2013/2014 Annual Report

IVEY ENERGY POLICY AND MANAGEMENT CENTRE





Energy Policy and Management Centre

Highlights of 2013/2014







2013

JULY 2013 Professor Adam Fremeth awarded inaugural lvey Energy Consortium Fellowship to study Canada's position in global oil and gas markets. OCTOBER 2013 Ivey Energy Centre and Ivey HBA Energy and Resources Club host panel discussion on the future of the Canadian oil and gas industry. **NOVEMBER 2013** Gordon Lambert, Executive Advisor, Sustainability and Innovation at Suncor Energy, delivers keynote speech at Ivey Leaders Forum, discussing the importance of socially and environmentally responsible energy development.



Inside the Ivey Energy Policy and Management Centre

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MARCH 2014 Hon. Bob Rae, Chief Negotiator, Matawa First Nations, Ring of Fire Development, and David Hay, Managing Director and Vice Chair Investment Banking, CIBC World Markets, give keynote addresses at second Annual Energy Leaders Roundtable in Orangeville, Ontario, organized and supported by the Council for Clean and Reliable Electricity, the Ivey Energy Centre, and the University of Waterloo.

2014

JANUARY 2014 Deborah Gullaher, Vice-President Marketing with Suncor Energy, presents the second annual Suncor Energy Emerging Leaders Awards to Ivey students Matthew Simioni, Nicholas Zeeb, Sam Cui and Amy Wang. **FEBRUARY 2014** One hundred leaders from industry, government and academia attend conference on ownership and governance in the municipal electricity sector, organized by the Ivey Energy Centre, WeirFoulds LLP, and the Council for Clean and Reliable Electricity.

Message from the Director



One of the central objectives of the lvey **Energy Policy and Management Centre** is to advance and improve the quality of public discourse on energy policy. This is an area of public policy that has become significantly more complex in recent years as it intersects with an expanding number of other issues: economic prosperity, aboriginal relations, climate change, environmental stewardship, national security, federal-provincial relations, and foreign affairs, to name a few. As a university-based research institution, the Energy Centre is ideally positioned to tackle the inherent complexity of energy policy and to bring an independent, fact-based perspective to the national dialogue.

I am pleased to report that over the last year the Energy Centre has made substantial progress toward its vision of becoming a leading forum for energy policy analysis and discourse. Several new faculty and staff have joined the Energy Centre, bringing with them deep expertise in energy research, which further builds the Energy Centre's foundation in applied policy work. We have launched two new research initiatives in challenging areas that are in need of careful analysis leading to new policy insights: Aboriginal participation in energy, and social license. These projects add to our existing research portfolio on carbon pricing, oil and gas sector growth, utility regulation, renewable energy, mergers and acquisitions, and stakeholder relations. Centre faculty continue to develop our reputation by publishing in top academic journals and by presenting their research at conferences in Canada, the U.S. and Europe.

An important component of the Energy Centre's activities is organizing and supporting multi-stakeholder outreach events that connect industry executives, government officials, academics, students and others in thoughtful conversations about major energy issues. We have been fortunate to host some of Canada's top public and private sector energy leaders at six events over the last year, which were attended by more than 900 participants. These events have had an enduring impact on our understanding and appreciation of others' perspectives and views.

In extending the reach of the Energy Centre, we have forged productive partnerships with other institutions across Canada, including the Universities of Calgary, Ottawa and Waterloo, as well as the Council for Clean and Reliable Electricity and the new Canadian Network for Energy Policy Research. By strategically combining resources and minds, we have a better chance of successfully addressing complex energy problems. I expect these relationships will continue to flourish in the years ahead.

I am especially grateful for the engagement of our donors who have enabled the Energy Centre to grow and develop its impact. We were delighted to welcome ATCO Ltd. and Union Gas Limited to the Ivey Energy Consortium this year, joining OMERS Worldwide, the Power Workers' Union, Suncor Energy Foundation, and TransCanada Corporation. The Energy Centre has ambitious plans for 2015 and beyond, and we look forward to working with all our partners and donors to bring them to fruition.

2013-2014 Highlights

- New faculty and staff with energy sector expertise joined the Energy Centre, significantly expanding the Energy Centre's suite of research projects and outreach capabilities.
- The inaugural three-year Ivey Energy Consortium Fellowship was awarded.
- More than 900 industry leaders, government officials, academics, and students participated in energy policy conferences and panel events organized and supported by the Energy Centre.
- The Ivey Energy Consortium welcomed two new members, ATCO Ltd. and Union Gas Limited, providing \$500,000 in funding over five years to support the Energy Centre's activities, complementing existing support from OMERS Worldwide, the Power Workers' Union, Suncor Energy Foundation, and TransCanada Corporation.
- Four HBA students were awarded Suncor Energy Emerging Leaders Awards.

Program Excellence

Students at Ivey learn about the energy sector through many channels, including courses taught by expert Ivey faculty, case studies, Centre-sponsored conferences and lectures, and through engagement with student Energy and Natural *Resources clubs. In these ways* the Ivey Energy Policy and *Management Centre is helping* the next generation of business leaders understand the societywide implications of energy sector development in Canada, North America and around the world. The Energy Centre also provides internships to several *students each summer to work alongside faculty on energy* research projects, a unique opportunity to learn from academic leaders in the field.

Students honoured to receive second annual Suncor Energy Emerging Leaders Awards



An interest in the energy sector, as well as academic achievement, has resulted in significant recognition for four Ivey HBA students.

Deborah Gullaher, (right) Vice-President Marketing with Suncor Energy, presented the second annual Suncor Energy Emerging Leaders Awards (SEELA) in January 2014 to Ivey students, (left) Matthew Simioni, Nicholas Zeeb, Sam Cui, and Amy Wang.

The awards help build on the students' existing leadership skills and interest in the energy sector by providing them with mentorship, access to development programs, and financial support.

Read more at go.ivey.ca/suncorawards

André Wilkie – pursuing a passion for energy



Growing up in Calgary, Alberta, it seemed only natural that André Wilkie, HBA '14, would find his way into the energy sector. During his summer vacations while studying at Western, Wilkie worked in government and aboriginal relations in the environmental services industry in Alberta. He came to Western University with the intention of attending Ivey after taking his first two years in political science to develop a business component to his education.

Now an HBA graduate, he spent the spring and summer of 2014 as an intern for the Ivey Energy Policy and Management Centre, working with Professor Guy Holburn on a case study about aboriginal engagement in oil and gas infrastructure development.

"As an intern, I get to do a deep dive into something I'm interested in and passionate about, plus it gives me an opportunity to further my research and writing skills," Wilkie said. "You see things more clearly through an academic lens. My project enables me to look at the oil and gas sector as a whole, not just one area. It's a more holistic approach." His efforts have paid off. Wilkie was among the recipients of the inaugural Suncor Energy Emerging Leaders Awards, who were selected on the basis of three criteria: leadership, academic achievement, and demonstrated interest in the energy sector. He was also honoured at graduation with the prestigious HBA Gold Medal, which is given to the student with the highest lvey program grade each year.

Wilkie joined the Boston Consulting Group, one of the top global management consulting firms, at the end of his Centre internship.

Join the Club

Ivey's HBA and MBA student-run Energy and Resources clubs provide opportunities for students to actively engage with energy sector companies and leaders.



HBA Energy & Resources Club

Pat McJannett pmcjannett.hba2015@ivey.ca

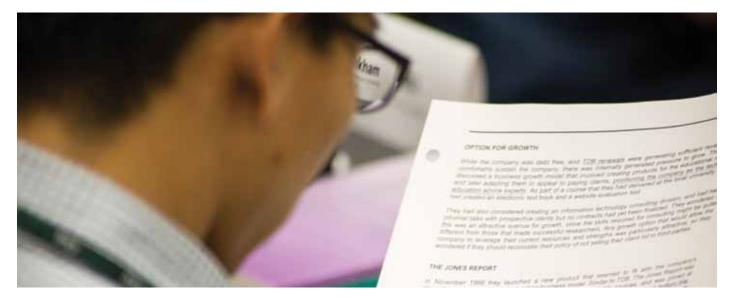
Sam Cui scui.hba2016@ivey.ca

MBA Energy & Resources Club

Ryan Wong rwong.mba2015@ivey.ca

Bryan McCulloch bmcculloch.mba2015@ivey.ca

Ivey cases on energy issues bring real-world relevance to the classroom



The U.S. Shale Revolution: Global Rebalancing?

Laura Alfaro, Richard H.K. Vietor, Hilary White. 09/13/2013.

Beginning less than a decade ago, the U.S. shale revolution began transforming the nation's energy outlook. Because government policy directly controlled gas exports (as LNG), oil exports, and pipeline imports, public policy became the object of intense disputes among oil and gas stakeholders. The case examines the challenges and opportunities this new technology brings.

StormFisher (A): Power with Purpose

Oana Branzei, Stewart Thornhill, Adam Reeds. 12/09/2008.

The case illustrates the tensions, tradeoffs and adaptation challenges involved in designing a clean technology venture in a changing regulatory, funding and competitive context (Ontario, Canada). Beyond understanding the specific challenges faced by the venturing team, students are asked to grapple with the controversies and priorities for Canada's environmental policies in the energy sector, discuss competitive tension or symbiotic relationships between incumbents and disruptors, and actively align new venture design and strategy with a rapidly morphing regulatory, technological and competitive environment.

SafeBlend Fracturing

Benson Shapiro, Frank Cespedes, Alisa Zalosh. 09/23/2013.

Pricing strategies can evolve over time in a highly competitive environment. This case considers the relationship between SafeBlend Technologies and their biggest client, Bristol Natural Gas. Safeblend had been the sole provider of fracturing fluid additives to Bristol, but new entrants to the environmentallyfriendly additives market may be willing to offer Bristol additives for 50 per cent less per gallon. However, these competitors may not be able to meet all of Bristol's demand. Consequently, the trade-off between reducing price to maintain the client relationship and preserving a more profitable price while potentially losing a portion of the client's business is highlighted.

Thought Leadership

New Fellowship energizes Professor Adam Fremeth's research

Professor Adam Fremeth is the recipient of the first Energy Consortium Fellowship, which supports faculty research in applied energy policy issues directed at industry and government audiences.



The Fellowship is made possible through the generous support of the Ivey Energy Consortium partners, including ATCO Ltd., OMERS Worldwide, the Power Workers' Union, TransCanada Corporation, and Union Gas Limited. "The Fellowship provides the resources and time to extend my policy-oriented work, and to engage with industry leaders," Fremeth said.

Fremeth and a number of students have been studying the historic growth of oil and gas in the Canadian economy, leading to a policy paper that documents the changing fortunes of oil versus gas over the last two decades, and the growing dependence of the Canadian energy sector on a single energy product (oil) exported to a single market (the U.S.). The report is due for release in late 2014.

The Fellowship also gives the Energy Centre the resources to work with the HBA and MBA energy clubs to host world-class outreach events. Last year, Fremeth, together with the HBA Energy and Resources Club, organized and moderated a panel session on the future of the Canadian energy industry, dealing with a number of topical issues including the oil sands, the role of First Nations, and the Keystone Pipeline.

Fremeth is also developing partnerships with other Ontario universities, including the University of Waterloo and Trent University, to create joint workshops for graduate students to study energy issues and for faculty to share their research. Pooling resources helps maximize the efforts of individual institutions in providing the highest quality energy sector education.

"It's rewarding to see the work we have put into the Energy Centre begin to pay off as more public and private parties become involved," said Fremeth. "The Fellowship has really allowed me to play an active role and to have an impact."

Grants further the work of the Energy Centre

• Professors Adam Fremeth and Guy Holburn received 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 challenge created by the proliferation of environmental regulatory policies that vary by province, state, and country. The project examines how electric utilities' decisions to invest in renewable energy are influenced by the policies in a jurisdiction, the policies of neighboring jurisdictions, and the policies that regulate competitors.

- **Professor Matt Davison** received a five-year renewal of his Canada Research Chair (Tier II) in quantitative finance. The chair was awarded for Davison's work at the intersection of financial mathematics, energy finance, and operational research. His research exploits the links between real energy investment decisions and the modern theory of quantitative finance to improve the ways in which such decisions can be made.
- Professor Brandon Schaufele has received funding from the Pacific Institute for Climate Solutions to examine the effect of carbon taxes on international trade. *He is a co-investigator and interim* co-lead of Environment Canada's Economics and Policy Research *Network, a group that directly* connects academic researchers to policy-makers. Other grants have been used to investigate the role of prediction in environmental and energy economics, and to study commercial and residential water consumption.

Recent Faculty Research Publications

"The Impact of Consumer Advocates on Regulatory Policy in the Electric Utility Sector"

Adam Fremeth, Guy Holburn and Pablo Spiller. *Public Choice*, 2014.

The authors conduct the first large scale statistical analysis of intervenor participation in regulatory rate hearings, finding that consumer advocates lead to lower allowed financial returns for utilities, and to rate structures that favour residential consumers.

"Making Good Regulations"

Paul Boothe. *Canadian Public Policy*. 2013.

This paper looks at the changing nature of regulation making with a special emphasis on the role that economists can play.

"Using Real Option Analysis to Quantify Ethanol Policy Impact on the Firm's Entry Into and Optimal Operation of Corn Ethanol Facilities"

Christian Maxwell and Matt Davison. *Energy* Economics, 2014.

This paper uses real option methodology to model the financial value of a facility that produces ethanol from corn, and to investigate how abrupt changes in government policy influence firms' entry and investment decisions in the industry.

"Salience of Carbon Taxes in the Gasoline Market"

Nick Rivers and Brandon Schaufele. Working Paper, 2014.

This paper examines the impact of British Columbia's tax on carbon dioxide emissions on consumer demand for gasoline. The empirical analysis demonstrates that BC's carbon tax caused a decline in short-run gasoline demand that is significantly greater than would be expected from an equivalent increase in the market price of gasoline. Accounting for such potential 'over-reaction' by consumers will enable governments to better predict the impact of new environmental and energy policies.

New faculty strengthen Energy Centre



WHO	Margaret Loudermilk, Research Director, Ivey Energy Policy and Management Centre
PREVIOUS SCHOOL	Dr. Loudermilk was a Research Scientist at the University of Chicago's Center for Robust Decision Making on Climate and Energy Policy where she focused on developing and applying statistical methods to the assessment of energy policies.
RESEARCH INTEREST	Her research is mainly methodological, and focuses on measuring the economic impacts of energy policies. In recent work, she has evaluated the effects of government subsidies on the supply and demand of biofuels and the assessment of energy consumption savings from energy efficiency policies by public utilities. Loudermilk is now leading major new research projects for the Energy Centre on social license in the energy and infrastructure sectors, and on aboriginal participation in energy projects.
FINDINGS	As an example of her work, many public utilities do not collect necessary data to measure actual energy efficiency program savings. They rely on the engineering specifications of devices, such as washing machines, to estimate the expected savings. These estimates tend to overestimate the actual energy efficiency savings because they do not account for consumer behaviour.
RELEVANCE	Policy makers need to account for varying consumer behaviours, such as potential avoidance, substitution, and other adoption behaviours. Loudermilk's research highlights the fact that relying on engineering concepts of energy efficiency, such as reducing the energy required to provide a given quantity of service, does not provide an accurate assessment of outcomes in a free market.

research portfolio



WHO	Brandon Schaufele, Assistant Professor in Business, Economics and Public Policy
PREVIOUS SCHOOL	Professor Schaufele comes from the University of Ottawa, where he was an Assistant Professor in the Department of Economics. While at Ottawa, he also served as Research Director for the Institute of the Environment and Sustainable Prosperity.
RESEARCH INTEREST	Schaufele's research focuses on the links between firms, governments and civil society, especially how the incentives of these agents interact to influence business decisions and policy-making. His recent work investigates the underlying motivations for companies and company executives to participate in political activity. Another research stream evaluates how consumers and firms respond to Canadian energy and environmental policy initiatives.
FINDINGS	Insights from Schaufele's research include demonstrating that firms and consumers respond to energy and environmental policies in very different and sometimes counterintuitive ways. Similarly, along with co-authors, he has shown that occupying the office of the chief executive appears to change how individuals interact with politicians and government officials when compared with other stages of their careers.
RELEVANCE	Business leaders need to be aware of the policy environment in which they operate. Among other things, Schaufele's research shows that consumers may over-react to new government policies and that advocacy by industry groups can help governments improve policy design.

Global Community

Advancing the dialogue on Canada's energy policies

The challenges in the energy sector are complex, far-reaching and cross into almost every area of business and policy-making. The Ivey Energy Policy and Management Centre brings together key stakeholders in a neutral forum to discuss and debate policy options and priorities in an informed manner. In this way, the Energy Centre is helping to advance and elevate the national dialogue on Canada's energy policies.



Future of Canadian Oil and Gas Sector Expert Panel: October 1, 2013

The Energy Centre and the Ivey HBA Energy and Resources Club hosted an expert panel discussion on the future of Canada's oil and gas industry. Panelists included Alex Pourbaix, President of Energy and Oil Pipelines at TransCanada; Greg Stringham, Vice President of Oilsands and Markets at the Canadian Association of Petroleum Producers; and Tyrone Brass, Vice President of the Northeastern Alberta Aboriginal Business Association, and Founder of Bayzik Oilsands Electric. The event was attended by 125 students and faculty. See more highlights →

Highlights



Ivey Leaders Forum: November 7, 2013

Gordon Lambert, Executive Advisor Sustainability and Innovation at Suncor Energy, discussed the importance of socially and environmentally responsible energy development at Ivey's 2013 Leaders Forum. His keynote speech to more than 600 Ivey students and faculty represented the "Planet" portion of the Forum's 'People–Planet–Profit' theme.

Municipal Electricity Sector Conference: February 27, 2014

The Energy Centre, WeirFoulds LLP, and the Council for Clean and Reliable Electricity organized a one-day conference in Markham, Ontario on mergers and acquisitions in the municipal electricity sector. The conference attracted 100 industry, academic and government leaders for a series of expert panels on ownership and governance strategy for local electric distribution utilities. Panelists included Robert Warren, Partner, WeirFoulds LLP; Dennis Nolan, Executive Vice-President and Secretary, PowerStream Holdings Inc.; Rob Burton, Mayor, Oakville; and Glen King, Vice President and Chief Financial Officer, FortisOntario Inc.



Ivey Business Review interview with Russ Girling: March 20, 2014

Learn about the challenges and opportunities faced by the President and Chief Executive Officer of TransCanada, a high-profile company in a sector that is under close scrutiny by government, Aboriginal groups, and environmental NGOs.

It's all contained in an in-depth interview with Russ Girling, conducted by The Ivey Business Review – a forum run by current HBA students.

Read the entire article at go.ivey.ca/ russgirling



Energy and Natural Resource Industries Career Event: November 25, 2013

Several Ivey alumni returned to London to discuss their careers in the energy and natural resources sector, and to inspire current students to pursue career opportunities in these fields. Speakers included Chris Guillon, MBA '06, Vice-President of Finance at StormFisher Biogas/GreenMantra Technologies; Adam Jean, HBA '00, Controller at Fortune Minerals; and, Greg Thede, EMBA '12, Division Manager of Business Management at Bruce Power.



Energy Leaders Roundtable: March 26-28, 2014

The Energy Centre partnered with the Council for Clean and Reliable Electricity and the University of Waterloo to organize the second Annual Energy Leaders Roundtable in Orangeville, Ontario. Keynote speakers included the Honourable Bob Rae, Senior Partner, Olthius Kleer Townshend LLP and Chief Negotiator, Matawa First Nations, Ring of Fire Development; David Hay, Managing Director and Vice Chair Investment Banking, CIBC World Markets; and Darrell Bricker, CEO, Ipsos Public Affairs Worldwide.

Connecting with Government Leaders: April 2014

In April, Director Guy Holburn was invited to present at the annual meeting of the Steering Group for the Energy and Mines Ministers' Conference, attended by Associate Deputy Ministers from around the country as well as by senior Natural Resources Canada officials. This provided an opportunity to brief government leaders on the work of the Ivey Energy Policy and Management Centre and to discuss areas for potential collaboration.

Ivey Energy Policy and Management Centre Faculty

Guy Holburn, Director

Guy Holburn is the Suncor Chair in Energy Policy and an Associate Professor of Business, Economics and Public Policy at the Ivey Business School. His area of expertise is in the intersection of business strategy and public policy, particularly as applied to strategy and policy issues in the energy and utilities sectors. He is currently leading a multi-year research program on the regulation of the energy sector in Canada. He has published in leading economics and management journals, and has written for national media. Prior to his academic career, Dr. Holburn worked as a management consultant for Bain and Company in the U.K. and South Africa. Dr. Holburn received his MA and PhD from the University of California, Berkeley, and his BA Hons. (First Class) from Cambridge University. He is a board member of the Council for Clean and Reliable Electricity.

Adam Fremeth, Ivey Energy Consortium Fellow

Adam Fremeth joined the Ivey Business School as an Assistant Professor of Business, Economics and Public Policy in 2009 after completing his PhD in Strategic Management and Organization at the University of Minnesota. He holds an HBA from Ivey and an MA in International Affairs from Carleton University. His research focuses on the intersection of firm strategy and public policy making, and has been supported by grants from the Social Sciences and Humanities Research Council of Canada and Carbon Management Canada. In 2010, he was the recipient of the Best Paper Award from the Organizations

and the Natural Environment Division of the Academy of Management and a finalist for the William H. Newman Award for outstanding paper based on a dissertation.

Margaret Loudermilk, Research Director

Margaret Loudermilk joined the Ivey Energy Policy and Management Centre as Research Director in 2014. She received her PhD in Economics from Michigan State University. Recently, her research has focused on developing and applying econometric methods to the assessment of energy policies for the California Public Utilities Commission and the University of Chicago's Center for Robust Decision Making on Climate and Energy Policy.

Paul Boothe, Research Fellow

Paul Boothe was appointed Professor and Director of the Lawrence National Centre for Policy and Management at the Ivey Business School in September 2012. Dr. Boothe's public sector career includes serving as the Deputy Minister of Finance and Secretary to Treasury Board for Saskatchewan (1999-2001), Associate Deputy Minister of Finance and G7 Deputy for Canada (2004-2005), Senior Associate Deputy Minister of Industry (2007-2010) and Deputy Minister of the Environment (2010-2012).

Matt Davison, Research Fellow

Matt Davison is a full Professor jointly appointed to the departments of Applied Mathematics and Statistical & Actuarial Sciences at Western University. Davison holds the Canada Research Chair in Quantitative Finance and leads the nation wide Modelling Trading and Risk in the Market project for the MITACS Network of Centres of Excellence. Much of his research is on energy markets and finance, and lies at the intersection of Industrial Mathematics, Operational Research, and Engineering.

Richard Dicerni, Research Fellow

Richard Dicerni was appointed Alberta Deputy Minister of Executive Council in September 2014. He held the position of Deputy Minister of Industry Canada from 2006 to 2012. He began a career with the federal government in 1969 and has held a number of executive positions in the federal public service including Senior Assistant Deputy Minister, Health and Welfare, and Deputy Secretary to the Cabinet. In 1992 he joined the Ontario Government as Deputy Minister of Environment and Energy: in 1995, he assumed the position of Deputy Minister, Education, Post-Secondary Education and Training.

Horia Hangan, Research Fellow

Horia Hangan is a Professor in the Faculty of Engineering at Western University and the Founding Director of the Wind Engineering, Energy and Environment (WindEEE) Research Institute. His research is in the simulation and impact of high intensity winds (downbursts and tornados), wind energy (sitting in complex terrain, wind turbine blade aerodynamics) and wind environmental impacts (atmospheric pollution-dispersion, particulate transport).

Brandon Schaufele, Research Fellow

Brandon Schaufele is an Assistant Professor in Business, Economics and Public Policy at the lvey Business School. Prior to coming to Ivey in 2014, Brandon was an Assistant Professor in the Department of Economics at the University of Ottawa as well as the Research Director of the University of Ottawa's Institute of the Environment. Having also served as the Research **Director of Sustainable** Prosperity, a leading Canadian think-tank on environmenteconomy issues, Brandon's research focuses on the links between firms, governments and civil society with special emphasis on corporate political activity in addition to energy and environmental policy.

Rajiv Varma, Research Fellow

Rajiv K. Varma is an Associate Professor and Hydro One Chair in Power Systems Engineering in the Electrical and Computer Engineering Department at Western University. Varma is the project lead in a recently awarded \$6 million research grant from Ontario Centre of Excellence for the project "Large-Scale Photovoltaic Solar Power Integration in Transmission and Distribution Networks." The project is supported by four major industries/ utilities – Hvdro One, Optisolar Farms Canada. London Hydro and Bluewater Power.

Ivey Energy Policy and Management Centre Advisory Board



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