

## Craig Sabine

**Craig Sabine**  
Director

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### Professional History

- Energy & Utilities, Public Sector, Managing Consultant

### Education

- 2012 M.B.A. Executive Program, Queen's School of Business, Kingston, ON, Canada
- 2004 B.E.S. Environmental and Resource Studies. Minor, Biology University of Waterloo, ON, Canada

Craig Sabine is a Director in the Global Energy Practice at Navigant and focuses on strategic market and regulatory issues of utilities and other energy companies.

Craig is a seasoned expert in the analysis of energy markets, supporting regulatory affairs, policy development, corporate planning initiatives, investment strategies and operational effectiveness. Across Canada, Mr. Sabine is a respected expert on integrated utility planning, operations and innovation and testifies in support of his analyses and recommendations before regulatory bodies and the courts. Providing advisory services and analytic expertise, Craig supports generators, utilities, government agencies and regulators in a number of key business areas, including:

- Portfolio assessment
- Cost-benefit analysis
- Business planning
- Regulatory economics
- Policy design
- Project due diligence
- Generation procurement and divestiture
- Sustainability strategy and emissions

management

Prior to Navigant Craig was a Senior Manager and Eastern Region Lead at MNP's energy niche and a Manager at ICF Marbek. Craig has built a practice that focuses on the economic evaluation of public policy options, supporting government and private sector decision-making, as well as business strategy. Craig's work has concentrated on evaluating the opportunities and risks presented by energy policy and market design alternatives in the natural gas and electricity markets, as well as climate change policy, emissions trading mechanisms, criteria air contaminant regulations and conservation initiatives. Recently, Craig's work has supported development decisions for new renewable energy and conventional fossil fuel-fired generation projects, transmission and pipeline infrastructure.

Craig's analyses have supported portfolio due diligence efforts, M&A activity and power purchase arrangements. Craig's assignments have supported clients such as the Manitoba Public Utilities Board, Ontario Energy Board, Ontario Power Authority, IESO, AESO, TransCanada, ATCO, Bruce Power, JP

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Morgan, Environment Canada, NRCan, Alberta Environment and Capital Power.

## Professional Experience

### *Energy and Utilities- Regulatory*

- » **Gazifere Corporate Cost Allocation Model** – MNP was engaged to provide the Gatineau based subsidiary of Enbridge with a review of their current cost allocation methodology and determine next steps to develop an amended model reflective of regulatory best practices. Craig managed the assignment and constructed a full suite budgeting model to allocation corporate costs from Enbridge Inc. and EGD to Gazifere, considering the regulatory principles of prudence, cost-benefit and fair market value. Craig will support the new model before the Regie de Energie

### *Energy and Utilities - Regulatory*

- » **OEB Regulatory Reporting Review and Enhancement** – Currently, Craig is managing the first stage of a change initiative at the OEB, to review and perform a gap analysis of the processes, procedures and systems in place at the Board to execute its reporting and entity performance management needs. In support of the new Renewed Regulatory Framework and scorecard performance management approach, the OEB is ensuring its data and reporting structures are aligned with industry best practice to realize the full potential of information coming into its systems

### *Energy and Utilities – Regulatory*

- » **ENMAX Affiliates Review** – Craig recently testified during ENMAX's 2015 rates application before the AUC. Craig managed the third party review and fair market value assessment of ENMAX's 2011 and 2012 affiliate transactions in support of the firm's cost of service rate filing and forward approach for determining affiliate transactions. The goal of the assignment was to provide assurance of compliance with the AUC's Affiliates Code of Conduct and to provide opinion on the fair market value of affiliate transactions between ENMAX and for profit entities. Craig provided IR support and testimony before an AUC panel.

### *Energy and Utilities – Regulatory*

- » **Manitoba Public Utilities Board Expert Witness** - Craig recently concluded acting as an independent expert on behalf of the Manitoba PUB, evaluating the costs and benefits of Manitoba Hydro's current capital development strategy. Craig and a team of other experts provided key insight and analysis to the PUB to support their evaluation of the potential benefits of the preferred plan and set of alternatives in the Needs for and Alternatives to process. The hearing will ultimately result in recommendations for approvals of the Keeyask and Conawapa large hydro projects and determine their risk-adjusted net present value to the rate payers of Manitoba. An assessment of the key risks was considered to support the 20 year capital plan totaling over \$25 billion. Craig provided expert testimony before the Board.

*Energy and Utilities – Process Improvements*

- » **Greater Sudbury Hydro Business Process Improvement** – Craig is a member of MNP’s broad-spectrum utilities’ process improvement team assigned to support a complete BPI of all of Sudbury Hydro’s processes. The assignment will result in full current state and future state process maps, with key recommendations and change management, as well as training for Sudbury Hydro employees. This improvement project was approved for cost recovery by the Ontario Energy Board

*Energy and Utilities – Valuations*

- » **Koskie Minsky Expert Witness Support** – For a law firm representing plaintiffs in a class action case vs. Atlantic Power Corporation, Craig provided expert witness testimony regarding economic and market-based activities’ impacts on the financial position of the power producer. Craig’s testimony included evaluation of the Florida and Ontario electricity markets and the impacts of PPA negotiations on Atlantic’s share value and ability to service dividends.

*Energy and Utilities – Regulatory*

- » **ENMAX Fibre Optics Business Valuation** – In support of the potential for regulatory actions associated with the sale of a non-regulated business, Craig managed the development of a valuation model of fibre optics assets for a Canadian utility. The assignment developed a full model of equipment, construction, labour and operating costs associated with an urban fibre optic network, to provide substantiation for its sale price and the impact of subcontracting the service between the private sector and the utility.

*Energy Markets – Regulatory*

- » **OEB Natural Gas Supply Study** – 2010/14 Natural Gas Supply Markets Review - For the OEB, Craig and a team of gas markets experts developed a review and forecast of the changing nature of natural gas supplies in North America and the impacts on the Ontario utility market. Evidence was presented before the Board and stakeholders in a quasi-hearing/consultation setting.

*Energy and Utilities – Strategic Planning*

- » **IESO Corporate Strategy Review** – Craig was recently the project manager on an assignment aimed to review and evaluate the processes and procedures with which the IESO develops strategic direction. The assignment developed current statement documentation and re-engineered the strategic planning process to include new elements and greater effectiveness in timing. Results and recommendations were presented and approved by the Board of Directors. Consultation and stakeholder engagement was key throughout the project to ensure the change initiative was accepted with broad buy-in.

*Energy and Utilities – Audit and Compliance*

- » **OPA Process Audit and Re-design** - Craig recently supported the OPA in efforts to reconstruct the review and assurance process of regulated price plan claims submitted by Ontario electricity distributors as part of their settlement activities. Craig provided technical expertise on two field audits of the settlement claims and has been managing the development of a compliance and risk-based oriented certification program to replace annual audit..

*Energy and Utilities – Internal Controls*

- » **OEB Internal Controls Review** – Craig participated as subject matter expert and reviewer on an assignment to evaluate the design and compliance of internal controls within the OEB’s procurement, finance and IT departments. Subsequently the MNP evaluated and recommended on the need for and design of an internal audit function within the organization.

*Energy and Utilities – Regulatory*

- » **Alternative Service Delivery Model** – For a number of Ontario LDCs, Craig is currently leading the development of a shared services collaboration to enhance the cost efficiencies and customer service for ratepayers. The collaborative model is an alternative design toward efficiency from traditional consolidation and merger.

*Energy and Utilities – Regulatory*

- » **Distribution Sector Panel** – Craig recently led an MNP team to support a consortium of 4 Ontario LDCs (Greater Sudbury Hydro, North Bay Hydro, Northern Ontario Wires, Chapleau Public Utilities Corp) in the development and presentation of their position on LDC consolidation for the Ministry of Energy and the Panel. The position included analysis of the economic, operational, and community-based implications of various options to drive efficiencies in the sector.

*Energy and Utilities– Regulatory*

- » **Kinder Morgan General Rate Application** – Currently, Craig is working closely with an internal team of operations, project management and finance experts at a major Canadian pipelines company to prepare the rate base for their 2013 rates application to the National Energy Board. Craig is managing all aspects of development and verification of the rate base and capital project accounts to develop one of three key sections of the GRA cost of service.

*Energy and Utilities – Finance and Risk*

- » **Pipeline Abandonment Trust Development** – Pursuant to the current land matters consultation policy process being carried out by the National Energy Board, Craig is working with a team to manage the development of a pipeline abandonment mechanism for a major Canadian pipeline in the form of a trust fund (ongoing)

*Energy and Utilities – Regulatory*

**Enbridge Shared Services Allocation Model** - Recently at MNP, Craig participated on a team who assessed the shared services cost model of one of Ontario’s largest natural gas distribution utilities, whose parent company provides shared services support in a number of operational functions. To approve the natural gas rates charged to Ontario consumers, Enbridge Gas Distribution must have its shared services cost allocation approved by the OEB after third party assessment. The analysis included benchmarking the shared costs of several functions to other cost of service and ratemaking submissions of gas and electric utilities

*NERC Standards Compliance – Reliability Standards*

- » **ATCO NERC Audit** - Craig and an expert team completed a gap analysis of ATCO’s procedures to comply with AESO reliability standards, which are largely based upon NERC standards. ATCO will complete an audit with the AESO to achieve compliance with 9 GOP reliability standards and provided recommendations for improvement of evidence packaging, format and adherence to each requirement and sub-requirement. Craig, led management of the project, supported assessment of the standards and reviewed the resulting gap analysis report.

*NERC Standards Compliance – Reliability Standards*

- » **TransAlta NERC Compliance** - Mr. Sabine worked with a team of reliability, compliance and NERC standards experts to support TransAlta’s development of corporate internal compliance program that will enable the firm to build and support evidence of compliance with NERC and provincial reliability standards programs, in all of its operating jurisdictions. The project will position TransAlta as a premier Canadian utility in the reliability space and ensure internally consistent procedures are met within day to day operations and compliance efforts.

*Energy Markets – Finance*

- » **Environment Canada Production Cost Model** - Mr. Sabine managed the development of a capital project costing model for Environment Canada to support their policy modeling efforts in the electricity generation sector. The tool will be used to set the basis for capital and lifetime costs of power plant options, including financing and IDC costs, which can be fed into simulation and optimization models supporting policy and market analysis.

*Energy Markets– Forecasting*

- » **Capital Power California Market Review** - Mr. Sabine led an analytic assignment completed for Capital Power identifying and reviewing the key drivers in the California power markets. The analysis aimed to evaluate the attractiveness of the California market for investment in acquisition opportunities or greenfield projects, based on the current market and price direction, market rules, air emissions, climate and water policies and overall robustness of the energy markets in the western United States. The project culminated in a market price forecast and policy risk evaluation report.

### *Energy Markets – Regulatory*

- » **SolarRay PJM Due Diligence** - For an investment firm specializing in deploying capital for large-scale solar energy projects, Mr. Sabine completed due diligence on the interconnection process for 100 MW of solar.

### *Energy Markets – Forecasting*

- » **Ontario Electricity Market Modeling** - In August of 2008, Craig and his team were employed by the multinational integrated steel maker, Arcelor-Mittal Dofasco, to provide electricity market intelligence for Ontario.

### *Energy Markets – Forecasting*

- » **Lehman Brothers Alberta Electricity Market Review** - For a large investment bank, a detailed assessment of the Alberta power market, including 20 year wholesale electricity price forecast was provided.

### *Energy Markets – Environmental*

- » **Canadian Hydro Power Association Policy Modeling** - Mr. Sabine directed a study for the CHA designed to assess the impacts of different GHG regulation frameworks on the Canadian power sector.

### *Energy Markets – Environmental*

- » **Canadian Electricity Association Market Modelling** - Mr. Sabine led a team employed by the CEA and its members, including all major generating utilities across Canada, to aggregate and analyse electricity sector futures outlooks.

### *Energy Markets – Market Forecasting Environmental*

- » **Bruce Power Market Forecasts** - Craig collaborated with Bruce Power using IPM® to develop power market analyses and assessments of potential environmental markets for non-emitting generation. Analysis included changes to capacity mix, dispatch, emissions patterns and interregional transmission for Ontario, New Brunswick, Saskatchewan and Alberta. The work identified the potential return new nuclear projects might receive, assuming participation in greenhouse gas and air pollutant markets..

### *Energy Markets – Natural Gas and LNG*

- » **Husky Oil New Market Demand Study** - In April of 2007, Craig’s ICF team released a follow-up on its December 2000 report to the Newfoundland Offshore Industries Association. The study investigated the commercialization of natural gas in Newfoundland from offshore (Whiterose) gas plays in the northeast Atlantic. Craig led the assessment and examined the potential markets for offshore gas in Newfoundland and the potential for shipment by pipeline or LNG to the greater North American marketplace. The analysis was key in determining the scale of residential, commercial, power and industrial demand in Newfoundland. The industrial demand focused on the potential feasibility of a GTL facility and various petrochemicals plants on the island of Newfoundland.

### *Natural Gas – Liquefied Natural Gas Environmental*

- » **Environment Canada LNG Impacts Study** - Craig and team of natural gas market experts authored a technology paper for Environment Canada to support their understanding of the LNG value chain, infrastructure and potential environmental impacts of growth in the LNG market in Canada. The paper outlined the technologies and operations at liquefaction, transport, gasification and other LNG facilities and each of their studied environmental impacts and emissions releases.

### **Publications**

- » Adaptable Electric Utilities: The Future Ain’t What it Used to Be! Blog Post September 2014.
- » Sabine, Craig. “The 21st Century Electricity Grid: The Right Time to Catch Up”. Whitepaper. September 2009.
- » Sabine, C., Gilmore, A., Gibbons, W. and V. Young. 2002. “Environmental Education & the Ontario Elementary School Curriculum”. Interactions: The Journal of the Ontario Society of Environmental Education. Spring 2002, Vol 14: 3.

### **Testimony**

- Coffin and Lowry v. Atlantic Power Corporation. March, 2015
- ENMAX General Rate Application Hearing, AUC. July, 2014
- Manitoba Hydro NFAT Hearing, MPUB. April, 2014
- Manitoba Hydro NFAT Hearing, MPUB. April, 2014
- Natural Gas Markets Review Consultative Hearing, OEB. 2010