

# 5<sup>th</sup> Annual Workshop on the Economics of Electricity Policy and Markets



October 6, 2021 – October 27, 2021

## ABOUT THE WORKSHOP

The Ivey Energy Policy and Management Centre hosts a workshop every October on the Economics of Electricity Policy and Markets. The workshop brings together prominent scholars and practitioners from industry and government to share ideas and research on contemporary issues related to electricity policy, regulation, and electricity markets, with the goal of:

- Building a community of academics and practitioners who are active in electricity policy;
- Expanding the network of researchers in Canada with an interest in electricity markets and electricity policies and regulation; and,
- Fostering academic research that contributes to effective electricity policies and electricity market design.

## 2021 VIRTUAL WORKSHOP

The Ivey Energy Centre will be hosting the 2021 workshop virtually in the month of October as a series of weekly webinars. The webinar series will consist of three panel sessions and a keynote address. The panel sessions will involve a moderator and three invited speakers with representation from academia, industry and government institutions. Brian Rivard from Ivey will host each of the sessions. Each webinar will run for approximately 1 hour and 20 minutes (30 to 40 minutes for speakers and 30 to 40 minutes for moderator and audience questions).

The four workshop sessions will be scheduled as a Zoom webinar each Wednesday in October at 11:00 am EST.

## **Workshop Theme: Electrification Futures**

### **Synopsis**

The proposed move towards greater electrification of the economy as part of the clean energy transition implies significant new investment in electricity infrastructure, including transmission and distribution networks, large scale and distributed generation, and in new energy technologies such as storage. While this creates new opportunities for economic development and improved environmental impacts, the scale, scope and complexity of transformation also create new risks for stakeholders. An informed and coordinated approach to policy and regulation is required to ensure that electrification is achieved in a cost-effective manner.

## **WORKSHOP AGENDA**

### **Wednesday, October 6, 2021**

11:00 am EST

#### **Session 1: Electrification Scenarios and Investment in Electricity Infrastructure**

##### **Topics of exploration:**

- What is the projected level of electrification under different decarbonization and energy policy scenarios?
- What are the predictions for future electricity demand under different policy scenarios?
- What types of infrastructure investment (generation, transmission and distribution infrastructure) will be required to manage the transition to increased electrification?
- What new proven technologies (known and commercially viable) and disruptive technologies (known but not fully developed) will be required under various scenarios?
- What is the expected cost of electrification under the different policy scenarios?

**Moderator:** Adam Fremeth (Ivey Business School)

##### **Speakers:**

- Tyler Bryant (FortisBC)
- Normand Mousseau (Université de Montréal)
- Caroline Lee (Canadian Institute for Climate Choices)

### **Wednesday, October 13, 2021**

11:00 am EST

#### **Session 2: Transmission and Distribution Grid Services of the Future**

##### **Topics of exploration:**

- What types of grid services can we expect to be provided effectively by newly electrified distributed energy resources?
- What are the barriers to these resources from providing grid services to wholesale and retail markets?
- What types of policy and regulatory changes are required to enable the provision of these services?

**Moderator:** Katherine Sparkes (Independent Electricity System Operator)

**Speakers:**

- Jason Fitzsimmons (Hydro One)
- Eric Vandenberg (Federal Energy Regulatory Commission)
- Joshua Wong (Opus One Solutions)

**Wednesday, October 20, 2021**

11:00 am EST

**Session 3: Electricity Rate Design and Electrification*****Topics of exploration:***

- How should the increased cost of new electricity infrastructure be recovered?
- Who should pay for legacy utility assets stranded during the electrification transition?
- How might electrification affect marginalized communities? Are policies or special rate protection programs required for these communities?

**Moderator:** Brandon Schaufele (Ivey Business School)**Speakers:**

- Carlos Batlle (MIT Energy Initiative & Comillas Pontifical University)
- Nicole LeBlanc (Alberta Electric System Operator)
- Catherine H. Hausman (Gerald R. Ford School of Public Policy)

**Wednesday, October 27, 2021**

11:00 am EST

**Session 4: Keynote Address*****Topic of exploration:***

Efficient and Equitable Pricing for the Energy Transition

**Moderator:** Guy Holburn (Ivey Business School)**Speakers:**

- Severin Borenstein (E.T. Grether Professor of Business Administration and Public Policy, Haas School of Business, UC Berkeley, and Faculty Director of the Energy Institute at Haas)

## SPEAKERS AND MODERATORS



### **Carlos Batlle**

Prof. Batlle joined the MIT Energy Initiative in 2011, where as part of the Electric Power Systems Low-Carbon Energy Center, he has been leading research projects, supervising PhD and master dissertations. He teaches the course entitled “Engineering, Economics and Regulation of the Electric Power Sector”. He is part-time Professor of the Florence School of Regulation (FSR), an institution under the aegis of the European University in Florence, where he is member of the Training Program for European Energy Regulators and (among other courses) Director of the FSR Annual Training on the Regulation of Energy Utilities. He is also part-time Professor at Comillas Pontifical University in Madrid, where he teaches Energy Economics and Electric Power Systems Regulation, and he is member of the advisory academic panel of Ofgem, the UK energy National Regulatory Authority.



### **Tyler Bryant**

Tyler Bryant is the Low Carbon Policy and Strategy Manager at FortisBC. Tyler leads initiatives that will enable FortisBC to thrive as Canada’s largest investor-owned energy utility in the transition to a low-carbon future. Tyler brings a multi-faceted background and perspective on decarbonizing the energy system having worked for the International Energy Agency, David Suzuki Foundation and Natural Resources Canada.



### **Severin Borenstein**

Severin Borenstein is Professor of the Graduate School at the Haas School of Business and Faculty Director of the Energy Institute at Haas. He is also Director emeritus of the University of California Energy Institute (1994-2014). He received his A.B. from U.C. Berkeley and Ph.D. in Economics from M.I.T. His research focuses on business competition, strategy, and regulation. His current research projects include the economics of renewable energy, economic policies for reducing greenhouse gases, alternative models of retail electricity pricing, and competitive dynamics in the airline industry. Borenstein is also a research associate of the National Bureau of Economic Research in Cambridge, MA. In 2019, he was appointed to the Governing Board of the California Independent System Operator.



### **Jason Fitzsimmons**

Jason Fitzsimmons was promoted to Chief Corporate Affairs and Customer Care Officer with Hydro One in August 2018, with oversight of the customer service, corporate affairs, marketing and Indigenous relations functions. With more than 25 years of experience in the electricity sector, Mr. Fitzsimmons is a highly-regarded leader with a proven track record for successfully executing large-scale transformations and building strong relationships with key stakeholders. In his previous role as Vice President, Labour Relations at Hydro One, Mr. Fitzsimmons played an instrumental role in bringing the company’s 400-employee Customer Contact Centre in-house as the company continuously strives to deliver best-in-class customer service. Mr. Fitzsimmons sits on the Board of Directors of the Electricity Distributors Association.



### **Adam Fremeth**

Adam Fremeth is the E.J. Kernaghan Professor in Energy Policy and Associate Professor of Business, Economics, and Public Policy at the Ivey Business School. His research focus is on how firms engage and respond to public policy, with particular attention to regulated utilities and the upstream oil and gas sector. Ongoing research projects include how firms engage with First Nations communities through the application of Impact and Benefit Agreements, the role of activist groups on regulatory rulings in the electric utility sector, and the patterns of personal campaign contributions by Chief Executive Officers. His work has been published in top tier economics and management journals. This research agenda has been awarded numerous national grants from the Social Sciences and Humanities Research Council and he was named a Fulbright Scholar for 2018/19. He received his HBA from the Ivey Business School, his MA from Carleton University and his Ph.D from the University of Minnesota.



### **Catherine H. Hausman**

Catherine H. Hausman is an Associate Professor in the School of Public Policy at the University of Michigan and a Research Associate at the National Bureau of Economic Research. Her work focuses on environmental and energy economics. Recent projects have looked at legacy utility costs in an energy transition, inequality and environmental quality, the natural gas sector's role in methane leaks, and the impact of climate change on the electricity grid. Her research has appeared in the *American Economic Journal: Applied Economics*, the *American Economic Journal: Economic Policy*, the *Brookings Papers on Economic Activity*, and the *Proceedings of the National Academy of Sciences*. Prior to her graduate studies, Catherine studied in Peru under a Fulbright grant. She has taught Statistics, a policy seminar on Energy and the Environment, and a course on Government Regulation of Industry and the Environment. She holds a BA from the University of Minnesota and a PhD in Agricultural and Resource Economics from the University of California, Berkeley.



### **Guy Holburn**

Guy Holburn is Professor of Business, Economics and Public Policy, and Director of the Ivey Energy Policy and Management Centre at Ivey Business School, Western University. His research and teaching focuses on regulation, governance and strategy issues in the energy and utilities sectors. He has published widely in top peer-reviewed academic journals, and authored more than a dozen reports on provincial and federal energy policies. Dr. Holburn has served as an expert consultant and advisor to governments and companies in Canada and the U.S., and he serves as a director of London Hydro. He holds a Ph.D. and M.A. from the University of California, Berkeley, and a B.A. Hons. (First Class) from Cambridge University. Previously, Dr. Holburn worked for several years as a management consultant for Bain and Company in England and in South Africa.



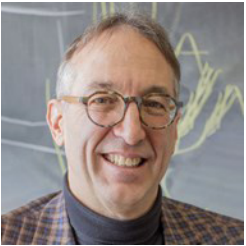
### **Nicole LeBlanc**

Nicole LeBlanc is Director, Markets & Tariff with the AESO. With the electricity industry on the cusp of transformational change, Nicole is accountable for leading a team of experts at the AESO responsible for market design and the ISO Tariff who are focused on shaping the Alberta electricity framework for the transformation of Alberta's electricity future to deliver reliability and enhance the quality of life for Albertans. Nicole has nearly two decades of experience evaluating and designing various aspects of Alberta's power industry, including policy development, technology evaluation, system modelling, market design, demand-side and supply-side forecasting as well as strategic planning. Nicole is routinely asked to sit as AUC witness for the AESO and is a frequent presenter and panelist on Alberta's electricity market. Nicole holds a Master's degree in Economics and a Bachelor of Applied Mathematics, both from the University of Calgary.



### **Caroline Lee**

Caroline Lee is Senior Research Associate with the Canadian Institute for Climate Choices, an independent climate policy think-tank. Before joining Climate Choices, she has worked at the International Energy Agency, the Government of New Brunswick, and in energy consulting at Navius Research. She holds an MA in Resource Management from Simon Fraser University.



### **Normand Mousseau**

Normand Mousseau is Academic Director of the Trottier Energy Institute at Polytechnique Montreal and a Founding Director of The Transition Accelerator. Dr. Mousseau is actively involved with energy and climate policy, having co-chaired the Quebec Commission on Energy Issues in 2013. He is a professor of physics at University of Montreal with a number of books published in complex materials, energy and natural resources. From 2009 – 2012 he was Chair of Excellence, Fondation NanoSciences and from 2003 – 2014 he served as Canada Research Chair in Computational Physics of Complex Materials.



### **Brandon Schaufele**

Brandon Schaufele was awarded a three-year Ivey Energy Consortium Fellowship in 2015. He is an Assistant Professor of Business, Economics, and Public Policy at the Ivey Business School. Prior to coming to Ivey in 2014, Schaufele was an Assistant Professor in the Department of Economics at the University of Ottawa, as well as Research Director of the university's Institute of the Environment. Having also served as the Research Director of Sustainable Prosperity, a leading Canadian think-tank on environment-economy issues, his research focuses on the links between firms, governments and civil society, with special emphasis on energy and environmental policy. Recent research has concentrated on how consumers and firms respond to major Canadian greenhouse gas emission reduction initiatives.



### **Katherine Sparkes**

Katherine is the Senior Director, Emerging and Demand Side Resources at the IESO where she is responsible for driving initiatives in support of grid modernization and the removal of barriers to the deployment of cost-effective solutions that enhance the reliability, adequacy and affordability of Ontario's electricity supply. Katherine and her team work with partners across the IESO and broader energy sector and beyond to understand and evaluate the capability of emerging technologies, services, practices and policies to meet Ontario's current and future electricity needs. They also deliver a suite of award-winning conservation and demand management programs to Ontario electricity customers. Katherine has worked in the consulting and non-profit sectors and teaches in the Energy & Infrastructure Program at Osgoode Hall Law School. An urban planner by training, Katherine's volunteer efforts are focused on improving the safety of Toronto's streets in support of active transportation.



### **Eric Vandenberg**

Eric Vandenberg is the Deputy Director of the Office of Energy Policy and Innovation at the Federal Energy Regulatory Commission. Prior to joining the Office of Energy Policy and Innovation, Mr. Vandenberg served as the Technical Advisor to Chairman Neil Chatterjee from with primary responsibility for wholesale electric market design, electric reliability, and cybersecurity issues. Prior to joining Chairman Chatterjee, Mr. Vandenberg served in various positions throughout the Commission in the Office of Energy Market Regulation, the Office of Electric Reliability, and with Commissioner Cheryl LaFleur. Mr. Vandenberg joined FERC in 2009 as an Electrical Engineer in the Office of Electric Reliability. Mr. Vandenberg earned a Bachelor's Degree in Electrical Engineering and Master's Degree in Business Administration from Ohio University.



### **Joshua Wong**

Joshua Wong is the President and CEO of Opus One Solutions. Prior to Opus One, Joshua was the Director of Engineering at a grid-scale energy storage provider, as well as the head of smart grid at Toronto Hydro Electric System Limited, where he led the policy, strategy, regulatory, business, and engineering development of Toronto's smart grid infrastructure, including Toronto's 25-year smart grid roadmap. Joshua is a licensed Professional Engineer in the Province of Ontario. He holds a degree in Electrical Engineering from the University of Toronto, Masters of Electric Power Engineering from the University of Waterloo, and completed executive programs from MIT Sloan, IMD Business School and Harvard Business School.

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