



As the only energy policy centre at a Canadian business school, Energy@Ivey is leading the way in developing solutions to local, national and global energy sector business and public policy issues.

The foundation of a good public policy is really an open dialogue and open debate.

David Dodge, Former Governor of the Bank of Canada

From Globe and Mail "THE LUNCH" article,
Black Coffee Spiked with Exasperation
September 10, 2011

Energy @ Ivey
ANNUAL REPORT
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Our vision is to be the leading forum for discovering and disseminating new knowledge about energy issues facing business, government and society. By thinking beyond traditional approaches, we can cultivate innovative, effective and responsible policy solutions.

Challenge

“Instead of subsidizing yesterday’s energy sources, we need to invest in tomorrow’s.”

U.S. President Barack Obama, voicing opposition to a proposal that would cut the government’s clean energy investments by 70 per cent.

Insight

There’s no one perfect fuel that is low cost, readily available and environmentally friendly. There are always tradeoffs involved, so having a mixed portfolio of fuels and technologies is generally an optimal approach.

Adapted from **Report:** impact, Volume 13, Number 12
Guy Holburn, Director, Energy@Ivey, discussing sustainability in the electricity sector



Challenge

“Nuclear energy is a controversial issue at the best of times and the disaster in Fukushima has clearly had a negative impact on the way people see its use. With mounting global opposition, some countries are already decided to scale back its use, with some abandoning it all together.”

Milorad Ajder, Ipsos MORI, REPORT: Nuclear Energy and Fukushima

Insight

This is a real opportunity to push things ahead and look at innovating in areas that have been ignored, or moving some energy sources to a larger scale than they've been in the past.

Adapted from Financial Post podcast: Investor Eyes on Japan and the Future of Nuclear Power
Adam Fremeth, Senior Researcher, Energy@Ivey, discussing nuclear energy issues facing policymakers



Challenge

“Many renewable energy players are finding funding is harder to come by and where it is available, more expensive or with more onerous terms than they have been used to.”

REPORT, Alternative Thinking 2011: Top 10 Trends and Issues in Renewable Energy, Deloitte Global Energy & Resources group

Insight

Reducing policy risk will enable governments to attract more private sector investment and at lower cost to consumers and taxpayers.

Report: Governance and Regulation in the Electricity Sector: Balancing Independence with Accountability
Guy Holburn, Director, Energy@lvey, discussing Canada's governance structure



Providing Solutions

There is an urgent need for more informed debate on policy options in the electricity sector... Traditional approaches are not necessarily appropriate given the new policy challenges, yet there is considerable uncertainty about the best direction for policymakers to take.

Guy Holburn, Director, Energy@Ivey

The energy sector today is a complex and ambiguous environment, and strong leadership is vital for success.

Recognizing the strong demand in Canada and around the world for thought leadership on energy sector public policy issues, Ivey established Energy@Ivey in 2010. We take an interdisciplinary approach that considers the economic, political, social and environmental concerns facing today's energy sector.

Energy@Ivey offers practical and sustainable solutions through three avenues:

1. Providing independent thought leadership, based on leading-edge research, on energy sector public policy issues in Canada and globally;
2. Connecting people by providing an independent forum for business, government and academia to discuss energy policy development and implementation;
3. Educating future business leaders in energy policy and government leaders in private-sector strategy.

Our view on energy policy:

- The stability and consistency of energy policy has a fundamental impact on the long-run performance of the sector
- Striking the appropriate balance between regulatory independence and political accountability is key to maintaining private-sector investment
- Engaging renewable energy sources is essential for building sustainable economies



Who We Are



Energy@Ivey is led by Professor Guy Holburn and was established in 2010 to research energy policy and strategy.



Guy Holburn is a Professor of Business, Economics and Public Policy at Ivey. He received his Ph.D. from the University of California, Berkeley, and his B.A. Hons from Cambridge University. His research focuses on the relationship between firms and governments, including how government institutions and policies affect business strategy and how firms help improve public policy decisions. Much of his research is applied to strategy and policy issues in the utilities sector, particularly the electric power industry. He has published in leading economics and management journals such as the *Journal of Law, Economics and Organization*, *Academy of Management Journal*, *Academy of Management Review* and *Strategic Management Journal*.

Research Grants: Canada Foundation for Innovation, Olin Foundation, the University of California Energy Institute, California Public Utilities Commission, Ontario Centres of Excellence and the Social Sciences and Humanities Research Council of Canada.

Energy@Ivey has expert faculty appointed as Senior Research Fellows.



Adam Fremeth joined Ivey as an Assistant Professor of Business, Economics, and Public Policy in 2009. He received his Ph.D. from the University of Minnesota. His research focuses on the intersection of firm strategy and public policy making. In particular, his work has helped to better understand how competitive pressures among firms can influence environmental performance in the electricity sector. His research has also studied how asymmetric information affects regulatory policy making.



David Conklin is a Professor of Business, Economics and Public Policy at the Richard Ivey School of Business. His research focuses on the interface between corporations and public policies. He has worked for governments in the design and enforcement of legislation and regulations, and consulted for corporations in influencing public policies and in complying with government legislation and regulations. He has published more than 50 articles and has written or edited more than 30 books on business and public policy issues. He received his Ph.D. from the Massachusetts Institute of Technology (MIT).

Matt Davison is a Professor jointly appointed to the departments of Applied Mathematics and Statistical & Actuarial Sciences at The University of Western Ontario. He also teaches quantitative business analysis methods classes at Ivey. Davison holds the Canada Research Chair in Quantitative Finance and leads the nationwide Modelling Trading and Risk in the Market project for the MITACS Network of Centres of Excellence. His research is centred on energy markets and finance, and lies at the intersection of Industrial Mathematics, Operational Research, and Engineering. He has published in Operations Research, Naval Research Logistics, The IEEE Transactions on Power Engineering Systems and the Journal of Hydrology, among others. He has also carried out energy-related projects for Ontario Power Generation and Environment Canada. His Ph.D. is from the University of Western Ontario.



Thought Leadership



Energy@Ivey is successfully advancing research on energy sector business and public policy issues.

Research

Research at Energy@Ivey focuses on Canadian, U.S. and global energy sector issues.

Current research programs and topics include:

- Canada
 - Renewable energy
 - Managing regulatory uncertainty
- United States
 - The role of special interest groups in policy formulation
 - Mergers and acquisitions in the energy sector
 - The business climate for investment in energy assets
- Global
 - Globalization of energy companies
 - Carbon emissions markets
 - Political risk analysis and management

Research Funding

Professor Adam Fremeth was recently awarded a major grant from Carbon Management Canada for a project titled, "Achieving a Low-carbon, Globally Competitive Energy Economy: Removing Barriers and Cultivating Enablers to Innovation in Canada's Oil Sands & Heavy Oil Industry." He will work with a team of researchers across Canada to systematically investigate the barriers and enablers to breakthrough innovations in reducing greenhouse gas emissions. The project will take pragmatic steps to enable more efficient innovation and commercialization of lower carbon emission technologies in the oil sands and heavy oil production industry. Carbon Management Canada anticipates that this will help increase the speed with which Canada moves to a lower carbon economy while at the same time allowing the country to reap the economic benefits of its generous resource endowment. More information on the initiative can be found at <http://www.cmc-nce.ca/>.

Professors Guy Holburn and Adam Fremeth were awarded a three-year grant from the Social Sciences and Humanities Research Council of Canada for a project titled "Regulatory Externalities and Corporate Environmental Performance." The project addresses the managerial challenges created by the proliferation of environmental regulatory policies that vary by province, state, and country.

Hydro One has contributed funding to Professor Holburn's research on renewable energy policy.

Professor Matt Davison received a five-year renewal of his Canada Research Chair (Tier II) in Quantitative Finance effective July 1, 2011. This Chair was awarded for Davison's research work at the intersection of financial mathematics, energy finance, and operational research. Energy markets must be understood for good energy investment and policy decisions to be made. His proposal exploits the links between real energy investment decisions and the modern theory of quantitative finance to improve the way in which such decisions can be made, especially for renewable energy sources. Professor Davison has also recently been awarded an NSERC Engage Grant entitled, "Energy Price Modelling for Energy Price Management," in association with Canadian engineering company Can-Technologies Ltd.

Canadian Electricity Sector

Guy Holburn	"Guidelines for Governance of the Electricity Sector in Canada," 2011.
Guy Holburn, Kerri Lui and Charles Morand	"Policy Risk and Private Investment in Ontario's Wind Power Sector," Canadian Public Policy, 2010.
Guy Holburn	"The value of policy stability in the renewable energy sector," Ippso Facto magazine of the Association of Power Producers of Ontario, 2010.
Guy Holburn and Kerri Lui	"Governance and Regulation in the Electricity Sector: A Comparison of Alberta, British Columbia and Ontario," 2010.
Adam Fremeth	"Summary Proceedings of Ivey-CCRE Conference on Governance and Regulation in the Electricity Sector," 2010.

U.S. Electricity Sector

Adam Fremeth and Guy Holburn	"Information Asymmetries and Regulatory Decision Costs: An Analysis of U.S. Electric Utility Rate Changes, 1980-2000." Forthcoming. Journal of Law, Economics and Organization.
Natasha Kirby and Matt Davison	"Using a Spark-Spread Valuation to Investigate the Impact of Corn-Gasoline Correlation on Ethanol Plant Valuation," Energy Economics, 2010.
Guy Holburn and Richard Vanden Bergh	"Making Friends in Hostile Environments: Political Strategy in Regulated Industries," Academy of Management Review, 2008.
Fredric Menz and Stephan Vachon	"The Effectiveness of Different Policy Regimes for Promoting Wind Power: Experiences from the United States," Energy Policy, 2006.
Guy Holburn, Pablo Spiller and Adam Fremeth	"Interest Group Representation in Administrative Institutions: The Impact of Consumer Advocates and Elected Commissioners on Regulatory Policy in the United States." Working paper.
Adam Fremeth and Alfred Marcus	"Institutional Voids and Stakeholder Leadership: Implementing Renewable Energy Standards in Minnesota," Stakeholders and Scientists, Springer, 2011.
Adam Fremeth	"Redeployment of Compliance-Specific Capabilities and Renewable Energy Growth in the United States." Working paper.

Global Electricity Sector

Walid Mnif and Matt Davison	"Carbon Emissions Markets," Quantitative Financial Risk Management, editor D. Wu, Springer Verlag, 2011.
Guy Holburn and Bennet Zelner	"Political Capabilities, Policy Risk, and International Investment Strategy: Evidence from the Global Electric Power Industry," Strategic Management Journal, 2010.
Matt Thompson, Matt Davison and Henning Rasmussen	"Natural Gas Storage Valuation and Optimization: A Real Options Application," Naval Research Logistics, 2009.
Bennet Zelner, Witold Henisz and Guy Holburn	"Contentious Implementation and Retrenchment in Neoliberal Policy Reform: The Global Electric Power Industry, 1989-2001," Administrative Sciences Quarterly, 2009.
Guy Holburn and Pablo Spiller	"Institutional or Structural: Lessons from International Electricity Sector Reforms," in The Economics of Contracts: Theories and Applications, editors Eric Brousseau and Jean-Michel Glachant, Cambridge University Press, 2002.

Connecting People



Energy@Ivey faculty have an established record in organizing relevant multi-stakeholder conferences and workshops.

Outreach

Energy@Ivey's interdisciplinary approach provides the ideal opportunity for Ivey to partner with other groups that have committed to research in today's energy sector.

Recent outreach includes:

- Ontario Energy Association Annual Conference (2011)
- Council for Clean and Reliable Electricity Conference Industry Luncheon (2011)
- Energy Regulation and Governance Conference (2010)
- Making Green Energy Happen Conference (2009)
- Transportation and Infrastructure Conference (2008)
- Sustainable Energy Conference (2006)



Guy Holburn at the Making Green Energy Happen Conference

Industry Luncheon, June 2011

On June 2, 2011, Energy@Ivey co-hosted an executive luncheon event in partnership with the Council for Clean and Reliable Electricity, the University of Waterloo and Gowlings LLC. Energy@Ivey Director Guy Holburn was the keynote speaker, presenting policy recommendations in his report, Guidelines for Governance of the Electricity Sector in Canada.

The event brought together 50 energy sector leaders from industry and government to discuss how electricity policies are made and who should be responsible for decision-making.

Professor Holburn cited that Canada could have a stronger, more competitive energy sector with lower costs for consumers if it changes its governance structure. His suggestions for reform included: delegating more independence to regulatory agencies, specifying policy objectives in legislation rather than in ministerial directives, and reforming appointments processes for agency board members.

Holburn surveyed renewable energy companies on how they're responding to Ontario's energy policy framework, and found Ontario is not high on their list for investing because they're concerned about the long-term stability of energy policies. Other provinces in Canada face similar challenges.

"This is a competitive global market. Renewable energy companies are very discerning about where they make their investment decisions," he said. "The lack of long-term policy stability is a significant problem for the sector's performance."



Guy Holburn at the Industry Luncheon



Jan Carr, former CEO of the Ontario Power Authority



Glenn Wright, former Chair of the Board of Hydro One

Governance and Regulation in the Electricity Sector Conference, June 2010

On June 4, 2010, Energy@Ivey hosted the conference, "Governance and Regulation in the Electricity Sector: Balancing Independence with Accountability," in partnership with the Council for Clean and Reliable Electricity and the University of Waterloo. More than 100 representatives from every key stakeholder group, including public and private utilities, government, academia, consumers, labour unions and financial institutions, participated. Panel speakers included Glenna Carr, Chair of the Board of Directors of Atomic Energy Canada Limited; Don Lowry, President and CEO of EPCOR Utilities Inc.; Eileen Mercier, Chair of Ontario Teachers' Pension Plan; and Don MacKinnon, President of the Power Workers' Union. A summary report of the conference proceedings is available on the Energy@Ivey Web site (www.ivey.ca/energy).

Interdisciplinary Workshop, October 2010

In October 2010, Energy@Ivey Director Guy Holburn participated in the interdisciplinary workshop "Treading Water: An Interdisciplinary Exploration of Water Management Issues" hosted by Ivey's Centre for Building Sustainable Value and moderated by Western President Amit Chakma. The event featured five top researchers at Western and drew approximately 100 people from across Western's campus.

Developing Leaders



Energy@Ivey is educating Canada's future leaders about the importance of effective public policy.

Guest Speakers

Ivey's mission is to develop global business leaders who will become proud partners within their communities and contribute to the societies in which they operate. In keeping with our research focus on energy policy, we incorporate education about energy policy and private-sector strategy into our curriculum.

Each year, Energy@Ivey invites guests to speak to our students about public policy. Last year we welcomed Kevin Chan, senior policy adviser for Liberal Leader Michael Ignatieff.



Kevin Chan, Senior Policy Adviser for Michael Ignatieff, (*Guest Speaker, November 9, 2010*)

When it comes to understanding how the government might act, it helps to do your research.

That's the message from Kevin Chan, senior policy adviser for Liberal Leader Michael Ignatieff. Chan, HBA'00, spoke with Ivey students on November 9 about the relationship between business and government and how the government operates.

Prior to working with Michael Ignatieff, Chan served for five years in the Privy Council Office, including time as Executive Assistant and Director, Office of the Clerk of the Privy Council. In that role, he provided policy advice to the Prime Minister, helped manage the Cabinet system, and supported government transitions.

"If you're looking at how to influence the government, one of the things they're always looking at is whether an action is precedent-setting," he said. "There's always a serious concern about what implications this will have for future transactions."

Ivey Case Studies with an Energy Focus:

Adapting to Climate Change: The Case of Sunco Energy and the Alberta Oil Sands

A Model of Clean Energy Entrepreneurship in Africa: E & Co's Path to Scale

Carmanah Technologies Corporation

Carrefour China, Building a Greener Store

Carroway Environmental System

Creating a Process-oriented Enterprise at Pinnacle West

E + Co: A Tipping Point for Clean Energy Entrepreneurship (A)

E + Co: The Path to Scale (B)

Hydro: From Utsira to Future Energy Solutions

India's Negotiations Concerning the Dabhol Power Company 2001-2005

Namaste Solar

Point Lisas Industrial Estate: Trinidad (B)

Power Sector Privatization in Pakistan

Selectpower – Green Energy in Ontario

StormFisher (A): Power with Purpose

Suzlon Energy Ltd.

Tata Power: Corporate Social Responsibility and Sustainability

Wind to Energy: W2E

Demonstrating Leadership

Ivey is the only school with a dedicated research focus on energy policy. Having a research group such as Energy@Ivey housed within a business school allows for a more pragmatic, business-oriented approach to energy issues, especially from Ivey's renowned global perspective.

Carol Stephenson O.C., Dean
Lawrence G. Tapp Chair in Leadership
Richard Ivey School of Business



We welcome your support for first-class research that can significantly affect the performance of business.

Ivey's research and outreach on energy policy already have demonstrated our ability to impact industry, government and other stakeholders. With your support, we will have the resources and expertise to contribute to energy sector policy development, and to educate future business leaders in energy policy. We look forward to hearing from you.

Research is an activity of major importance to the faculty (and doctoral candidates) of the Richard Ivey School of Business. Through research, faculty members remain at the forefront of knowledge and bring to the classroom the excitement that comes with new developments in their fields. To facilitate and encourage research, Ivey is involved with a variety of academic research centres.

AMI - Asian Management Institute

<http://www.ivey.uwo.ca/ami/>

Ben Graham Centre for Value Investing

<http://www.bengrahaminvesting.ca/index.htm>

Ivey International Centre for Health Innovation

<http://sites.ivey.ca/healthinnovation/>

Ian O. Ihnatowycz Institute for Leadership

<http://www.ivey.uwo.ca/research/leadership/>

Lawrence National Centre for Policy and Management

<http://www.ivey.uwo.ca/lawrencecentre/>

Pierre L. Morrissette Institute for Entrepreneurship

<http://www.iveyentrepreneur.ca/>

Agri-Food@Ivey, <http://www.ivey.ca/agri-food/>

Energy@Ivey, <http://www.ivey.ca/energy>

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