Ian Chow

Senior Consultant



KEY QUALIFICATIONS:

Ian Chow is an engineer with extensive knowledge of energy markets and has testified before the Alberta Utilities Commission as an expert in the subject. He worked on a transmission cost causation study for the Alberta Electric System Operator which was accepted as part of a negotiated settlement, and spoke in 2015 at the EUCI conference in Toronto regarding his views on Ontario's future supply mix.

Prior to LEI, Ian worked in the energy markets department at Ontario Power Generation ("OPG"), which is one of the largest power generators in North America, and for the Ontario Independent Electricity System Operator ("IESO").

EDUCATION:

University of Waterloo, Waterloo, Ontario, Canada, Bachelor of Applied Science, Systems Design Engineering, 2009.

Ecole Polytechnique Fédérale de Lausanne, Switzerland, Bachelor of Applied Science, 2008.

EMPLOYMENT RECORD:

From: 2012 To: present

Employer: London Economics International LLC, United States

Senior Consultant (2013 to present), Consultant (2012 to 2013)

From: 2007 To: 2012

Employer: Ontario Power Generation, Canada

Energy Markets Analyst (June 2009 to February 2012), Power

Trading Analyst (September 2007 to February 2008)

From: 2007 To: 2007

Employer: Independent Electricity Systems Operator, Canada

Market Development Analyst

RECENT PROJECT EXPERIENCE:

Rate design and cost of service experience in Canada and overseas:

- developed a transmission cost causation study for the Alberta Electric System Operator ("AESO"): the study was used for the determination of the AESO's Demand Transmission Service Rate DTS, and was filed with AESO's 2014 tariff application to the Alberta Utilities Commission ("AUC"). The study is intended to cover four main topics: (i) Functionalization of Capital Costs; (ii) Functionalization of Operating & Maintenance ("O&M") costs; (iii) Classification of Bulk and Regional System Costs; and (iv) Implementation Considerations
- assessed rate impact of hypothetical power plant retirement: Ian was the lead analyst on an engagement with a municipality to provide a high level review and rate impact assessment of a hypothetical power plant retirement. Ian also aided in preparing a case study on the impact of removing property tax revenues on local communities.
- advised on the application of performance based ratemaking in Ontario: Ian aided in preparing a presentation delivered before the Ontario Energy Board, regarding the applicability of Performance Based Ratemaking ("PBR") to the regulated assets of OPG.

Other Canadian Experience:

- Ontario EUCI conference panel invitation: Ian was invited to speak on a panel at the EUCI conference regarding Ontario's future electricity supply mix in light of the province's low carbon policy goals.
- advised on Regulated Rate Option return margin in Alberta: Ian testified before the Alberta Utilities Commission regarding an appropriate return margin for the Regulated Rate Option service providers ("RSP"), which was filed with the Alberta Utilities Commission as evidence in the proceeding to review the RSPs' current energy price setting plans ("EPSP"). LEI recommended a comprehensive return margin, expressed in \$/MWh, calculated using the average competitive retailer mark-up as a base and adjusting for customer acquisition costs.
- reviewed hedging strategies to manage electricity spot market risk: Ian managed a small team to review the viability of using Henry Hub NYMEX Natural Gas Futures ("HH Natural Gas Futures) as a potential cross-hedge in managing electricity spot market risk associated with a transmission line development. LEI conducted a review of academic studies of cross hedges, and conducted regression analysis using ordinary least squares and error correction model techniques.
- *assessment of import treatment:* Ian aided in preparing a paper discussing how imports are treated in the capacity markets of NYISO, New England and PJM.
- provided independent evaluation of fund applications: Ian managed a small team in performing independent evaluations on applications to the Aboriginal Renewable Energy Fund ("AREF") and Aboriginal Transmission Fund ("ATF") and provide a report for each application within tight timelines. Reports help the Review Committee make decisions on the projects based on their technical, regulatory and financial viability.

- advised on the review and valuation of a wind plant acquisition: Ian was the lead analyst on an engagement advising on a potential wind plant acquisition. LEI provided critical review and valuation of merchant revenue potential and commercialization risk for a Canadian portfolio management firm. The acquisition was completed, as part of a portfolio, in a deal worth over \$2 billion CAD
- *provided a briefing for Alberta's Minister of Energy:* LEI was engaged by the client to provide a briefing for the Minister of Energy of a Canadian province. Ian aided in preparing two presentations the first was a review of the local retail market, and the second was a wholesale market review of ERCOT, Australia, Singapore, UK and Ontario.
- examination of risk management practices: Ian prepared a report reviewing the risk
 management practices of the client, providing meaningful insights with regards to risk
 management related issues. Analysis included quantification of the magnitude and
 probability of risks being faced, as well as research into the best practices of other similar
 organizations.

Other Hydro-related Experience:

- performed a productivity study on a large generator's hydroelectric assets: led a total factor
 productivity study on a large generator's hydroelectric assets, the second iteration of a
 previous productivity study conducted by LEI. The engagement involved a review of
 productivity studies prepared for academic and regulatory purposes as well as a collective
 assessment of hydroelectric industry peers
- managing an asset portfolio of 5 small hydroelectric plants: Ian is the asset manager for a portfolio of 5 small hydroelectric plants totaling nearly 5 MW. Responsibilities include regulatory filings with the Federal Energy Regulatory Commission (FERC), as well as project management of plant upgrades and repairs

PUBLICATIONS:

Chow, Ian. "Roger Gale paints a picture of 2020." APPrO magazine. February 2010.