

Blake Shaffer

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Personal

Born: September 27, 1977
Citizenship: Canadian
Languages spoken: English and French
Software proficiency: R, Stata, Matlab, Excel, L^AT_EX

Research Interests

Energy and environmental economics, electricity markets, climate policy

Appointments and Affiliations

Assistant Professor, University of Calgary, Dept. of Economics and School of Public Policy, 2020–
Lab Economist and Moderator, Creative Destruction Lab, 2019–
Research Fellow, University of Calgary, School of Public Policy, 2019–2021
Energy Policy Fellow, C.D. Howe Institute, 2016–2021
Fulbright Postdoctoral Scholar, Stanford University, 2019
Visiting Scholar, Toulouse School of Economics, Fall 2018

Editorial Positions

Co-Editor, *Resource and Energy Economics*, 2020–

Education

Ph.D. Economics, University of Calgary, 2014–2018

Dissertation: Three Essays on Electricity Demand

**Selected as the University of Calgary's nominee in the category of Fine Arts, Humanities and Social Sciences for the Canadian Association of Graduate Studies Distinguished Dissertation Award*

Committee: Dr. Trevor Tombe (Supervisor), Dr. Lucija Muehlenbachs, Dr. Ken McKenzie

Examiners: Dr. Max Auffhammer (External), Dr. Pamela Campa (Internal)

M.Phil. Economics, University of Cambridge, 2002–2003

Masters Thesis: Road congestion charging: A preliminary analysis of the London scheme

Supervisor: Dr. Georgina Santos, Examiner: Dr. David Newbery

Graduated *with merit*; achieved Ph.D. continuation level

B.Sc. (Hons) Environmental Sciences, Queen's University, 1995–2000
Honours Thesis: Mine Reclamation in the Canadian Arctic: An Analysis of Policy Alternatives
Graduated with 1st class distinction

Exchange year, University of Melbourne, 1997
Received letter of distinction in Philosophy

Employment

University of Calgary
Assistant Professor, Economics and Public Policy, 2020–
Sessional Instructor, 2018
Graduate Teaching Assistant, 2014–2017
Graduate Research Assistant, 2014–2017

Government of British Columbia
Expert Advisor, B.C. Hydro Transformative Review, 2019–

Government of Canada
Policy Advisor, Ministry of Environment and Climate Change, 2018–

Government of Alberta
Policy Advisor, Department of Energy, 2016– (occasional)
Expert Advisor, Economic Diversification Advisory Committee, 2017
Expert Advisor, Electricity Transition Governance Committee, 2016
Member, Royalty Review Secretariat, 2015–16
Member, Natural Gas Expert Panel (unpaid service), 2015–16

Transalta Corporation, Calgary, AB
Director, Head of Trading, 2012–14
Senior Power Trader, 2010–11

Barclays Capital, New York, NY
Senior Power Trader, 2007–10

Lehman Brothers, New York, NY
Vice-President, Power and Gas Trading, 2006–07

Powerex Corp. (BC Hydro), Vancouver, BC
Manager of Analytics, 2003–06
Term Power Trader, 2001–02
Spot Power Trader and Analyst, 1999–01

Publications

Working Papers

Private Risk and Social Resilience in Liberalized Electricity Markets (with Jacob Mays, Michael Craig, Lynne Kiesling, Joshua Macey, and Han Shu). 2021 (revisions requested).

Changing susceptibility to cold weather in Texas power demand (with Daniel Quintero and Joshua Rhodes). 2021 (under review).

Journal Articles

- Shaffer, B., Samaras, C. & Auffhammer, A. (2021). **Make electric vehicles lighter to maximize climate and safety benefits.** *Nature*, 598, 254-256 (Editor-reviewed Comment).
- Tabari, M. & Shaffer, B. (2020) *Paying for performance: The role of policy in energy storage deployment.* *Energy Economics*, 92.
- Leach, A., Rivers, N. & Shaffer B. (2020). *Canadian electricity markets during the COVID-19 pandemic: An initial assessment.* *Canadian Public Policy*, 46(S2).
- Shaffer, B. (2020). *Misunderstanding nonlinear prices: Evidence from a natural experiment on residential electricity demand.* *American Economic Journal: Economic Policy*, 12(3).
- Rivers, N. & Shaffer, B. (2020). *Stretching the duck: How rising temperatures will change the level and shape of future electricity consumption.* *The Energy Journal*, 41(5).
- Shaffer, B. (2019). *Location Matters: Daylight saving time and electricity demand.* *Canadian Journal of Economics*, 52(4).
- Santos, G. & Shaffer, B. (2004). *Preliminary results of the London congestion charging scheme.* *Public Works, Management and Policy*, 9(20): 164–181.

Journal Articles (outside Energy and Economics)

- Lang, R., Benham, J.L., Atabati, O. et al. (2021). **Attitudes, behaviours and barriers to public health measures for COVID-19: a survey to inform public health messaging.** *BMC Public Health*, 21, 765.

Policy Papers

- A multiple account benefit-cost analysis of coal mining in Alberta (with Jennifer Winter, Megan Bailey, Emily Galley and Chris Joseph), Nov 2021, *University of Calgary, School of Public Policy Research Paper*, 14(32)
- The Role of Hydrogen in Decarbonizing Alberta's Electricity System (with Jordan Neff and Chris Bataille), Nov 2021, *University of Calgary, School of Public Policy Research Paper*, 14(31)
- The Role of Hydrogen in Canada's Transition to Net-Zero Emissions (with Chris Bataille and Jordan Neff), Nov 2021, *University of Calgary, School of Public Policy Research Paper*, 14(30)
- Technical pathways to aligning Canadian electricity systems with net zero goals, Oct 2021, *Canadian Institute for Climate Choices*
- The Price of Power: Comparative Electricity Costs across Provinces (with Grant Bishop and Mariam Ragab), Oct 2020, *C.D. Howe Research Paper*, no. 582
- The Role of Storage in Alberta's Electricity Market: Summary of a School of Public Policy Roundtable Event, Sep 2019, *University of Calgary, School of Public Policy Summary Paper*, 12(28)
- All's Well that Ends Well: Addressing End-of-Life Liabilities for Oil and Gas Wells (with Ben Dachis and Vincent Thivierge), Sep 2017, *C.D. Howe Research Paper*, no. 492
- The Challenge of Integrating Renewable Generation in the Alberta Electricity Market (with G. Kent Fellows and Michal C. Moore), Sep 2016, *University of Calgary, School of Public Policy Summary Paper*, 9(25)

The Political Economy of Free Allocations (with Mark Purdon and David Houle), Apr 2016, *Ecofiscal Commission Position Paper Series on Carbon Pricing Revenue Recycling*

Lifting the Hood on the Alberta Royalty Review, Feb 2016, *University of Calgary, School of Public Policy Briefing Paper*, 9(7)

Policy Notes

Dead Weight Loss (with Max Auffhammer), October 25, 2021, *Energy Institute Blog, UC Berkeley*

The Climate Policy Certainty Gap and How to Fill It (with Dale Beugin), June 4, 2021, *C.D. Howe Intelligence Memo*

Valuing Alberta's renewable electricity program (with Sara Hastings-Simon), Mar 18, 2021, *School of Public Policy, Energy & Environmental Policy Trends*

Three Fixes for Canadian Energy Policy to Avoid Texas' Energy Troubles (with Joshua Rhodes), Feb 19, 2021, *C.D. Howe Intelligence Memo*

Cheap renewables have arrived (with Nick Schumacher, Victoria Goodday and Jen Winter), Nov 22, 2020, *School of Public Policy, Energy & Environmental Policy Trends*

Other Options for Time-of-Use Electricity Pricing in Ontario (with Grant Bishop and Mariam Ragab), Nov 3, 2020, *C.D. Howe Intelligence Memo*

As Electricity Demand Sinks, Ontario Power Costs Rise 24 Percent With More to Come (with Grant Bishop), Apr 21, 2020, *C.D. Howe Intelligence Memo*

Power demand in the time of COVID-19 (with Andrew Leach and Nic Rivers), Apr 16, 2020, *School of Public Policy, Energy & Environmental Policy Trends*

Using forward contracts to deliver reliable and affordable power, Oct 18, 2019, *C.D. Howe Intelligence Memo*

Will electric vehicle subsidies spur widespread adoption?, May 23, 2019, *School of Public Policy, Energy & Environmental Policy Trends*

You get what you pay for: Considering cost and value in renewables procurement, Dec 18, 2018, *C.D. Howe Intelligence Memo*

To change or not to change? The daylight saving debate won't die, Mar 6, 2018, *C.D. Howe Intelligence Memo*

Alberta's renewable auction sets a new low for prices, but tweaks are needed in the future, Dec 14, 2017, *C.D. Howe Intelligence Memo*

What's the Real Deal with Keystone XL?, Nov 21, 2017, *C.D. Howe Intelligence Memo*

Smooth transitions: Shifting from cap-and-trade to a carbon tax (with Trevor Tombe and Dale Beugin), Nov 15, 2017, *Ecofiscal Commission*

On Site C: Dam(ned) if you do, dam(ned) if you don't, Nov 3, 2017, *C.D. Howe Intelligence Memo*

An Ontario surprise: A good idea about electricity pricing, Sep 10, 2017, *C.D. Howe Intelligence Memo*

Does Daylight Saving Time Reduce Energy Consumption (with Nic Rivers), Part 1 & Part 2, Mar 7 & 8, 2017, *C.D. Howe Intelligence Memo*

Reconciling pipelines with Canada's climate goals (with Trevor Tombe), Dec 8, 2016, *C.D. Howe Intelligence Memo*

What does a capacity market mean for Alberta? Nov 24, 2016, *C.D. Howe Intelligence Memo*

Popular Media

If you got an AstraZeneca COVID-19 vaccine, you made the right decision, according to economics (with Stephen Gordon, Andrew Leach, Christine Neill, Tammy Schirle and Trevor Tombe), May 12, 2021, *Globeandmail*

Comment le Canada peut fournir une énergie propre et fiable grâce aux macroréseaux électriques (with Brett Dolter, Kent Fellows and Nic Rivers), March 4, 2021, *The Conversation Canada*

Why Canada should invest in 'macrogrids' for greener more reliable electricity (with Brett Dolter, Kent Fellows and Nic Rivers), Feb 24, 2021, *The Conversation Canada*

Lessons for Alberta from the Texas power blackout (with Joshua Rhodes), Feb 17, 2021, *CBC*

Bridging the electricity gap between Alberta and B.C. makes perfect climate sense (with Mark Jaccard), Dec 22, 2020, *CBC*

Alberta's shift away from coal power is a climate action success story (with Andrew Leach), Oct 15, 2020, *CBC*

On the wrong track: Alberta loses \$2.1B on crude-by-rail contracts, Sep 1, 2020, *CBC*

Alberta's government is using coronavirus as a shield for laying off education workers (with Trevor Tombe), Apr 5, 2020, *Globeandmail*

Beyond pipelines: The nation-building project that could electrify Canada (with Sara Hastings-Simon), Mar 17, 2020, *Globeandmail*

Alberta's carbon-pricing policy is imperfect – but in one significant way, it's actually better than Ottawa's, Oct 29, 2019, *Globeandmail*

Les Canadiens ont les voitures les plus grosses et les plus énergivores au monde, May 13, 2019, *The Conversation Canada* (translation)

When it comes to vehicles, Canada tops the charts for poor fuel economy, May 1, 2019, *The Conversation Canada*

Redwater decision is progress, but environmental liabilities run deep (with Simon Dyer and Chris Ragan), Feb 4, 2019, *Globeandmail*

Canada's new large-emitter pricing system might defeat the carbon tax's own purpose, Nov 5, 2018, *Macleans*

Will LNG Canada increase greenhouse gas emissions? Oct 3, 2018, *Macleans*

On Policy Durability, Aug 13, 2018, *The Hill Times*

Why John Horgan deserves credit for going ahead with Site C, Dec 11, 2017, *Macleans*

Why the B.C. Liberals and NDP are both wrong about bridge tolls, Apr 10, 2017, *Macleans*

Saskatchewan swallows the fiscal pill Alberta refuses (with Trevor Tombe), Mar 24, 2017, *Macleans*

Paying for pipelines: How consumers can end up footing the bill, Feb 9, 2017, *CBC*

Making sense of energy efficiency programs (with Sara Hastings-Simon and Trevor Tombe), Jan 31, 2017, *Macleans*

Alberta Electricity: There's something happening here, what it is ain't exactly clear, Nov 27, 2016, *Calgary Herald*

Carbon tax: The real debate is about the revenue, Oct 15, 2016, *Globeandmail*

Making sense of a \$15 minimum wage in Alberta (with Trevor Tombe), Jul 1, 2016, *Macleans*

Alberta's climate plan requires serious debate, May 27, 2016, *Globeandmail*

Making sense of a provincial debt downgrades: Why Canadians in all regions should watch mounting provincial debt levels with concern (with Trevor Tombe), Dec 22, 2015, *Macleans*

Grants and Awards

Natural Resources Canada, Smart Renewables and Electrification Pathways Program, Capacity Building Stream (\$5,000,000, co-PI). *Energy Modelling Institute*, with Madeleine McPherson, Normand Mousseau and Louis Beaumier, 2021–2025

SSHRC Insight Development Grant (\$66,320, PI). *Accelerating the electric vehicle transition: An empirical analysis of Canadian EV policy*, with David Rapson, Nic Rivers, and Devin Morrison, 2021–2023

Calgary Foundation (\$35,000, co-PI). *Multiple Account Benefit-Cost Analysis of Coal Mining in Alberta*, with Jen Winter, 2021

Sustainable Prosperity Institute (\$10,000, co-Applicant). *Environmental Taxes and Energy Poverty in Canada*, co-applicant, with Jen Winter [PI], 2021

FES-GRI Joint Research Fund 2020, University of Calgary and University of Alberta (\$86,000, co-PI). *Dynamic Load Control and EV Charging*, with David Brown [co-PI] and Megan Bailey, 2021–2023

Haskayne School of Business Big Idea Seed Research Grant, University of Calgary (\$20,000, co-Applicant). *Central control versus pricing*, with Megan Bailey [PI], David Brown and Frank Wolak, 2021

Natural Resources Canada Research Grant (\$15,000, PI). *The value of timely and detailed electricity data*, 2021

EEPRN Research Grant (\$37,055, PI), *How do households spend carbon tax rebates?*, with Nic Rivers, 2019–2020

Fulbright Scholar, Canada-US Fulbright Program, Stanford University, 2019

University of Calgary Graduate Student Teaching Award, 2018

Victor Yang Song Graduate Scholarship in Teaching Excellence, 2018

University of Calgary Faculty of Graduate Studies Travel Award, 2018

John D. Petrie, QC Memorial Graduate Scholarship, 2017-19

James D. Gaisford Research Prize (Top 2nd year PhD research paper), 2017

Queen Elizabeth II Scholarship (SSHRC and Vanier National Finalist), 2015–17

Talisman Graduate Scholarship in Energy and Related Studies, 2015–16

Top Macroeconomics Prize, 1st year PhD, 2015

Economics Society of Calgary Scholarship, 2014
 Cambridge Commonwealth Trust Graduate Scholarship, 2003
 Carl Reinhardt Scholarship in Geological Sciences, 1997
 Morley E. Wilson Scholarship in Geological Sciences, 1996
 Queen's Applied Science (Engineering) Dean's List, 1996
 Queen's Anniversary Entrance Scholarship, 1995

Proceedings

Conference Presentations and Invited Seminars

2021: University of Calgary Emeriti Association (Jan), Pacific Energy Innovation Association (Feb); Avatar Program (Feb); US Association of Energy Economics, National Capital Area Chapter Annual Conferences (Apr); Canadian Economics Association Annual Conference (June); C.D. Howe Institute (June), UC Berkeley Energy Institute (Oct)

2020: Canadian Renewable Energy Forum (Nov); Canadian Resource and Environmental Economics Association Annual Meeting (Oct); AESO Economics Excellence Showcase (Sep); Alberta Power Symposium (Sep); Avatar-YPAC Program (July); AESO Economics Seminar Series (June); TWEEDS, Portland (Postponed); Berkeley POWER Conference, University of California at Berkeley (May); Sustainable Prosperity Institute Annual Symposium, Ottawa (Feb)

2019: Ivey Electricity Workshop, Toronto (Oct); C.D. Howe Energy Council, Toronto (Oct); University of Calgary Environmental Law Society, Calgary (Oct); NBER Electricity Markets and Regulation Workshop, Lake Tahoe (May); Pacific Institute for the Mathematical Sciences (PIMS) Workshop on Mathematical Sciences and Clean Energy Applications, UBC (May); Berkeley Energy Institute, University of California at Berkeley (February)

2018: Toulouse School of Economics, Environmental Economics Seminar (September); World Congress of Environmental and Resource Economists, Gothenburg, Sweden (June); Canadian Economics Association 2018 Annual Conference, Montreal (June)

2017: Canadian Resource and Environmental Economics 2017 Annual Meeting, London (September); Toulouse School of Economics, 11th Conference on the Economics of Energy and Climate Change, Toulouse (June)

2016: Canadian Resource and Environmental Economics 2016 Annual Meeting, Banff (October)

Conference Organization

A conversation on Canada's Hydrogen Potential with Canada's Minister of Natural Resources, School of Public Policy, University of Calgary, December 2020.

Orphan Wells: Cleaning up Alberta's Liability Management Regime, School of Public Policy, University of Calgary. May 2020.

Market Design in Alberta: A roundtable, School of Public Policy, University of Calgary, March 2020. [In-person roundtable postponed. Video webinar convened in lieu.]

The potential for energy storage in Alberta: A roundtable, School of Public Policy, University of Calgary, March 2019. Co-organized a roundtable of expert international panelists and attendees on the potential for energy storage in evolving electricity markets.

Electricity Journalism Workshop, Calgary, May 2018. Co-organized a workshop for journalists to better understand the fundamentals of electricity markets and policy with C.D. Howe Institute, Canada West Foundation and the Pembina Institute.

Integrating renewables into the Alberta electricity market: A roundtable, School of Public Policy, University of Calgary, Sep 2015. Co-organized a roundtable of 40 stakeholders and experts to discuss policy and operational issues related to integrating renewables into the Alberta electricity market.

Invited Workshops

Berkeley Energy Camp, University of California at Berkeley, Oct 2021, June 2020 (Postponed), June 2019. Invited attendee.

NBER Electricity Markets and Regulation Workshop, Lake Tahoe, May 2019. Invited speaker.

1st Annual Innovation Program of ReDeveLoP, an NSERC-funded program under the CREATE Initiative for the responsible development of low-permeability hydrocarbon resources, University of Calgary, Canada, May 2018. Invited speaker.

An Uncommon Dialogue: North American Hydropower, Stanford Steyer-Taylor Centre for Energy Policy and Finance, Stanford Woods Institute for the Environment, Stanford University, Palo Alto, March 2018. Invited panelist.

Alberta Energy Challenge: An international case competition focussing on the energy sector, University of Alberta, Edmonton, September 2017 (guest speaker). Invited speaker.

Berkeley Summer School in Environmental and Energy Economics, University of California at Berkeley, August 2017. Selected attendee.

IASS Expert workshop on coal power, Institute for Advanced Sustainability Studies, Potsdam, Germany, November 2016. Invited speaker.

Summer Institute on Field Experiments, University of Chicago, July 2015. Selected as one of 20 global scholars to participate in this inaugural workshop organized by Dr. John List.

Teaching

Courses Taught

ECON 429 - Advanced Economics of Electricity Markets (Undergraduate), Winter 2022

SEDV 623 - Strategic Environmental Planning for Energy Organizations (Masters), Winter 2021

PPOL 611 - Energy Transitions and Policy (Masters), Winter 2020, Fall 2020

ECON 329 - Economics of Electricity Markets (Undergraduate), Fall 2019, Winter 2021

ECON 373 - Game Theory (Undergraduate), Spring 2018 (**awarded Department of Economics Graduate Student Teaching Award*)

Student Supervision

2022: Sana Ahmadkhani (MA), Aviv Fried (MPP), Christopher Nishiyama (MPP), Supreena Sekhon (MPP)

2021: Carlo Magnaye (MPP), Ryan Dormer (MPP), Aaraby Mohanathas (MSc), Kayla Brehon (MSc)

2020: Nicholas Schumacher (MPP), Brenda Flores (MPP), Jordan Neff (MPP), Kiana Goddard (MSc), Sounderya Venkatesan (MSc)

Memberships

Canadian Economics Association (CEA), Canadian Resource and Environmental Economics Association (CREEA), American Economics Association (AEA), Association of Environmental and Resource Economics (AERE), International Association for Energy Economics (IAEE)

Referee Service

American Economic Journal: Economic Policy (3); Journal of the Association of Environmental and Resource Economists; Journal of Environmental Economics and Management (3); Resource and Energy Economics (2); Energy Economics (4); The Energy Journal (3); Energy Policy (2); Joule; Journal of the European Economic Association; International Journal of Industrial Organization; Journal of Behavioral and Experimental Economics; Economic Inquiry; Canadian Public Policy; University of Calgary School of Public Policy; C.D. Howe Institute; Ecofiscal Commission; Electric Policy Research Institute; Canadian Institute of Climate Choices

References

Dr. Trevor Tombe (PhD supervisor)
Associate Professor, Economics
University of Calgary
ttombe@ucalgary.ca
(403) 220-8068

Dr. Lucija Muehlenbachs (PhD committee)
Associate Professor, Economics
University of Calgary
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Dr. Nicholas Rivers
Professor, Economics
University of Ottawa
nicholas.rivers@uottawa.ca
(613) 562-5800 ext. 4676

Dr. Meredith Fowlie
Professor, Agric. and Resource Economics
University of California at Berkeley
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(510) 642-4820

Dr. Georgina Santos (Masters supervisor)
Senior Lecturer, School of Geography and Planning
Cardiff University
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Dr. Frank Wolak (Postdoctoral advisor)
Director, Program on Energy and Sust. Development
Stanford University
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Dr. Maximilian Auffhammer
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