

David P. Brown

CONTACT INFORMATION

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EMPLOYMENT

Canada Research Chair, Energy Economics and Policy, University of Alberta 2020 - Present
Associate Professor, Department of Economics, University of Alberta 2019 - Present
Assistant Professor, Department of Economics, University of Alberta 2014 - 2019

AFFILIATIONS & APPOINTMENTS

President, Canadian Association for Energy Economics 2020 - Present
Research Fellow, Institute for Public Economics, University of Alberta 2016 - Present
Research Associate, Institute for Child Health Policy, University of Florida 2011 - 2014

EDUCATION

Ph.D., Economics, University of Florida, May 2014
Dissertation: Three Essays on Market Power in Restructured Electricity Markets
M.A., Economics, University of Florida, May 2011
B.S., Quantitative Economics and Mathematics, Miami University of Ohio, May 2009

RESEARCH INTERESTS

Primary: Energy Economics, Industrial Organization, and Regulation
Secondary: Applied Econometrics and Environmental Economics

PUBLICATIONS

1. "Pricing Patterns in Wholesale Electricity Markets: Unilateral Market Power or Coordinated Behavior?" *Forthcoming at Journal of Industrial Economics* (with Andrew Eckert).
2. "Vertical Integration and Capacity Investment in the Electricity Sector" *Forthcoming at Journal of Economics and Management Strategy* (with David Sappington).
3. "On the Profitability of Self-Sabotage," *Canadian Journal of Economics*, March 2021 (with David Sappington).
4. "Measuring Market Power in Electricity Markets: Empirical Challenges with a Residual Demand Analysis," *International Journal of Industrial Organization*, January 2021 (with Andrew Eckert).
5. "Residential Electricity Pricing in Texas's Competitive Retail Market" *Energy Economics*, October 2020 (with CK Woo, Jay Zarnikau, Lucy Zhu, and Chen-Hao Tsai).
6. "Does Locational Marginal Pricing Impact Generation Investment Location Decisions? An Analysis of Texas's Electricity Market" *Journal of Regulatory Economics*, August 2020 (with Jay Zarnikau and Chi-Keung Woo).
7. "Imperfect Competition in Electricity Markets with Renewable Generation: The Role of Renewable Compensation Policies," *The Energy Journal*, Spring 2020 (with Andrew Eckert).
8. "On the Benefits of Behind-the-Meter Rooftop Solar and Energy Storage: The Importance of Retail Rate Design," *Energy Economics*, February 2020 (with Richard Boampong).

9. "Motivating Efficient Market Participation of Energy Storage Assets," *Energy Policy*, January 2020 (with David Sappington).
10. "Employing Simple Cost-Sharing Policies to Motivate the Efficient Implementation of Distributed Energy Resources," *Energy Economics*, June 2019 (with David Sappington).
11. "Information and Transparency in Wholesale Electricity Markets: Evidence from Alberta," *Journal of Regulatory Economics*, December 2018 (with Andrew Eckert and James Lin).
12. "Optimal Procurement of Distributed Energy Resources" *The Energy Journal*, Summer 2018 (with David Sappington).
13. "Capacity Payment Mechanisms and Investment Incentives in Restructured Electricity Markets," *Energy Economics*, August 2018.
14. "The Effect of Default Rates on Retail Competition and Pricing Decisions of Competitive Retailers: The Case of Alberta" *Energy Policy*, July 2018 (with Andrew Eckert).
15. "Carbon Pricing with an Output Subsidy under Imperfect Competition: The Case of Alberta's Restructured Electricity Market," *Resource and Energy Economics*, May 2018 (with Andrew Eckert and Heather Eckert).
16. "Analyzing Electricity Market Structure Changes and Mergers: The Importance of Forward Commitments," *Review of Industrial Organization*, February 2018 (with Andrew Eckert).
17. "The Effect of Subsidized Entry on Capacity Auctions and the Long-Run Resource Adequacy of Electricity Markets," *Energy Economics*, January 2018.
18. "On the Role of Maximum Demand Charges in the Presence of Distributed Generation Resources," *Energy Economics*, January 2018 (with David Sappington).
19. "Optimal Policies to Promote Efficient Distributed Generation of Electricity," *Journal of Regulatory Economics*, October 2017 (with David Sappington).
20. "Measuring Market Power and the Efficiency of Alberta's Restructured Electricity Market: An Energy-Only Market Design," *Canadian Journal of Economics*, August 2017 (with Derek Olmstead).
21. "Electricity Market Mergers with Endogenous Forward Contracting," *Journal of Regulatory Economics*, June 2017 (with Andrew Eckert).
22. "Designing Compensation for Distributed Solar Generation: Are Common Net Metering Policies Optimal?" *The Energy Journal*, Spring 2017 (with David Sappington).
 - Awarded the Campbell Watkins Award for the Best Paper in The Energy Journal for 2017
23. "On the Optimal Design of Demand Response Policies" *Journal of Regulatory Economics*, June 2016 (with David Sappington).
24. "Effects of an Integrated Care System on Children with Special Healthcare Needs' Medicaid Expenditures" *The American Journal of Managed Care*, April 2016 (with Marcu, M., Knapp, C., Madden, V., and H. Wang).
25. "Using Bayesian Imputation to Assess Racial and Ethnic Disparities in Pediatric Performance Measures" *Health Services Research*, October 2015 (with Knapp, C. and M. Kaufmann).

**WORKING
PAPERS**

26. “The Impacts of Load-Following Forward Contracts” (with David Sappington) (*Under Review*)
27. “Equity and Environmental Justice Concerns in Residential Battery Storage Adoption: Evidence from California” (*Under Review*)

**WORK IN
PROGRESS**

28. “Procurement Auctions for Regulated Retail Service Contracts” (with Andrew Eckert and Derek Olmstead)
29. “Capital versus Energy Subsidies: Survey Evidence from China” (with Andrew Eckert and Jingchao Zhang)
30. “Impacts of Power Outages on Solar plus Storage Adoption: Evidence from California’s Public Safety Power Shutoffs” (with Lucija Muehlenbachs)
31. “Central Control Versus Pricing: A Demand Response Experiment” (with Blake Shaffer, Megan Bailey, Frank Wolak)
32. “Strategic Interactions Between Wholesale and Ancillary Service Electricity Markets” (with Andrew Eckert and Douglas Silveira)

**POLICY
PAPERS &
PROCEEDINGS**

33. “Rising Market Concentration in Texas’s Retail Electricity Market” *The Electricity Journal*, October 2020 (with Jay Zarnikau, Parviz Adib, Chen-Hao Tsai, Chi-Keung Woo)
34. “Procuring Electric Storage as a Transmission Asset” *The Electricity Journal*, April 2020 (with David Sappington)
35. “Pricing Patterns in Wholesale Electricity Markets: Unilateral Market Power or Coordinated Behavior?” *IAEE Energy Forum*, Summer 2019 (with Andrew Eckert)
36. Evidence for the “Capacity Market Comprehensive Market Design Final Proposal - Rebuttal and Reply”. Alberta Utilities Commission Proceeding # 23757, April 4, 2019.
37. Evidence for the “Capacity Market Comprehensive Market Design Final Proposal”. Alberta Utilities Commission Proceeding # 23757, February 28, 2019.
38. “Capacity Market Design: Motivation and Challenges in Alberta’s Electricity Market,” University of Calgary School of Public Policy, Briefing Paper Series, March 2018.
39. “Electricity Markets in Transition: Market Distortions Associated with Retail Price Controls,” *The Electricity Journal*, June 2017 (with Andrew Eckert and Heather Eckert).
40. Comment on “Options for Enhancing the Design of the Regulated Rate Option (RRO)”. Comments Submitted to the Alberta Market Surveillance Administrator, May 19, 2017. (with Andrew Eckert)
41. “Infrastructure Investment in Healthcare Information Technology.” In Public Utility Research Center’s Report for Florida DMS, *Strategic Planning for Florida Governmental Broadband Capabilities*, 2011 (pg. 296-309).

HONORS AND AWARDS

Faculty of Arts Research Award, University of Alberta, 2019
Best Paper of 2017, The Energy Journal's Campbell Watkins Best Paper Award, 2017
American Economic Assoc. Transportation and Public Utilities Group Dissertation Award, 2015
Walter-Lanzillotti Dissertation Award, University of Florida, 2014
Madelyn M. Lockhart Award, University of Florida, 2013
Rafael Lutsky Award for Best First Year Ph.D. Student, University of Florida, 2010
Grinter Fellowship, University of Florida, 2009

GRANTS

2021 - 2023 - Co-PI - Future Energy Systems and Global Research Initiative, Canada First Research Excellence Fund, Government of Canada. Project: *Dynamic Load Control and EV Charging Field Experiment* - \$86,000
2021 - 2023 - Collaborator - UCalgary Haskayne 2021 Big Idea Seed Research Grant. Project: *Central control versus pricing: A demand response field experiment in residential electricity* - \$20,000
2020 - 2025 - Canada Research Chair (Tier 2), Energy Economics and Policy - \$600,000
2017 - 2023 - PI on Future Energy Systems, Canada First Research Excellence Fund, Government of Canada. Project: *Regulation and Integration of Solar PV into Electricity Markets* - \$769,500
2017 - 2023 - Co-PI on Future Energy Systems, Canada First Research Excellence Fund, Government of Canada. Project: *Market Design for Increased Wind Generation* - \$499,570
2019 - 2021 - Faculty Research Grant, China Institute, University of Alberta. Project: *Capital v.s. Energy Subsidies: Survey Evidence from China* - \$5,000
2018 - 2019 - Research Development Fund, Worldwide Universities Network - \$32,065
2017 - 2018 - SAS Conference Fund, University of Alberta - \$1,000
2017 - 2018 - Faculty of Arts Conference Fund, University of Alberta - \$2,500
2017 - 2018 - Kule Institute for Advanced Study, University of Alberta, Dialogue Grant - \$2,000
2016 - 2017 - PI on The Economics and Environmental Policy Research Network (EEPRN) Research Grant, University of Ottawa - Institute of the Environment. Project: *Quantifying the Impacts of Carbon Pricing in Alberta's Restructured Electricity Market: The Role of Market Power and Emission Allowance Allocation Methods* - \$16,723
2015 - Co-PI on SSHRC Application Grant, University of Alberta - \$1,500
2012 - 2013 - Walter-Lanzillotti Research Grant, Robert Lanzillotti Public Policy Research Center, University of Florida - \$7,500

TEACHING EXPERIENCE

ECON 373 Industrial Organization (Alberta)
ECON 572 Economics of Regulation: Theory and Applications (Alberta)
ECON 672 Topics in Industrial Economics (Alberta)
ECON 471 Strategic Behavior of the Firm (Alberta)
ECON 384 Intermediate Microeconomic Theory II (Alberta)
ECON 484 Game Theory and Applications (Alberta)
ECON 4400 Game Theory and Applications (Florida)

**STUDENT
SUPERVISION**

- Co-PI, Douglas Silveira (University of Alberta, Economics Post-Doc, In Progress)
– “*Strategic Behaviour in Multi-Product Electricity Markets*”
- Co-supervisor, Bonnie Luo (University of Alberta, Economics PhD, In Progress)
– “*Retail Competition in Restructured Electricity Markets*”
- Co-PI, Jingchao Zhang (University of Alberta, Economics Post-Doc, In Progress)
– “*Impact of Subsidies on Emerging Technology Adoption in China*”
- Co-supervisor, Boris Moreno (University of Alberta, Economics PhD, In Progress)
– “*Market Design for Increased Wind Generation*”
- Co-supervisor, Yiang Guo (University of Alberta, Economics PhD, In Progress)
– “*Regulation and Integration of Solar PV into Electricity Markets*”
- Committee Member, Samprita Chakraborty (University of Alberta, Economics PhD, In Progress)
– “*Three Essays in Health Economics*”
- Co-PI, Ryan Walch (University of Alberta, Economics Post-Doc, December 2019)
– “*Retail Rate Design and Rooftop Solar Adoption: Evidence from Salt River Project*”
- PI, Richard Boampong (University of Alberta, Economics Post-Doc, April 2019)
– “*Retail Rate Design and the Integration of Distributed Energy Resources*”
- External Examiner, Parisa Pourkarimi (Carleton University, Economics PhD, November 2018)
– “*R&D, Innovation, and Market Power*”
- External Examiner, James Lin (University of Alberta, Economics PhD, September 2016)
– “*Essays on Market Power in Alberta’s Wholesale Electricity Market*”
- External Examiner, Benjamin Bernard (University of Alberta, Mathematics PhD, March 2016)
– “*Continuous-Time Repeated Games With Imperfect Information*”
- External Examiner, Hanxiao Li (University of Alberta, Economics PhD, April 2015)
– “*Three Essays in Environmental Economics*”

**CONFERENCE &
INVITED
PRESENTATIONS**

- 2022 ASSA Annual Meeting, Boston, Massachusetts
- 2021 Economic Society of Northern Alberta (Webinar)
INFORMS Annual Meeting, Anaheim, California
Texas A&M International University, Annual Conference (Keynote)
Alberta Electric System Operator, 4th Annual Economics Excellence Conference, Calgary
- 2020 Southern Economic Association 90th Annual Meeting, New Orleans LA (Webinar)
Advanced Workshop in Regulation and Competition, Eastern, Shawnee PA (Rescheduled)
IAEE 43rd Annual International Conference, Paris France (Rescheduled)
IAEE Webinar Series
Ivey Energy Centre, 4th Annual Workshop on the Economics of Electricity Policy and Markets
- 2019 IAEE 42nd Annual International Conference, Montreal Quebec
University of Florida, Gainesville, FL
Energy Regulatory Forum, Calgary, Alberta
- 2018 16th Annual International Industrial Organization Conference, Indianapolis, IN
UA Renewable Energy and Electricity Markets Workshop, Edmonton, Alberta
Australian Competition & Consumer Commission, Melbourne, Australia
University of Alberta, The Future of Alberta’s Electricity Market, Edmonton Alberta

- University of Alberta REES, Edmonton, Alberta
 University of Auckland, Auckland, New Zealand
 ACCC/AER Regulatory Conference, Brisbane, Australia (Keynote Seminar)
 3rd Annual Alberta Energy Summit, Edmonton, Alberta
 Electrical Distribution Leadership Workshop, Calgary, Alberta
 IAEE/USAEE North American Conference, Washington DC
- 2017 Waseda University, Workshop on Carbon Pricing, Tokyo, JPN
 Paris Agreement and International Trends of Carbon Pricing:
 Towards Japan's Long Term Goals of Emissions Reductions, Tokyo, JPN (Keynote Seminar)
 Harvard Electricity Policy Group Conference, Calgary AB
 University of Western Ontario, Workshop on Canadian Electricity Policy and Markets
 University of Alberta, School of Business, The Evolution of Alberta's Energy Markets
 Economics Society of Northern Alberta's Lunch Workshop, Edmonton AB
 University of Hawaii, Workshop on Distributed Generation, Honolulu HI (Keynote Seminar)
 University of Alberta's Institute for Public Economics, Workshop on the Economics
 of Capacity Payment Mechanisms in Electricity Markets, Edmonton AB
 Economics Society of Northern Alberta's Annual Outlook Conference, Edmonton AB
 15th Annual International Industrial Organization Conference, Boston MA
- 2016 American Economic Association/TPUG Annual Conference, San Francisco CA
 Canadian Resource and Environmental Economics, Banff AB CA
 Workshop on the Economics of Renewable Energy: Residential Solar Power, University of
 Alberta's Institute for Public Economics, Edmonton AB
 Advanced Workshop in Regulation and Competition, 35th Eastern Conference, Shawnee PA
 Advanced Workshop in Regulation and Competition, 29th Western Conference, Monterey CA
- 2015 Advanced Workshop in Regulation and Competition, 28th Western Conference, Monterey CA
 Advanced Workshop in Regulation and Competition, 34th Eastern Conference, Shawnee PA
 Economics of Electricity Generation and the Environment, Van Horne Institute, Calgary AB
 University of Calgary, Calgary AB
 Miami University, Oxford OH
- 2014 University of Alberta, Edmonton AB
 Villanova University, Philadelphia PA
 University of Cincinnati, Cincinnati OH
 Cornerstone Research, Washington D.C.
 Charles River Associates, Washington D.C.
 Christensen Associates, Madison WI
 The Brattle Group, Boston MA
 University of Florida - Health Policy, Gainesville FL
- 2013 Southern Economics Association Conference, Tampa FL
 1st Workshop on Smart Grid Design & Implementation, University of Florida
- 2012 Pressing Issues in World Energy Policy Conference, University of Florida
 Southern Economics Association Conference, New Orleans LA

CONFERENCE ORGANIZATION Track Chair, Electric Power and Energy Conference, University of Alberta, November 2020
Co-Organizer, Renewable Energy and Electricity Markets, University of Alberta, May 2018
Conference Planning Committee, Van Horne Institute, Renewable Electricity Conference, 2015-2016
Cartels: A Conference in Honor of Robert Lanzillotti, University of Florida, March 2013

EDITORIAL SERVICES Assistant Editor, Competition and Regulation in Network Industries, 2018 - Present

REFEREE American Economic Journal: Economic Policy, American Journal of Managed Care, Canadian Journal of Economics, Competition and Regulation in Network Industries, Economics Bulletin, Energy Economics, Energy Policy, Energy, Energies, The Energy Journal, Empirical Economics, European Journal of Operations Research, Joule, Journal of the Association of Environmental and Resource Economists, Journal of Industrial Economics, Journal of Regulatory Economics, Journal of Environmental Economics and Management, Journal of Unconventional Oil and Gas Resources, Health Services Research, International Economic Review, International Journal of Industrial Organization, International Journal of the Economics of Business, Management Science, Operations Research, Resource and Energy Economics, Review of Industrial Organization, Review of Network Economics, Strategic Behavior and the Environment, Sustainability, Utilities Policy, University of Calgary School of Public Policy, IAEE 2019 Montreal Conference Abstracts, IAEE 2019 Denver Conference Abstracts, USAEE 2018 Washington DC Conference Abstracts

SERVICE Energy Signature Area, Curriculum Committee, UAlberta, 2021 - Present
Advisory Board, Istanbul Center for Regulation, 2020 - Present
Research Theme Advisory Council, Future Energy Systems, UAlberta, 2020 - Present
Faculty and Graduate Student Seminar Series Organizer, Department of Economics, 2016 - Present
Research Committee, Department of Economics, 2015 - 2020
Future Energy Systems, University of Alberta, Solar Research Champion 2016 - 2019
Teaching Mentoring Committee for Sessional Lecturers, Department of Economics, 2015 - 2019
Graduate Appeals Committee, Department of Economics, 2014 - 2015

PROFESSIONAL AFFILIATIONS United States Association of Energy Economists, Transportation and Public Utilities Group, International Association for Energy Economics, American Economic Association

CITIZENSHIP United States and Canadian Permanent Resident