and railroad industries, and productivity measurement in the postal and electric utility industries. Additionally, in the energy practice, I have been involved in the calibration of price and revenue caps, helped design and evaluate incentive regulation plans, performed and critiqued cost benchmarking studies, and estimated the load impacts of EV smart charging algorithms and critical peak pricing demand response programs.

My academic background is in empirical industrial organization and applied econometrics. In addition to teaching introductory microeconomics to undergraduate students, I have taught introductory econometrics for five semesters and a course in machine learning to graduate students. My research proposed a novel econometric approach to estimating marginal costs in the airline industry and quantified the impacts of airline mergers using both structural models of the industry and emerging deep learning algorithms.

Working Papers:

"Approaches for Establishing Indexed Cap Stretch Factors" (with Nick Crowley and Kevin Roth)
"Structural Estimation in the Airline Industry with Markup Restrictions"
"Cost Sharing During Periods with Low Airline Passenger Demand" (job market paper)
"Predicting the Price Effect of Horizontal Mergers" (with Lorenzo Magnolfi)

Programming Skills:

R, Stata, Python, Excel

Mark E. Meitzen

RESUME

December 2023

Address:

Laurits R. Christensen Associates, Inc.
800 University Bay Drive, Suite 400
Madison, Wisconsin 53705-2299
Telephone: 608.513.7455
Email: memeitzen@LRCA.com

Academic Background:

PhD, University of Wisconsin–Madison, 1982, Economics
MS, University of Wisconsin–Madison, 1979, Economics
BS, University of Wisconsin–Oshkosh, 1976, Economics

Positions Held:

Senior Consultant, present
Vice President, Laurits R. Christensen Associates, Inc., 1998–2016
Director-Telecommunications, Laurits R. Christensen Associates, Inc., 1993–1998
Senior Economist, Laurits R. Christensen Associates, Inc., 1990–1993
Regulatory Economist, Southwestern Bell Telephone Company, 1988–1990
Regional Economist, Southwestern Bell Telephone Company, 1986–1988
Adjunct Faculty, Saint Louis University, St. Louis, Mo., 1987–1990
Visiting Assistant Professor of Economics, University of Wisconsin-Milwaukee, 1984–1985
Assistant Professor of Economics, Eastern Michigan University, 1981–1984

Professional Experience:

I have expertise in the economic analysis of network industries including telecommunications, electricity, postal and railroad. This experience includes cost and productivity analysis, and the design of incentive regulation plans. I have directed analyses and testified in a number of jurisdictions in the U.S. and elsewhere on these issues, including the Federal Communications Commission, the Alberta (Canada) Utilities Commission, OSIPTEL (Peru), and the U.S. Surface Transportation Board. I also have experience as an expert witness on economic damages in civil litigation cases on a range of issues, including antitrust, intellectual property, breach of contract, and employment issues.

Publications:

"Measuring the Price Impact of Price-Cap Regulation Among Canadian Electricity Distribution Utilities," *Utilities Policy*, 72 (2021) (with N. Crowley)

"Debunking the Mythology of PBR in Electric Power," *The Electricity Journal*, 31 (2018), (with P. E. Schoech and D. L. Weisman).

"The Alphabet of PBR in Electric Power: Why X Does Not Tell the Whole Story," *The Electricity Journal*, 30 (2017), (with P. E. Schoech and D. L. Weisman).

"Minnesota Freight Rail Economic Development," prepared for the Minnesota Department of Transportation and the Minnesota Department of Employment and Economic Development, November 2013.

"Preserving and Protecting Freight Infrastructure and Routes," *TR News* No. 284, Jan-Feb 2013.

"NCFRP Report 16: Preserving and Protecting Freight Infrastructure and Routes," Transportation Research Board of the National Academies, 2012.

"Preserving and Protecting Freight Infrastructure and Routes," *Proceedings of the ASME/ASCE/IEEE 2012 Joint Rail Conference*, April 2012 (with L. Loftus-Otway, R. Grow, N. Hutson, and A. Bruening).

"Railroad Performance Under the Staggers Act," *Regulation*, Vol. 33, No 4 – Winter 2010–2011 (with B. K. Eakin, A. T. Bozzo, and P. E. Schoech).

"Incentive Regulation in Network Industries: Experience and Prospects in the U.S. Telecommunications, Electricity and Natural Gas Industries," *Review of Network Economics*, Vol. 2, Issue 4 - December 2003, pp. 316–337, (with R. C. Hemphill and P. E. Schoech).

"Total Factor Productivity in the Telecommunications Industry," in *International Handbook on Telecommunications Economics*, G. Madden and S. Savage, eds., 2003, (with L. R. Christensen and P. E. Schoech).

"Pricing Network Elements Under the Telecommunications Act of 1996: Back to the Future," *Comm/ENT*, Summer 2001, (with S. Massa and S. G. Parsons).

"Controlling for Cross Subsidization in Electric Utility Regulation," Edison Electric Institute, September 1998, (with L. Kaufmann and M. Lowry).

"Where Do We Go from Here?" *Public Utilities Fortnightly*, June 15, 1993, (with L. R. Christensen and P. E. Schoech).

"Recent State Legislation for Telecommunications: Brave New World or Bad Public Utility Law?" *George Mason University Law Review*, Vol. 14, No. 1, Fall 1991, (with A. C. Larson). Reprinted in *Public Utility Law Anthology*, Vol. 15, Part 2, July-December 1992, Allison P. Zabriske, ed., (Gaithersburg MD: International Library Book Publishers, Inc.) 1992, pp. 433–491.

"The Uses and Abuses of Stand-Alone Costs," *Utilities Policy*, April 1992, (with A. C. Larson). Shorter, nontechnical version appeared as "The Use of Stand-Alone Cost in Public Utility Regulation," *National Estimator*, spring 1992.

"The Shared Cost Problem and Cash Cow Economics: Who Gets Milked?" *Public Utilities Fortnightly*, April 1, 1991.

"Diversification of Telephone Company Service Offerings and Cash Cow Economics: Who Gets Milked?" *Utilities Policy*, October 1990.

Cost and Pricing Principles for Telecommunications: An Anthology, Washington: United States Telephone Association, September 1990, (co-edited with A. C. Larson).

"The LEC's Transition to Full Competition: The Response of Regulation," *The Computer Lawyer*, July 1990, (with T. J. Schroepfer).

"Differential Compensation and Worker Turnover," *Journal of Economics*, 1989, (with L. Brannman).

"Differences in Male and Female Job Quitting Behavior," *Journal of Labor Economics*, 1986.

"The Impact of Unionism on Exit and Voice Decisions in the Labor Market," *Journal of Economics*, 1984, (with S. Hayworth).

"Empirical Analysis of the Rate of Worker Separation," in *Subsidizing On-the-Job Training*, Columbus, OH: National Center for Research in Vocational Education, 1982.

Presentations at Workshops and Professional Meetings:

"PBR in the Electric Utility Industry," EUCI, November 2021.

"PBR in the Electric Utility Industry," EUCI, March 2020.

"Adoption of Broad-Based PBR Indexing Plans in Electric Distribution," Wisconsin Public Utilities Institute, July 2017 (with Dennis Weisman).

"Preserving and Protecting Freight Infrastructure and Routes, Findings from NCFRP 24," Transportation Research Board Annual Meetings, January 2012.

"Preserving and Protecting Freight Infrastructure and Routes, Findings from NCFRP 24," Federal Highway Administration, Talking Freight Seminar, August 2011.

"Preserving and Protecting Freight Infrastructure and Routes," NCFRP24 Workshop, January 2011.

"Preserving and Protecting Freight Infrastructure and Routes," Minnesota Freight Advisory Committee, October 2010.

"An Update to the Study of Competition in the U.S. Freight Railroad Industry," Midwest Association of Rail Shippers, July 2010.

Overview of the Christensen Associates' Railroad Industry Studies," National Coal Transportation Association, September 2009.

"Overview of the Christensen Associates' Railroad Industry Studies," Midwest Association of Rail Shippers, July 2009.

"A Study of Competition in the Railroad Industry and Analysis of Proposals to Enhance Competition, A Progress Report," National Coal Transportation Association, April 2008.

"A Study of Competition in the Railroad Industry and Analysis of Proposals to Enhance Competition, A Progress Report," Midwest Association of Rail Shippers, January 2008.

"Economics of Price Erosion Using Available Data," Law Seminars International Patent Damages Workshop, Chicago, IL, April 2004.

"Economics of Price Erosion and Lost Conveyed Sales Using Available Data," Law Seminars International Patent Damages Workshop, Chicago, IL, April 2003 (with J. Cordray).

"Local Exchange Competition," Wisconsin Public Utility Institute, Madison, WI, April 2003.

"Patent Damages: Analyzing the Market But-For Infringement," presented to the Milwaukee Bar Association's Intellectual Property Section, May 2000, (with C. Degen).

"Implementation of Price Cap Regulation—The FCC Experience," Wisconsin Public Utility Institute, Madison, WI, September 1999.

"Costs of Universal Service," Wisconsin Public Utility Institute, Madison, WI, March 1997.

"Unbundled Network Elements and Economic Cost Standards," Wisconsin Institute of Certified Public Accountants, Madison, WI, October 1997.

"The Uses and Abuses of Stand-Alone Costs," Second Prize winner in the Research Awards Competition of the Eleventh Annual Southeastern Public Utilities Conference, Atlanta, GA, September 23, 1991.

"Diversification of Telephone Company Service Offerings and Cash Cow Economics: Who Gets Milked?" First Prize winner in the Research Awards Competition of the Tenth Annual Southeastern Public Utilities Conference, Atlanta, GA, August 1990. Also presented at the Third Annual Western Conference of the Rutgers University Advanced Workshop in Regulation and Public Utility Economics, San Diego, CA, July 1990.

"Financial Market Implications of Competition and Regulation in the Telecommunications Industry," Eighth Annual Conference of the Rutgers University Advanced Workshop in Regulation and Public Utility Economics, Newport, RI, May 1989.

"Foreign Trade in Telecommunications Equipment," Second prize winner in the papers competition held in conjunction with the Eleventh Annual Midwestern Telecommunications Conference, Minneapolis, MN, October 1988.

"Perspectives on Local Exchange Competition," Presented at the Seventh Bi-Annual Conference of the International Telecommunications Society, Cambridge, MA, June 1988.

"The Effects of Market Signals on the Construction of Incentive Contracts in a Principal-Agent Model: The Case of the Academic Labor Market," 1984 Atlantic Economics Society Conference, Montreal, Canada, (with B. Woodland).

"The Role of Voice Mechanisms in Workers' Participation in and Satisfaction with Unions," 1984 Midwest Economics Association Convention, Chicago, IL.

"Hedonic Wage Models and Worker Turnover," 1984 Midwest Economics Association Convention, Chicago, IL.

"The Impact of Unionism on Exit and Voice Decisions in the Labor Market," 1984 Missouri Valley Economics Association Convention, Kansas City, MO, (with S. Hayworth).

"Differences in Male and Female Job Quitting Behavior," 1983 Midwest Economics Association Convention, St. Louis, MO.

Non-Confidential Consulting Reports and Research Papers:

Direct Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS, Massachusetts D.P.U. 23-150, November 16, 2023.

"Rebuttal Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS," Massachusetts D.P.U. 22-22, June 10, 2022.

"Direct Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS," Massachusetts D.P.U. 22-22, January 14, 2022.

"Rebuttal Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS," Massachusetts D.P.U. 20-120, April 23, 2021.

"Direct Testimony of Mark E. Meitzen Ph.D. and Nicholas A. Crowley, MS," Massachusetts D.P.U. 20-120, November 13, 2020.

"Rebuttal Testimony of Mark E. Meitzen, Ph.D.," Massachusetts Department of Public Utilities Docket No. D.P.U. 18-150, April 22, 2019.

"Pre-Filed Direct Testimony of Mark E. Meitzen, Ph.D.," Massachusetts Department of Public Utilities Docket No. D.P.U. 18-150, November 15, 2018.

"Rebuttal Testimony of Mark E. Meitzen, Ph.D., Dennis L. Weisman, Ph.D., and Carl G Degen," Massachusetts Department of Public Utilities Docket No. D.P.U. 17-05, May 19, 2017.

"Direct Testimony of Mark E. Meitzen, Ph.D.," Massachusetts Department of Public Utilities Docket No. D.P.U. 17-05, January 17, 2017

"Supplemental Declaration of Mark E. Meitzen, Ph.D. and Philip E. Schoech, Ph.D.," Federal Communications Commission, WC Docket No. 16-143, *et. al.*, September 22, 2016.

"Reply Comments of Mark E. Meitzen, Ph.D. and Philip E. Schoech, Ph.D.," Federal Communications Commission, WC Docket No. 16-143, *et. al.*, August 9, 2016.

"Assessment of the FCC's Proposed Options for the Special Access Price Cap X-Factor (with P.E. Schoech), Federal Communications Commission, WC Docket No. 16-143, *et. al.*, June 28, 2016.

"Determination of the Second-Generation X Factor for the AUC Price Cap Plan for Alberta Electric Distribution Companies," Alberta Utilities Commission Proceeding ID 20414, March 2016.

"Revisiting the CPI-Based Price Cap Formula for the U.S. Postal Service," 2012 Eastern Conference of the Center for Research in Regulated Industries, May 2012 (with P. Schoech and M. Kubayanda).

"An Update to the Study of Competition in the U.S. Freight Railroad Industry," prepared for the U.S. Surface Transportation Board, January 2010 (Christensen Associates).

"Supplemental Report to the U.S. Surface Transportation Board on Capacity and Infrastructure Investment," prepared for the U.S. Surface Transportation Board, March 2009 (Christensen Associates).

"A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition," prepared for the U.S. Surface Transportation Board, November 2008 (Christensen Associates).

"Comments of the Minnesota Department of Commerce," *in the Matter of Commission Investigation of Cost for Appropriate Level of Universal Service Support*, Minnesota Docket No. P999/CI-00-829 (Minnesota Department of Commerce).

"Productivity Performance of the Wisconsin Local Exchange Carrier Industry," and "Comments of Christensen Associates on Consultant Productivity Studies," January 2003, Wisconsin PSC Docket 1-AC-193, (with L. R. Christensen, P. E. Schoech, and S. M. Schroeder).

"Determination of the X Factor for the Regulation of Telefonica del Peru," August 2001, (with P. E. Schoech, C. Smyser, and S. M. Schroeder).

"The Ameritech Illinois Total Factor Productivity Study," June 2000, Illinois Commerce Commission Docket 98-0252, (with P. E. Schoech and S. M. Schroeder).

"Market Power Study of the Potomac River, Benning Road, and Buzzard Point Power Plants," Final Report to Potomac Electric Power Company, April 2000, (with F. L. Alvarado, L. D. Kirsch, S. D. Braithwait, B. K. Eakin, S. L. Greene, R. Rajaraman, and J. D. Reaser).

"Price Cap Design and X Factor Estimation for Peruvian Telecommunications Regulation," Final Report to OSIPTEL, May 1999, (with L. R. Christensen, P. E. Schoech, L. D. Kirsch, C. A. Herrera, and S. M. Schroeder).

"Analysis of Benchmark Cost Proxy Model 3.0, Hatfield Model, Version 5.0 and Hybrid Cost Proxy Model," Federal Communications Commission, CC Docket 96-45, January 1998, (with A. T. Bozzo, T. Rutkowski, and T. Grau).

"Analysis of Benchmark Cost Proxy Model and Hatfield Release 3.1," Federal Communications Commission, CC Docket 96-45, April 1997, (with L. R. Christensen, P. E. Schoech, A. T. Bozzo, and T. Rutkowski).

"The TFPRP Provides the Best Basis for Determining the Rate of LEC TFP Growth," Federal Communications Commission, CC Docket 94-1, February 1997, (with L. R. Christensen and P. E. Schoech).

"Appropriate Standards for Cost Models and Methodologies," Federal Communications Commission, CC Docket 96-45, Final Report to United States Telephone Association, February 1997.

"Updated Results for the Simplified TFPRP Model and Response to Productivity Questions in FCC's Access Reform Proceeding," Federal Communications Commission, CC Docket 94-1, January 1997, (with L. R. Christensen and P. E. Schoech).

"Economic Evaluation of Proxy Cost Models for Determining Universal Service Support," Federal Communications Commission, CC Docket 96-45, January 1997.

"A Survey of X-Factor Experience in the United States," filed with Canadian Radio and Telecommunications Commission on behalf of Stentor Member Companies, June 1996, (with L. R. Christensen and P. E. Schoech).

"An Evaluation of the Bell Canada, BC TEL, MTS NetCom Inc., and Maritime Tel & Tel Limited Total Factor Productivity Studies," filed with Canadian Radio and Telecommunications Commission on behalf of Stentor Member Companies, June 1996, (with L. R. Christensen and P. E. Schoech).

"Total Factor Productivity Methods for Local Exchange Carrier Price Cap Plans: Reply Comments," Federal Communications Commission, CC Docket 94-1, March 1996, (with L. R. Christensen and P. E. Schoech).

"Total Factor Productivity Methods for Local Exchange Carrier Price Cap Plans," Federal Communications Commission, CC Docket 94-1, December 1995, (with L. R. Christensen and P. E. Schoech).

"Productivity of the Local Operating Telephone Companies Subject to Price Cap Regulation 1993 Update," Federal Communications Commission, CC Docket 94-1, January 1995, (with L. R. Christensen and P. E. Schoech).

"Productivity Growth in the Cable Television Industry," filed with Federal Communications Commission on behalf of the National Cable Television Association, June 1994, (with L. R. Christensen and P. E. Schoech).

"Productivity of the Local Operating Telephone Companies Subject to Price Cap Regulation," Federal Communications Commission, CC Docket 94-1, May 1994, (with L. R. Christensen and P. E. Schoech).

"Sources and Methods for the Ohio Bell Total Factor Productivity Study," Public Utilities Commission of Ohio, Case No. 93-487-TP-ALT, 1993, (with L. R. Christensen and P. E. Schoech).

"Sources and Methods for the Illinois Bell Total Factor Productivity Study," Illinois Commerce Commission, Case No. 92-0448, December 1992, (with L. R. Christensen and P. E. Schoech).

Expert Testimony – Regulatory Proceedings

"Rebuttal Evidence," Mark E. Meitzen, Ph.D. and Nicholas A. Crowley, MS, Alberta Utilities Commission Proceeding 27388, April 28, 2023.

"Determination of the Third-Generation X Factor for the AUC Price Cap Plan," Mark E. Meitzen, Ph.D. and Nicholas A. Crowley, MS, Alberta Utilities Commission Proceeding 27388, January 20, 2023.

Massachusetts Department of Public Utilities, *Performance-Based Distribution Ratemaking Plan for NSTAR Electric Company d/b/a Eversource Energy*, D.P.U. 22-22, May 2022.

Massachusetts Department of Public Utilities, *Performance-Based Distribution Ratemaking Plan for Boston Gas Company and Colonial Gas Company each d/b/a National Grid*, D.P.U. 20-120, May 2021.

Massachusetts Department of Public Utilities, *Massachusetts Electric Company and Nantucket Electric Company each d/b/a National Grid, Investigation as to the Propriety of Proposed Tariff Changes*, D.P.U. 18-150, May 2019.

Massachusetts Department of Public Utilities, *Petition of NSTAR Electric Company and Western Massachusetts Electric Company each d/b/a Eversource Energy for Approval of an Increase in Base Distribution Rates of Electric Service*, D.P.U. 17-05, June 2017.

Alberta Utilities Commission, *Next Generation Performance-Based Regulation Generic Proceeding*, AUC Proceeding ID 20414, July 2016.

Federal Communications Commission, *Special Access for Price Cap Local Exchange Carriers*, WC Docket No. 16-143, WC Docket No. 15-247, WC Docket 05-25, June 2016, August 2016.

Before the U.S. Surface Transportation Board, "Joint Verified Statement of B. Kelly Eakin, Mark E. Meitzen, and Philip E. Schoech," STB Ex Parte No. 722, Railroad Revenue Adequacy, September 2014.

Before the U.S. Surface Transportation Board, "Joint Verified Statement of B. Kelly Eakin and Mark E. Meitzen," STB Docket No. NOR 42121, Total Petrochemicals & Refining USA, INC. v. CSX Transportation, Inc., June 2013.

Before the U.S. Surface Transportation Board, "Joint Verified Reply Statement of B. Kelly Eakin and Mark E. Meitzen," STB Ex Parte No. 711, Petition for Rulemaking to Adopt Revised Competitive Switching Rules, May 2013.

Before the U.S. Surface Transportation Board, "Joint Verified Statement of B. Kelly Eakin and Mark E. Meitzen," STB Ex Parte No. 711, Petition for Rulemaking to Adopt Revised Competitive Switching Rules, March 2013.

Before the U.S. Surface Transportation Board, "Joint Statement of B. Kelly Eakin and Mark E. Meitzen," STB Docket No. NOR 42125, E.I. DuPont De Nemours and Company v. Norfolk Southern Railway Company, November 2012

Before the U.S. Surface Transportation Board, "Joint Verified Statement of B. Kelly Eakin and Mark E. Meitzen," STB Docket No. NOR 42123, M&G Polymers USA, LLC v. CSX Transportation, Inc., November 2012.

Before the U.S. Surface Transportation Board, "Joint Verified Statement of B. Kelly Eakin and Mark E. Meitzen," STB Ex Parte No. 705, Competition in the Railroad Industry, May 2011.

Before the U.S. Surface Transportation Board, "A Study of Competition in the U.S. Freight Railroad Industry and Analysis of Proposals that Might Enhance Competition, Final Report," November 2008.

Client: Coal Shippers Coalition (2006)
Proceeding: Surface Transportation Board Ex Parte No. 657 (Sub-No. 1)

Client: AEP Texas North (2004)
Proceeding: Surface Transportation Board Docket No. 41191

Client: OSIPTEL (2003)
Proceeding: TdP Price Cap Implementation (Peru)

Client: OSIPTEL (2002)
Proceeding: TdP Price Cap Implementation (Peru)

Client: OSIPTEL (2001)
Proceeding: TdP Price Cap Implementation (Peru)
Client: Ameritech Illinois (2001)
Proceeding: ICC Docket No. 98-0252

Client: Texas Municipal Power Agency (2001)
Proceeding: Surface Transportation Board Docket No. 42056

Client: Reliant Energy HL&P (2000)
Proceeding: Texas SOAH Docket No. 473-00-1020, Texas PUC Docket No. 22355

Client: Frontier Communications (1999)
Proceeding: MPSC Case No. U-12049

Client: TDS Telecom (1998)
Proceeding: MPSC Case No. U-11815

Client: Mid-Plains Telephone (1997)
Proceeding: PSCW Dockets 3650-MA-100 and 5845-MA-100

Client: Washington Independent Telephone Association (1997)
Proceeding: WUTC Docket UT-960369

Client: Michigan Exchange Carriers Association (1997)
Proceeding: MPSC Case No. U-11448

Client: Wisconsin State Telephone Association (1996)
Proceeding: PSCW Docket 05-TI-137

Client: Ameritech Illinois (1995)
Proceeding: ICC Docket 95-0458

Client: Southwestern Bell Corporation Media Ventures (1994)
Proceeding: Maryland PSC Docket 8659

Client: Ameritech Illinois (1993)
Proceeding: ICC Docket 92-0211

Client: Urban Telephone Company (Wisconsin) (1992)
Proceeding: PSCW Docket 6050-TI-100